REPORT ON REQUIREMENTS NECESSARY FOR GUYANA

TO ACCESS IDENTIFIED PAYMENTS

FOR

ECOSYSTEMS SERVICES MARKETS

Project: STRENGTHENING GUYANA'S CAPACITY TO MANAGE FOREST RESOURCES AND ENVIRONMENTAL SERVICES THROUGH RESOURCES ASSESSMENT AND MONITORING CHANGES IN DEFORESTATION AND DEGRADATION.

Prepared and submitted

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TABLE OF CONTENTS PAGE NO.

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ABBREVIATIONS AND ACRONYMS

CCBA	_	Climate, Community, and Biodiversity Alliance
CCBS	_	Climate, Community, and Biodiversity Standards
CDM	_	Clean Development Mechanism
CES	_	Compensation for Environmental Services
CI	_	Conservation International
COP	_	Conference of Parties
EPA	_	Environmental Protection Agency
ES	–	Environmental/Ecosystem Services
EVN	_	Economic Value to the Nation
GFC	_	Guyana Forestry Commission
GGMC	_	Guyana Geology and Mines Commission
GHG	_	Greenhouse gas (GHG)
GIS	_	Geographical Information Systems
GSLC	_	Guyana Lands and Survey Commission
MOAA	_	Ministry of Amerindian Affairs
MOF	_	Ministry of Finance
MOFTIC	_	Ministry of Foreign Trade and International Cooperation
MRV	_	Monitoring, Reporting and Verification
NGOs	_	Nongovernmental Organisations
NTFPs	_	Non-timber forest products
OCC	_	Office of Climate Change
ODA	_	Overseas Development Assistance (ODA)
OECD	–	Organisation for Economic Co-operation and Development

PES	–	Payments for Environmental/Ecosystem Services
PES	_	Payments for Ecosystem Services
REDD	–	Reduced Carbon Emissions from Deforestation and Forest Degradation
RES	_	Rewards of Environmental Services
UNCBD	_	United Nations Convention on Biological Diversity
UNCBD	_	United Nations Framework Convention on Biological Diversity
UNFCCC	–	United Nations Framework Convention on Climate Change
WWF	_	World Wildlife Fund

EXECUTIVE SUMMARY

1.0 Background

There is now a growing consensus[1] around the world that payments for ecosystem services (PES), if cost effective, can play a significant role in reducing deforestation and forest degradation, as well as promoting forest carbon enhancement (REDD +), although there are marked differences at the regional level for example(Latin America, Southeast Asia) in the adoption of these mechanisms.

REDD strategies aim to place more value on standing forest than when trees are logged or removed for financial and livelihood purposes by creating a financial value for the carbon stored in trees. Thus, it is intended that the assessment and quantification of forest resources will lead to payments made by developed countries to developing countries for the latter to keep their standing forests to assist the former in meeting their greenhouse gas (GHG) emission reduction obligations under the United Nations Framework Convention on Climate Change (UNFCCC).

In 2009, Guyana charted an 'economically rational' deforestation path that involves reducing forest cover by approximately 4.3 percent (approximately 630,000 ha) per annum over the course of 25 years, leaving intact as protected areas the 10 percent of Guyana's forests with the highest conservation value. Notably, Guyana's REDD Plus mechanism is linked to a wider national development policy and planning process, which is encapsulated in Guyana's Low Carbon Development (2010)[2]. The McKinsey & Company Report (2008) argues that avoided deforestation in Guyana could bring for the world avoided emissions of greenhouse gases which are the equivalent of 1.5 gigatons of CO^2e by 2020. The challenge therefore is to access the level of financing for REDD Plus that will align Guyana's economy along a low carbon trajectory (outlined in the LCDS), and in so doing, mitigate the principal drivers[3] of deforestation[4] that lie outside the forest sector.

The Report seeks to identify pathways to build the capacities needed to initiate markets for forest ecosystem services. Market opportunities could include, landscape services, carbon sequestration and biodiversity, among others. The Report is divided into 5 sections as outlined below:

Section 1	-	Setting the Global and National Contexts
Section 2	-	Markets and Payments for Ecosystems Services: Nuts and Bolts for Guyana
Section 3	-	Key Requirements to access identified Markets for Guyana

[1] See, for example, the Eliasch Report, 2008.
[2] The LCDS provides insights on how to stimulate the creation of a low-deforestation, low-carbon, climate-resilient economy, and outlines how Guyana's forest helps the world (by limiting world based emissions), and how transitional payments from Guyana's climate change partnership with Norway and others, followed in the longer term by payments under the REDD can create the platform for an effective strategy to avoid deforestation.
[3] Key drivers include commercial logging and timber extraction, mining, agriculture and infrastructure development.
[4] 0. 3 per cent as current proxy deforestation rate. The reference level is 0.45 % derived from a global deforestation rate compared to a national deforestation rate.

Section 4 - Challenges
Section 5 - Policy Conclusions and Roadmap

Our approach is to investigate and propose ways to develop pilot market opportunities in the PES markets in areas identified through desk research, workshop activity, and expert opinions.

2.0 Payments for Ecosystem Services

The widespread interest in PES is supported by a number of International Conventions which provide several entry points for bringing new and innovative thinking on biodiversity financing. Chief among these are (i) the United Nations framework Convention which came into force in 1994 and was ratified by Guyana on August 29, 1994; and (ii) the United Nations Convention on Biological Diversity (UNCBD) which came into force on December 29, 1993 and was ratified by Guyana the same day as the UNFCCC.

The PES approach is based on a theoretically straightforward proposition: pay individuals or communities to undertake actions that increase levels of desired ecosystem services. A formal definition has been given by Sven Wunder: ''A PES scheme, simply stated, is a voluntary, conditional agreement between at least one 'seller' and one 'buyer' over a well defined environmental service—or a land use presumed to produce that service.'' There are four broad types of ecosystem service payments: (i) *public payment schemes* to private land and forest owners to maintain or enhance ecosystem services; (ii) open trading between buyers and sellers under a regulatory cap or floor on the level of ecosystem services to be provided; (iii) self-organized private deals in which individual beneficiaries of ecosystem services contract directly with providers of those services; and (iv) eco-labeling of products that assures buyers that production processes involved have a neutral or positive effect on ecosystem services.

3.0 Stakeholders' Views on PES

Overwhelmingly, stakeholders held the view that PES is a mechanism for halting the loss of forest by providing incentives for conservation and sustainable utilisation.

Stakeholders expressed the common view that PES is beneficial to Guyana for the following reasons:

- PES can help Guyana achieve its policy objectives of low carbon development as well as its obligations to the International Conventions.
- Benefits from PES schemes such as REDD+ can used to develop low emission economic activities, thus reducing poverty, improving social services (health, education) deliveries, promoting sustainable development and achieving the Millennium Development Goals (MDG).
- PES can be beneficial to Guyana by providing a mechanism for obtaining compensation for these various services.

- PES will serve as either a disincentive to short term development, or as a means to secure natural capital for future benefits.
- Guyana with its large array of mostly untouched forests can use PES as a means of bridging the gap of uneven development between rural and urban areas, since it is forest dwelling communities/rural poor who would and should be the primary beneficiaries.

Stakeholders' responses, in conjunction with information obtained from the literature reviewed and input from participants of the PES Workshop that was held in May 2011 suggest that landscape beauty and carbon sequestration hold the current greatest potential for Guyana in view of global market issues and Guyana's state of readiness.

The general view was that engaging in PES should be a national activity, with the involvement of all levels of stakeholders. Communities would have the option to be part of such a scheme, based on choice and fulfilment of agreed technical criteria (as is the case of the Low Carbon Development Strategy.

Three principal systems of compensation have been considered appropriate for Guyana:

- ❖ Monetary (Cash transfers) for example Carbon Storage and Sequestration
- ❖ Tax Incentives
- ❖ Payment in kind, which can lead to capacity building which could ultimately benefit the resource because of increased management and monitoring capacity.

Eleven (11) critical elements that are required for an enabling environment (in Guyana) to access PES markets: (i) international sources of funding and seed funding (ii) policy (iii) legislation (iv)standards and guidelines; (v)market information; (vi)human resource capacity building; (vii) public education & participation; (viii)technical assistance; (ix)scientific research; (x)establishing property rights; and (xi)interagency coordination.

4.0 Guyana's State of Readiness

Guyana is in the forefront of REDD readiness for developing countries, some of which are seeking to learn from our lessons and adapt our strategies. The fact that the country is recognised as an example for REDD development strategies is suggestive of our advanced state of readiness. Specifically, Guyana's state of readiness is based on a number of taken initiatives in respect of PES schemes. Chief among these are:

- Initial valuations of our forests by the Mc Kinsey Group & Company ;
- A MRV Roadmap and implementation of two aspects of work as outlined in the Road Map: forest area change assessment and forest carbon stock assessment;

- Design of a national forest carbon monitoring system forms an essential component of Guyana's MRVS.
- Development of a REDD+ Governance Development Plan
- Establishment of a national baseline of environmental services in Guyana and examination of ways in which a monitoring system for ecosystem services can be integrated in the national MRVS.
- Submission and approval of Guyana's Readiness Plan Idea Note (RPIN)
- Commencement of implementation of Guyana's RPP
- Establishment of a system for Independent Forest Monitoring (IFM) related to the MoU between Guyana and the Norway.

5.0 Specific Challenges

While Guyana has unarguably undertaken several initiatives aimed at creating that enabling framework for the implementation of PES, the following points which have emerged from the information obtained from key stakeholders must be recognised.

- There is a need to develop more comprehensive legislation since as compared to the situation in Costa Rica there are no laws on non tangible resources for sale. The Costa Rican law can be tailored to suit local conditions. It was noted that the current rules for eco-systems apply only to the Norway Agreement which was a one time response to a situation.
- Some institutional capacity has been developed but there is room for improvement. Implementation, monitoring and verification systems also need improvement as does the capacity for negotiating skills to the level of that existing in the OCC.
- Work needs to be done to improve the current limited technical support systems.
- There is need for greater decentralization, giving more power to local people.
- Legal recourse can be included in a law for PES.
- Guyana has a lot to do and a far way to go in terms of financial resources and in some aspects human capacity building.
- Guyana's natural resource management systems need further strengthening.
- Sector policies may need to be assessed, especially in light of the LCDS, to identify and address possible overlap and duplication. In some instances the assignment of responsibilities in not clear.
- A sustainability appraisal of the LCDS would be a valuable exercise, indicating how other policies are enhanced by the LCDS or may have a negative effect on the economy. The policy on the importation of second hand vehicles was cited as an example of the need for appraisal. Policies such as those on agriculture, the environment and forestry would undoubtedly benefit from such as exercise.
- In some aspects, Guyana is well prepared to move forward with a PES programme, as demonstrated by the current example of the Norway – Guyana partnership. PES is also compatible with the developmental reorientation outlined by the LCDS. However, the implementation of additional PES programmes will require investment in a number of key areas.

The first area is feasibly studies (including market information and scientific research to establish baseline). Once the feasibility has been determined, then there will need to be investments into policy/legislation development, institutional capacity building and other technical assistance.

6.0 Policy conclusions

- Payments for ecosystem services (PES) have considerable potential for raising the viability of sustainable forest management (SFM) and conservation and delivering pro-poor benefits, but are not a panacea. PES should form part of a package of instruments, especially those which reduce the opportunity costs of SFM and conservation.
- Avoided deforestation or REDD (Reduced Emissions from Deforestation and Degradation) has most potential, but also faces a complex set of issues. It is hoped that the international commitment to climate change mitigation will prove sufficient to overcome these.
- Early PES experiences reveal some positive equity impacts like improved tenure security, community empowerment, organisational and social capital development. While PES do not inherently favour pro-poor outcomes, experience is showing that trade-offs between environmental and social objectives can be managed with appropriate external support.
- Governments (and donors) have a vital role in promoting equitable governance, secure tenure, an enabling policy, legal and institutional framework, capacity building of national PES providers, collective institutions and transparent PES monitoring arrangements. These would reduce ecosystem service buyer risks and transaction costs, and facilitate participation.

Stakeholders have identified the following activities as the way forward. These activities have provided a point of reference for the design of a Roadmap.

- Analysis of human capacity needs.
- Examination o f policy and legal framework needs
- Create the legislative framework for forest preservation and PES and for a low carbon economy (LCE).
- Involve, educate, and build capacity among our hinterland communities/farmers to access the PES market. Teach them to calculate values for services/establish a valuation system.
- Expand the OCC to include communities and other stakeholders; regional offices.
- Establish a central verification system or a registration body for PES.
- Establish a National Biodiversity Institute to act as a clearing house for selling biodiversity services.
- Prepare a marketing plan for PES.
- Adopt a market based approach for PES, biodiversity and conservation.
- Create an investment specific PES guide as a strategic tool to attract investors.
- Take definitive positions as outcomes of the international negotiations.

- Continue to build human and technical capacity.
- Consider best practice case studies BUT DO NOT simple transfer experience. Any experience transferred should be adaptable to the context of Guyana (which has many unique aspects) so care should be exercised here.
- Focus attention on building (PES) constituencies locally, nationally, and regionally.
- Once this research is conducted and the results are peer reviewed, then the next stage could be public consultations to inform a governmental policy decision.

7.0 The PES Roadmap for Guyana

The PES Roadmap that is presented below is an attempt to provide a clear and agreed sense of direction and to establish synergies the relations between various REDD + initiatives in Guyana. The following strategic areas have informed the various domains that the Road Map will target.

- REDD + Policy and Accounting Frameworks;
- Legislative framework;
- International Financing and Seed Funding;
- Standards and Guidelines;
- Market Information;
- Public Education and Participation;
- Human Resource Capacity Building;
- Technical Assistance;
- Scientific Research;
- Property Rights; and
- Inter-agency Coordination.

In each case deliverables, timelines, performance indicators and stakeholder institutions have been identified.

SECTION 1 SETTING THE GLOBAL AND NATIONAL CONTEXTS

1.1 Introduction

The Guyana Forestry Commission (GFC), being the State Agency to plan for and manage the State Forest Estate, has advanced efforts towards enhancing sustainable forest management and strengthening important areas such as legality, forest industry and training in harvesting practices. One important aspect of natural resources management is the area of environmental services.

In accordance with the Contract prepared by the GFC, the purpose of the Consultancy is to "*to strengthen the Guyana Forestry Commission's ability to maintain the current levels of deforestation and forest degradation, through sustainable forest management and develop Guyana's capacity to engage in ecosystem services*"…, while the specific objective is "….*to enable more effective planning and management of forest resources and environmental services in the State Forest Estate, resulting in enhanced monitoring of deforestation and forest degradation*".

Outputs of the Consultancy constituted: (i) collation of information on available market mechanisms for environmental services; (ii) compilation of e a report on available market mechanisms, incentives programmes and remuneration systems for environmental services (iii) assessment of the suitability of existing mechanisms to Guyana's context; (iv) production of communication and training materials necessary to execute (v); (v) provision of training to relevant personnel, including the GFC, on the process to target identified mechanisms; and (vi) evaluation of the requirement necessary to access identified markets.

An Amendment to the Contract was subsequently prepared to facilitate additional work that is referred to as Output 4. Thus, this Report aims to:

- Evaluate the requirements necessary to access identified PES markets;
- Develop a Roadmap for Guyana to access ecosystem services payments with clear timelines and deliverables; and
- Prepare a generic framework for a PES assessment and action plan that can be applied to any community

Essentially, the Report seeks to identify pathways to build the capacities needed to initiate markets for forest ecosystem services. Market opportunities could include, landscape services, carbon sequestration and biodiversity, among others.

In each ES area we will identify the key market requirements - such as measurement of ecosystem services, the buyers and sellers and how they can interact and what policy changes are needed to facilitate markets. We will also be examining how markets for ecosystem services can work with other strategies to achieve forest resource management targets.

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Section 4	-	Challenges
Section 5	-	Policy Conclusions and Roadmap

The methodological approach adopted for the development of this Report was based on a desk review of relevant national and international documents (reports, books, articles etc.), key informants' interviews, and the Consultants' judgement.

1.2 Background

Current scientific evidence of global climate change and its impacts signals to the world that strong and decisive action is needed to stabilize levels of atmospheric CO_2e at 445-490 parts per million (ppm) in order to avoid the worst case scenarios developed by the Inter-Government Panel on climate Change.

Further, seventeen per cent of the global greenhouse gas emissions are accounted for by forest loss, primarily through deforestation and forest degradation (Rogner *et al,* 2007). The root causes are often cited as a market failure to incentivise sustainable use and better management of the resource, and the different opportunity costs to be borne by landowners[5]. Additionally, there has been increasing awareness (globally) of the dangers and costs of allowing forest services to be degraded or lost. This degradation can have local impacts, such as floods and landslides, or broader impacts, like global climate change.

There is now a growing consensus[6] around the world that payments for ecosystem services (PES), if cost effective, can play a significant role in reducing deforestation and forest degradation, as well as promoting forest carbon enhancement (REDD +), although there are marked differences at the regional level for example(Latin America, Southeast Asia) in the adoption of these mechanisms. Significantly, the Eliasch Review (2008) estimated that the mean damage cost of the climate change impacts of forest emissions will have risen to around $1 trillion a year by 2100.

REDD strategies aim to place more value on standing forest than when trees are logged or removed for financial and livelihood purposes by creating a financial value for the carbon stored in trees. According to Eliasch (2008:19), "*as long as the cost of lost forest carbon and other ecosystem services are not reflected in the price of products supplied from converted forest land then, in financial terms, forests will*

[5] Forest owners, both public and private, have had little or no financial incentive to maintain ecosystem services, because they have traditionally received income only from timber extraction or by converting forested land to other uses

[6] See, for example, the Eliasch Report, 2008.

often be worth more to landowners cut than standing." Thus, it is intended that the assessment and quantification of forest resources will lead to payments made by developed countries to developing countries for the latter to keep their standing forests to assist the former in meeting their greenhouse gas (GHG) emission reduction obligations under the United Nations Framework Convention on Climate Change (UNFCCC). For example, in 2007, during the UNFCCC's COP 13, Norway's International Climate Change and Forest Initiative was launched. Norway announced its readiness to allocate up to NOK 3 billion a year over a period of five years toward efforts to reduce greenhouse gas emissions from REDD in developing countries (including all types of tropical forests)[7].

1.3 The Environmental Services of Forests

Forests (arguably), are among the most critical providers of ecosystem services[8] globally (Nasi, Wunder and Campos, 2002). Such services cannot be replaced on such a grand scale by technology.

Forests have multiple ecosystem services: provision of consumption goods, regulation of local and global climate, buffering weather events, regulating the hydrological cycle, protection watersheds and their vegetation, biodiversity (diversity within species, between species and of ecosystems), and providing a vast store of genetic material. In some publications (example, Forest Trends, 2002), the ecosystem services of forests are categorised broadly as: (i) carbon storage and sequestration; (ii) hydrological services and (iii) biodiversity services.

[7] For more details see Bond, Grieg-Gran et al (2009) Incentives to sustain forest ecosystem se4rvices: A review and lessons from REDD. London: IIED.

[8] Ecosystem services are basically the benefits that an ecosystem provides which are essential to society. People, companies, and societies rely on these services — for raw material inputs, production processes, and climate stability.

Table 1 identifies specific ecosystem services.

Table 1 Ecosystem Services of forests.

FORESTS	
Environmental Goods	• Food • Fresh water • Fuel • Fiber
Regulating Services	• Climate regulation • Flood regulation • Disease regulation • Water purification
Supporting Services	• Nutrient cycling • Soil formation
Cultural Services	• Aesthetic • Spiritual • Educational • Recreational

Source: Millennium Ecosystem Assessment 2005 (http://www.millenniumassessment.org), Modified

1.4 REDD Plus and Guyana[9]

In 2009, Guyana charted an 'economically rational' deforestation path that involves reducing forest cover by approximately 4.3 percent (approximately 630,000 ha) per annum over the course of 25 years, leaving intact as protected areas the 10 percent of Guyana's forests with the highest conservation value.

Notably, Guyana's REDD Plus mechanism is linked to a wider national development policy and planning process, which is encapsulated in Guyana's Low Carbon Development (2010)[10]. The McKinsey & Company Report (2008) argues that avoided deforestation in Guyana could bring for the world avoided emissions of greenhouse gases which are the equivalent of 1.5 gigatons of CO^2e by 2020. The challenge therefore is to access the level of financing for REDD Plus that will align Guyana's economy along a low

[9] This sub-section has been taken from the consultants' Report on Output 1.

[10] The LCDS provides insights on how to stimulate the creation of a low-deforestation, low-carbon, climate-resilient economy, and outlines how Guyana's forest helps the world (by limiting world based emissions), and how transitional payments from Guyana's climate change partnership with Norway and others, followed in the longer term by payments under the REDD can create the platform for an effective strategy to avoid deforestation.

carbon trajectory (outlined in the LCDS), and in so doing, mitigate the principal drivers[11] of deforestation[12] that lie outside the forest sector.

According to the McKinsey estimates, by preserving forest "Guyana forgoes economically rational opportunities that could net it the equivalent of $430 million to $2.3 billion in additional value per year." In fact, the Company estimates a "most likely figure" of US$580 million a year. The proposal is therefore to raise this amount of money through carbon market. Unfortunately, the Political Accord that ensued from the Copenhagen Meeting held in December 2009 is less definitive about the emergence of this REDD financial mechanism. To compound the issue of financing, the infrastructure to implement the Climate Fund facility (Copenhagen Green Climate Fund which equals US$10 billion/yr from 2010-2012)[13] is not fully established and therefore not currently implementable. More importantly, there are still debates on terrestrial carbon markets and issues of additionality, leakage, and permanence[14].

Guyana's best policy decision is therefore to explore all financial possibilities (especially non- market sources referred to as novel instruments) to channel payments into the country through a combination of a national REDD fund (for example, by establishing a Guyana REDD Plus Investment Fund) and direct project-based funding. Already, a national level initiative is being supported by the Norwegian Government. In a recently signed Memorandum of Understanding (MoU) between the two governments, Norway has pledged financial support for US$30 million to be paid by 2010 to support the Guyana REDD Plus Investment fund and US$ 250 million to be paid by 2015 based on certain conditions being met by Guyana. Obviously, there still remains a huge financing gap in terms of international, multilateral or bilateral financial support and the stated Economic Value of Guyana's forest to the Nation (EVN).

In response, the growing domain of markets and payments for ecosystem services offers another avenue for incentivizing sustainable land uses, potentially on landscape scales. Specifically, ecosystem service-related markets are emerging around the world. Formal markets—some regulatory and others voluntary—now exist related to greenhouse gases / carbon, water, and even related to biodiversity. In addition, focused business deals and payments for ecosystem services (PES) are also being forged by companies investing in maintenance or restoration of particular ecological systems on which they rely. These markets and payments create incentives for investing in the long-term flow of ecosystem services.

PES provide a mechanism by which the people who benefit from services can pay for maintenance over time and those who provide the services can realize financial benefits for their efforts. The innovation

[11] Key drivers include commercial logging and timber extraction, mining, agriculture and infrastructure development.

[12] 0. 3 per cent as current proxy deforestation rate. The reference level is 0.45 % derived from a global deforestation rate compared to a national deforestation rate.

[13] See UN, FCCC/AWGLCA/2009/L.7/Add.2/Rev.1. See also, Articles 6, 8 and 10 of the Copenhagen Accord.

[14] See, for example, Eliasch Review: Climate Change: Financing Global Forests Crown, 2008 and Ivan Bond, Maryanne Grieg-Gran, Sheila Wertz-Kanounnikoff, Peter Hazelwood, Sven Wunder and Arild Angelsen (2009) Incentives to sustain forest ecosystem services. A review and lessons from REDD.AA review and lessons for REDD

and the characteristic that differentiates PES from previous paradigms or approaches is that the payments are conditional or contingent on changes in land use by the ecosystem service provider.

Current ecosystem service payments include both monetary and non-monetary transactions (such as deals related to property rights) between an individual (or a group of people) who provides services ("sellers") and an individual (or a group) who pays for maintenance of these services. The key attribute of these buyer/seller transactions is that the focus is on maintaining a flow of a specified ecological service, such as retaining water filtration, erosion protection, and/or carbon sequestration capabilities. In order to ensure that the ecological service is indeed maintained—as buyers expect for their money—the transactions require regular, independent verification of sellers' actions and effects on the resources. In sum, the key attributes of ecosystem service payments and markets are that sellers (a) maintain specific ecological structures and functions, and (b) remain accountable to independent verifiers that the service being paid for is indeed being delivered.

It is important to note that the definition of payments for ecosystem services does not include transactions in which money exchanges hands but there is no associated requirement that the recipient of funds actively takes particular natural resource management actions. For example, if a community were to allow a conservation organization to use and manage their historical common property for wildlife protection and revenue sharing, it would not necessarily be a payment for ecosystem service. In this case, the community is not specifically taking action (and/or foregoing other practices) to maintain a particular set of ecosystem services. Rather, the case of wildlife protection and conservation undertaken by an outside group that pays a community is simply a separate kind of transaction.

The four broad types of ecosystem service payments can be identified as:

(1) *public payment schemes* to private land and forest owners to maintain or enhance ecosystem services;
(2) open trading between buyers and sellers under a regulatory cap or floor on the level of ecosystem services to be provided;
(3) self-organized private deals in which individual beneficiaries of ecosystem services contract directly with providers of those services; and
(4) eco-labeling of products that assures buyers that production processes involved have a neutral or positive effect on ecosystem services.

The opportunity is for public payment schemes, open trading, and/or self-organized deals to offer a new set of incentives for Guyanese land owners and resource managers to conserve and maintain the flow of ecosystem services.

SECTION 2 MARKETS AND PAYMENTS FOR ECOSYSTEMS SERVICES: NUTS AND BOLTS FOR GUYANA

2.1 The Rationale for Market Development

Why create markets?

Ecosystem services affect the wellbeing of individuals and the performance of firms. Yet this is rarely reflected in the financial incentives that parties face. Generally, suppliers of ecosystem services are not rewarded for all the benefits they provide to others, and those who deplete ecosystem services do not bear all the costs they impose on others. This is because markets rarely exist for ecosystem services (in broad terms, a market is any context in which the sale and purchase of an item takes place). As a result, allowing parties to act in their own private interest can result in fewer ecosystem services than is optimal for society as a whole. In general, markets may not exist, or may function poorly because of one or more of the following reasons:

- large transaction costs;
- high uncertainty about the attributes of a good or service;
- asymmetric information (sellers are much better informed than buyers, or viceversa);
- few buyers and sellers; or
- Ownership cannot be defined and enforced, or it is very costly to do so.

Traditionally, the management and protection of the environment was effected through prescriptive methods - what is commonly referred to as “command and control” measures of the government. However, in the late 1980s, markets were added to the set of policy tools used in the management of. Although initially regarded with skepticism, the 3 decades since this start-up, have seen the concept of harnessing market forces to protect the environment evolve to the point of being almost politically correct not just among the free market supporters, but with supporters of the welfare state as well.

Market-based instruments are defined as aspects of laws or regulations that encourage behaviour through market signals, rather than through explicit directives regarding levels of extraction or pollution. If well designed and properly implemented, prescriptive methods encourage firms or individuals to undertake pollution control efforts that are in their own interests and that collectively meet policy goals. However, these approaches allow relatively little flexibility in the means of achieving goals. Such policy instruments, by holding all sources to the same target can be expensive to administer, and in some circumstances, are even counterproductive.

Arguably, market-based instruments provide a cost-effective allocation of benefits or costs (in the case of pollution control burden) among sources without requiring the government to have this information.

In addition, market-based instruments have the potential to reduce transaction costs over time by providing incentives for sellers and buyers.

In most parts of the world, forest ecosystem services such as watershed protection, carbon sequestration and biodiversity conservation cannot be bought and sold and markets fail to ensure adequate supply. There are several reasons markets fail to emerge. One of the most important is that many environmental services provided by forests fall into the category of *positive externalities*[15] or *public goods*[16] (Cornes and Sandler, 1996).

Where non-excludability and non-rivalry exist, the formation of markets becomes problematic, since beneficiaries of the good or service have no incentive to pay suppliers. As long as an individual cannot be excluded from using a good they have little reason to pay for access. Similarly, where goods are non-rival, consumers know that where someone else pays, they will benefit. In both cases beneficiaries plan to "free-ride" based on payments by others. However, where everyone adopts free-riding strategies, willingness to pay for public goods will be zero and the product will not be supplied.

The failure of markets to materialise due to externalities and public goods can have serious repercussions for welfare. In the case of forest environmental services, the lack of payment for these services results in under-investment in the protection, management and establishment of forests. Apart from the loss of the valuable environmental services, resulting forest degradation frequently translates into a loss of critical timber and non-timber forest products (NTFPs) that is critical to a wide range of stakeholders' livelihoods.

It should be stressed that goods and services cannot be neatly classified in all cases, as public, since varying degrees of non-rivalry and non-excludability can exist. The extent of non-rivalry and non-excludability determines the degree and type of market failure. For instance, if goods are non-excludable, but rival they are described as *common pool resources* since they tend to be most effectively supplied through cooperative action. Woodlands used by local communities without any formal mechanisms for restricting entry are an example of a common pool resource. Goods that are excludable and non-rival can be described as *toll goods* since markets can be set up in the form of tolls. An example of a toll good is that of roads in national parks where entry is controlled. Where goods are both

[15] A positive externality is any benefit enjoyed by beneficiaries at no cost to them. Positive externalities associated with forest protection include, for example, erosion control, reduced risk of flooding downstream and water quality maintenance. Markets typically fail to compensate those who produce positive externalities due to the absence of property rights or other legal means to require payment for services rendered.

[16] Forest environmental services can also be characterised as public goods. These are a special class of externalities distinguished by their *non-excludability* and *non-rivalry*. Non-excludability means that consumers cannot be prevented from enjoying the good or service in question, even if they do not pay for the privilege. For instance, it is difficult, if not impossible, to exclude downstream communities from benefiting from improved water quality associated with forest regeneration upstream. Where goods are non-rival the consumption of a good or service by one individual does not reduce the amount available to others. In this situation there is no competition in consumption since an infinite number of consumers can use the given quantity supplied. A good example of a non-rival forest service is carbon sequestration. Once carbon is sequestered the global community benefits from this in terms of a reduced threat of global warming.

excludable and rival they are described as private as they may be easily supplied by the private sector based on market transactions. Table 1 places public goods in this wider framework.

Table 1 Dimensions of excludability and rivalry in goods

	LOW RIVALRY	**HIGH RIVALRY**
LOW EXCLUDABILITY	Public goods, e.g. most forest environmental services	Common pool resources, e.g. community woodland
HIGH EXCLUDABILITY	Toll/club goods, e.g. forest park roads	Private goods, e.g. timber and NTFPs

Source: *Murtough, G et al. (2002) Creating Markets for Ecosystem Services. Productivity Commission Staff Research paper. Commonwealth of Australia.*

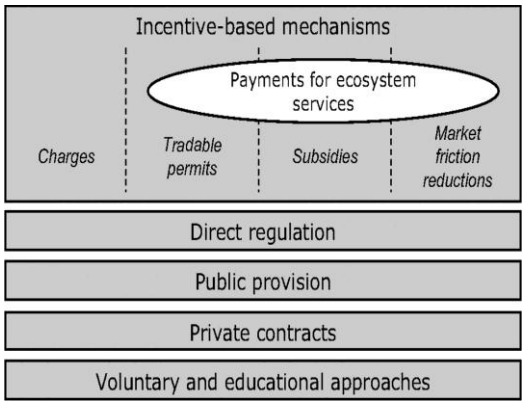
In addition to there being a range of degrees of rivalry and excludability, goods and services' non-excludability and non-rivalry is dynamic. In the case of the national park roads, for instance, usage may raise congestion and thus rivalry. A commodity's excludability may also rise as new techniques are developed to control access. In response to increasing congestion in parks, authorities may introduce park entrance fees to control access. The dynamic nature of rivalry and excludability underpins changes in the public or private status of goods and services.

Current attempts to promote SFM and conservation in tropical countries face a range of market, policy and governance failures that encourage alternative land uses and often result in high social and environmental externalities (CIFOR, 2007). Payments or compensation for environmental or ecosystem services mechanisms confront the 'market failure' problem of tropical forestry – weak or absent markets for the forest ecosystem services associated with carbon, water and biodiversity. The growing interest in PES is driven partly by the general failure of 'command and control' approaches (using fiscal and regulatory measures) and integrated conservation and development projects, and reduced flows of overseas development assistance for forestry.

Ecosystem services are the benefits that people derive from ecosystems, including commodities and regulating, supporting, and cultural services.[17] The type, quality, and quantity of services provided by an ecosystem are affected by the resource use decisions of individuals and communities. When the benefits of an ecosystem service accrue mainly to those who make management decisions, as in the production of crops or livestock, private markets are likely to work relatively well in inducing service provision. However, when the benefits of an ecosystem service flow primarily to others, such as with water purification or climate stabilization, public interests and the interests of the resource manager may not be coincide,. T resulting in a negative externality – specifically a situation where too little of the ecosystem service is provided. *Much of the decline of important ecosystem services as a result of human pressures* might be explained by the latter argument.

[17] Definitions of ecosystem services vary. Boyd and Banzhaf (cited in Jack (2008)) distinguish between ecosystem functions (the biological, chemical, and physical properties of ecosystems) and ecosystem services (the aspects of ecosystems that are valued by humans). Here the term ''ecosystem services'' is used broadly to refer to both intermediate and final services.

Policy solutions to externalities can include public provision of goods and services, private contracts between the provider and beneficiary, encouragement of voluntary efforts by firms and individuals, direct government regulation, and hybrid mechanisms such as government-supported trading markets (see Fig. 1). Many government interventions to control externalities are by way of command-and-control or prescriptive regulation, in which state actors undertake specific actions and apply sanctions if society members do not comply. On the other hand, incentive-based policies address externalities by altering the economic incentives private actors face, while allowing those actors to decide whether and how much to change their behavior.



Source: Jack (2008)

Fig 1: Locating PES as an incentive-based mechanism Within a broader suite of environmental policy instruments.

The PES or market approach is based on a theoretically straightforward logic: individuals or communities, who undertake actions that increase levels of desired ecosystem services, must be compensated. A formal definition has been given by Sven Wunder: ''A PES scheme, simply stated, is a voluntary, conditional agreement between at least one 'seller' and one 'buyer' over a well defined environmental service—or a land use presumed to produce that service.''[18]

In the last two decades, hundreds of new PES initiatives have emerged around the globe.[19] Costa Rica, Mexico, and China all have initiated large-scale programs that give direct payments to landowners for undertaking specific land use practices that could increase the provision of hydrological services, biodiversity conservation, erosion prevention, carbon sequestration, or scenic beauty. Some PES policies were initiated before the term ''payments for ecosystem services'' came into common usage and yet are based on the same theory. For example, the U.S. Conservation Reserve Program, run by the U.S. Department of Agriculture, has paid farmers to plant permanent vegetation on environmentally sensitive cropland since the mid-1980s. PES schemes are similar in structure to other incentive-based policies for achieving environmental goals, as highlighted in Fig. 1. Therefore, the accumulated experience with, and research on, incentive-based mechanisms provides relevant insights for both academics and practitioners interested in payment schemes for ecosystem services. In this report, the literature on incentive-based mechanisms for environmental policy was consulted for lessons on how

[18] Many projects that are called PES schemes fall short of this theoretical ideal definition in practice (Jack, 2008).
[19] A 2002 survey found examples of 287 ''markets for environmental services'' (Jack, 2008)

the socioeconomic, environmental, and political context, in which policies are implemented, together with policy design, influences the outcomes of PES schemes.

2.2 Situating Policy Design in Context

As illustrated in Fig. 2, the framework underlying the lessons is based on the assumption that context interacts with policy design and that together these determine policy outcomes. The report takes from Jack (2008) four aspects of context: the environmental context, the socioeconomic context, the political context, and context dynamics. The policy outcomes we emphasize are environmental effectiveness, cost-effectiveness, and equity. To be environmentally effective, a project must deliver a set level of environmental benefits, as defined by physical measurements.

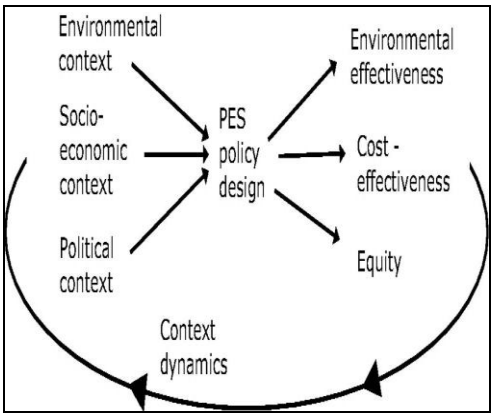


Fig 2. Context interacts with PES policy design to Determine outcomes

Source: Jack (2008)

To be cost-effective, a policy must achieve the same level of environmental benefits at a lower cost than other possible policies.[20] The costs of a PES scheme, from a social perspective, include not only direct implementation costs, but also the transaction costs of the program and the opportunity costs of foregone alternative productive uses of the resource. Transaction costs include the expense of negotiating contracts, performing scientific baseline studies, and monitoring and enforcement. Finally, although many possible aspects of equity are important, PES has the power to address poverty alleviation hence it is frequently discussed in the literature. Issues of equity can also be a consideration as a relevant policy outcome, even though there are many cases of PES policies, particularly in developed countries, where it is not an explicit goal of the program.

Given these potential goals for PES policies, the likelihood that all three are achieved will depend on the design characteristics of a PES scheme and the context in which it is implemented. Variations in the structure of PES schemes include: the form of the incentive or payment; which services are provided; who the providers are; who the implementers and intermediaries are; whether incentives are given to individuals or communities; the eligibility rules for participation; and how the payments are funded. For example, payments might be offered as a lump sum for actions such as planting a buffer strip; as a set

[20] The criterion of cost-effectiveness takes as given a particular environmental goal (e.g., a level of benefits) and judges policies only on their cost side—by how cheaply a policy reaches that goal. Economic efficiency, on the other hand, compares benefits with costs and judges a policy by the net benefits, or total benefits minus total costs.

rate for a scalable action, such as number of trees planted; through an allocation mechanism such as a reverse auction[21] or indirectly, through a system of differential use taxes such that tax rates are lower for landholders who engage in desired land uses. PES policies may be funded by taxes, by nongovernmental organization funding acquired from voluntary contributions, by direct fees on service consumers, or through other mechanisms. Some PES schemes take the form of tradable permit systems, such as wetland mitigation banking or tradable development rights; some are subsidies; and others, such as **ecolabeling**, work to reduce market friction by providing information about the origin of products. Despite this variation, PES policies share a common element: as with other incentive-based approaches, PES policies work by changing incentives rather than by making explicit rules or directives.

2.3 Exploring markets for ecosystem services

This Report on introducing Markets builds on the groundwork laid by the initial Ecosystem Services Report in defining the concept of ecosystem services and has to be supported by developing robust methods for their measurement. The Report will look at how markets for ecosystem services might work through:

- identifying and matching market mechanisms and production of ecosystem services;
- finding ways to link measures of ecosystem services to landholder actions;
- designing market mechanisms that encourage non-government investment in natural resource management; and,
- Analysing what governments should do and what they should avoid when creating markets.

The following table illustrates how a catchment might define targets for different ecosystem services.

	SALINITY	BIODIVERSITY	CARBON	WATER QUALITY
Catchment Target	In stream EC (electrical conductivity) at end of Catchment	X% of pre-European distribution of ecological communities	X tonnes of CO2	Nutrient and Turbidity levels at end of catchment

Source: http//www.ecosystemsservicesproject.org/html/markets/MBI_Symposium/

In order to help achieve these broader targets, mechanisms would have to be put in place that quantify the contribution of on ground actions at a property scale to the larger Catchment objectives. These on ground actions are how credits are created, and provide an opportunity for investors to invest in local scale projects. The following table is a hypothetical illustration of how the performance of on ground actions could be measured in achieving catchment targets.

[21] In a reverse auction, landholders submit bids indicating how much compensation they require to undertake particular actions.

ALTERNATIVE PROJECTS	SALINITY	BIODIVERSITY	CARBON	WATER QUALITY
Perennial Pasture Establishment	Medium	0	0	-3
Commercial Forestry	High	-3	10	4
Mixed Benefit Plantings	Medium	5	6	10
Biodiversity Plantings	Low	10	3	7

Source: http//www.ecosystemsservicesproject.org/html/markets/MBI_Symposium/

It may not be possible to precisely quantify the level of all projects to all environmental targets. However, some relative ranking should be possible, for example in the case of salinity credits the table reflects that it may only be possible to rank projects on a high/medium/low basis.

Trading in environmental outcomes is another possibility under this framework. For example, a farmer seeking to clear native vegetation may be required to invest in projects with carbon, biodiversity, salinity and water quality benefits that offset the impacts of the development on their property. These works could either be undertaken on the property or bought from another property.

2.4 Why do we need markets for ecosystem services in Guyana?

There are many important natural resource management issues facing Guyana including the loss of biodiversity, declining river health, salinity and soil acidification. The social and economic pressures facing rural communities due to the decline of traditional agricultural enterprises parallel these challenges.

In the past, Government has responded to environmental challenges by encouraging local scale community based responses, most notably in the mining sector in Regions 7 and 8. However, increasingly it is being recognised that, to be effective, larger scale changes will be required. Governments in other countries, such as Australia are moving to establish community-based boards at a regional/catchment scale. These Boards are being tasked with developing environmental targets and seeking to put in place effective investment pathways through which governments can invest scarce public funds.

An emerging challenge is the capacity to link catchment based targets to community based programs for on-ground works. This project will directly address this challenge by developing techniques for evaluating the relative contribution of different on-ground works to meeting catchment targets. An example would be the development of criteria with the capacity to quantify the contribution of an agroforestry investment to meeting the end of valley salinity targets set by the Murray Darling Basin Commission. The step of quantifying environmental benefits is necessary in order to be able to create a currency for ecosystem service markets.

In addition to improving the capacity of government to target environmental programs the introduction of markets can test the potential to secure private investment in the ecosystem services provided by different land-uses. Traditionally there has been an expectation that governments are solely responsible for regulating land-use and putting in place cost sharing arrangements for the provision of "public good"

ecosystem services. The PES project will challenge and test this expectation if it will foster the emerging role of non-government sector in funding and delivering the land-use and management changes. The work of the international NGO – Conservation International - provides a useful exemplar.

Engaging non-government investors will require that effective investment pathways between regions, governments and non-government investors be established. The role of markets for private conservation, philanthropic donation, corporate sponsorship and environmental technologies should be investigated. The role of government in regulating resource use (forests, biodiversity, landscape beauty, soils etc) and thereby creating markets for ecosystem services, as in the case of water markets, is also worth investigating. In addition, opportunistic and entrepreneurial strategies should be identified and pursued. These options relate to the potential to harness existing market forces to redesign Guyana's landscapes.

2.5 Types of Markets and Payment Mechanisms[22]

a) Self-organised private deals

This approach includes direct, usually closed, transactions between those who benefit from forest services and those who provide them. This includes deals such as voluntary certification and eco-labeling schemes, direct purchases of land and purchases of development rights to land, as well as direct payment schemes between offsite beneficiaries of forest services and landholders responsible for the services. In France, Perrier-Vittel, a company that sells bottled water, pays upstream landowners to use best management practices on their land to ensure that the company has a supply of quality water. Other examples include conservation groups or businesses motivated by corporate conscience or marketing considerations to pay forest holders for conserving biodiversity. Private deals, typically limited in scope and transparency, benefit from clear property rights and enforceable contracts, although clear rights and enforcement mechanisms are not always necessary. In most cases, little additional public involvement is warranted.

b) Open trading schemes

This approach is used when a government defines an environmental service commodity to be traded and devises regulations to create demand. In New South Wales, Australia, for instance, the government is piloting proposals for salinity credit trading rooted in broader basin-wide salinity targets. Based on these targets, the government has allocated licenses to dischargers of salinity. The idea is that those wishing to exceed their salinity quota can do so if they purchase salinity credits from those who have taken action to reduce salinity, e.g. by protecting and managing native vegetation. Other examples

[22] Taken from Powell et al , 2002.

include tradable development rights pioneered in urban areas of the U.S., the trading of wetland mitigation credits and emerging nutrient trading schemes in some U.S. states.

The most prominent example of open trading is the emerging national and international carbon trading market. Growing out of the Kyoto Protocol signed in 1997, carbon trading has evolved from a marginal and largely voluntary exercise to a mainstream mechanism for reaching local and international emission reduction targets. Despite the decision by the U.S.A. to renounce its commitment to Kyoto, the treaty has stimulated a number of national and regional trading initiatives. In the August 3, 2001, edition of the Washington Post, a CO_2 trader was quoted as saying that he believes the CO_2 market could be worth tens of billions of dollars by the end of the decade. Forests are a key tool for reducing and storing carbon and trading in forest-based carbon offsets is likely to grow. Any market-based system of trading credits requires a transparent framework, accurate accounting and verification systems.

c) Public payment schemes

This approach is used when a government provides the institutional foundation for a program and directly invests in it as well. Examples include the U.S. Conservation and Wetland Reserve Programs, in which the government pays farmers for managing lands in ways that reduce soil erosion and runoff. In 1998, in response to the Yangtze River floods as well as concern over soil erosion and deforestation, the Chinese government began to plan a Forest Benefit Compensation Fund to be financed by the government and private sector beneficiaries in upper basin areas. Public payment schemes can be administered by purely public agencies or hybrid partnerships with the civil and private sectors. This approach involves both indirect subsidies and direct payments to forest landowners. Prices paid by governments are often determined by political or budgetary considerations, rather than strict economic evaluation of the environmental benefits involved.

2.6 The Process of Developing Markets and Instruments for Ecosystem Services

A simple definition of a market is the bringing together of a buyer and a seller so that they can trade commodities. The simplest of markets involves a bartering system, while more sophisticated markets have prices and money exchanges. It bears repeating, that to create a market, there has to be a definition of what is to be sold, and there has to be someone willing to buy the particular commodity. Through the exchange of the buyer and seller, a price or value will emerge. This simple definition of a market can be applied to a market for ecosystem services.

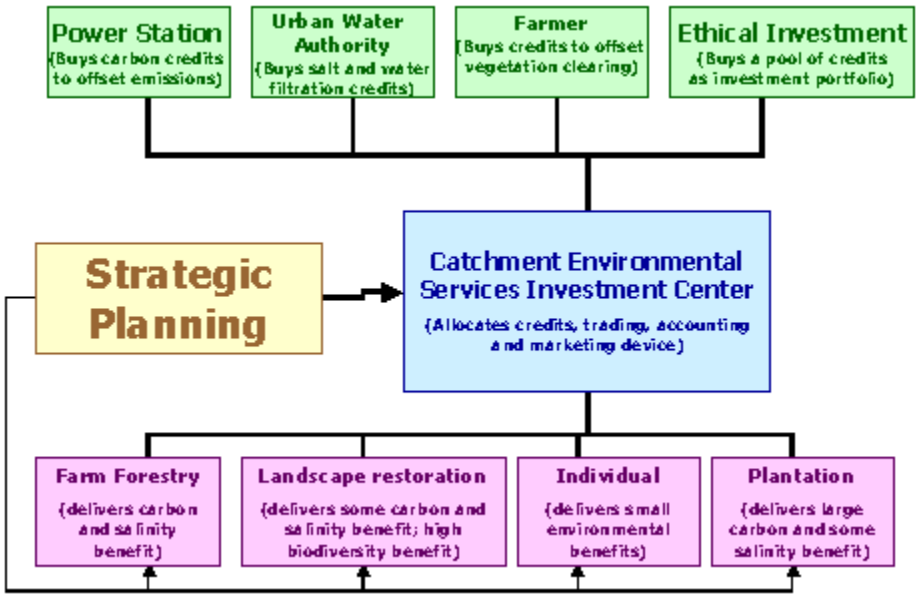
Buyers are required to create a demand for ecosystem services or commodities through the provision of financial capital. Buyers may represent a company interested in purchasing carbon credits; or perhaps an organisation supplying funding for the protection of biodiversity values. Buyers will have different motivations for providing funding, such as philanthropy, "right to pollute", or corporate image. Governments are, of course, the most significant existing buyers of environmental programs such as the Natural Heritage Trust of Australia.

Packaging the transactions into projects is very convenient to deliver ecosystem services and commodities to buyers. The projects are the sellers of ecosystem services and commodities. For example, a landholder may sell carbon credits to a company, salt credits to a landholder upstream, or biodiversity credits to a philanthropic investor.

Finally, a link between buyers and sellers is required. This is the investment vehicle, which is able to draw on many funding sources (buyers) and distribute financial capital to projects. In return for funding, projects provide one or more ecosystem services. A company interested in acting as a dealer or a broker within the investment vehicle component would enter into contract with many landholders and, having acquired rights to ecosystem services on various parcels of land, would then on-sell that pool of credits to larger firms. This allows dealers or brokers to pool small amounts of an ecosystem service associated with each project into volumes of interest to buyers.

A framework for markets for ecosystem services is described in the figure below. In this instance, buyers of environmental outcomes provide capital to a pool of funds that are available to finance on-ground works. Landholders undertaking projects with environmental benefits may then access these funds. As indicated in the figure, funding need not be limited to trades between landholders. Other potential investors could include biodiversity funds, corporations offsetting carbon emissions or impacts on water quality, or ethical investment funds.

Fig 3. A Framework for Markets for Ecosystem Services



Source: http//www.ecosystemsservicesproject.org/html/markets/MBI_Symposium/

A fully mature market for sustainable agriculture of the kind outlined here may seem distant. However, as knowledge of links between land management practices and environmental outcomes improves it will be necessary to reward good land management practices and penalise those that have adverse

impacts. High impacting land practices will be permitted as long as they are offset by other activities that ensure environmental thresholds are not crossed and that overall catchment targets can be achieved.

Markets for ecosystem services can be created in many different ways. In some cases, a market for an ecosystem service would form of its own accord if regulatory impediments were removed. For example, the supply of certain aspects of biodiversity conservation appears to be hindered by rules for land tenure, competitive neutrality, and taxation. This paper does not examine such cases. Rather, the focus is on ecosystem services that, regardless of regulatory barriers, would not be traded in a market because their ownership cannot be defined and enforced.

The term *market creation* is used in this Report to refer to government intervention to form markets for ecosystem services that are nonexcludable in consumption. Such intervention involves the definition of a new *property right* that is both linked to an ecosystem service and can be exchanged for reward. A property right is an entitlement to use a particular good or service in a certain way. For example, a property right could be established over the carbon sequestered in forest plantations. Use of this right is not an ecosystem service per se. However, it could be a proxy for climate stabilisation services, since the process of sequestering carbon may mitigate the greenhouse effect.

Market creation schemes can be divided into four categories, based on whether the relevant property right is tradeable and if it involves an offset arrangement. These categories are detailed in table 2.

Government has to play an important role in market creation by specifying the property right associated with an ecosystem service, the process for registering its exchange, and the procedures used to enforce it. Where a cap or limit is set on a certain activity (as in a market for tradeable emission permits), this is established by regulation rather than being determined in a market. Additionally, the Government may set standards of management for which communities (defined geographically e.g. a village or defined as a practice community e.g. gold miners) can be compensated for the opportunity cost of foregone activities. In some cases, governments may also participate in the market by buying or selling the property right.

Table 2 Categories of Market Creation Schemes

	NO Off Sets[23]	**Off Sets**
Non Tradable[24].	Parties sell their property right to undertake a certain activity, such as emitting pollutants. The relevant property right is transferred between parties only once. Example: Farmers compete in an auction to receive biodiversity conservation grants for maintaining native vegetation on their land. Grants are awarded to those offering the most ecosystem services per dollar granted	Party can undertake an activity that reduces an ecosystem service if it also undertakes (or purchases from another) a separate activity which increases the ecosystem service by at least the same amount. Where the offsetting activity is purchased, the .property right for that activity can only be exchanged once. Example: A firm can increase emissions from one factory if it reduces them by at least the same amount at another factory.

[23] Under an offset arrangement, a party can undertake an action that reduces ecosystem services if they also undertake (or purchase from another) a separate action that increases ecosystem services by at least the same amount

[24] A tradeable market creation scheme involves a property right that can be transferred between parties more than once prior to being used. In other words, there is a secondary market for the property right.

Tradable	An upper limit is set on a certain activity, such as emitting pollutants. Parties who hold the (limited) right to undertake the activity may sell that right to another party. Example: Tradeable permits to emit carbon dioxide.	A party can undertake an activity that reduces an ecosystem service if it also pays another party for a separate activity that increases the ecosystem service by at least the same amount. The property right for the offsetting activity may be exchanged via an intermediary before being used as an offset. **Example**: A firm can increase its carbon emissions if it pays another party (via a broker) to sequester at least as much carbon in a forest plantation.

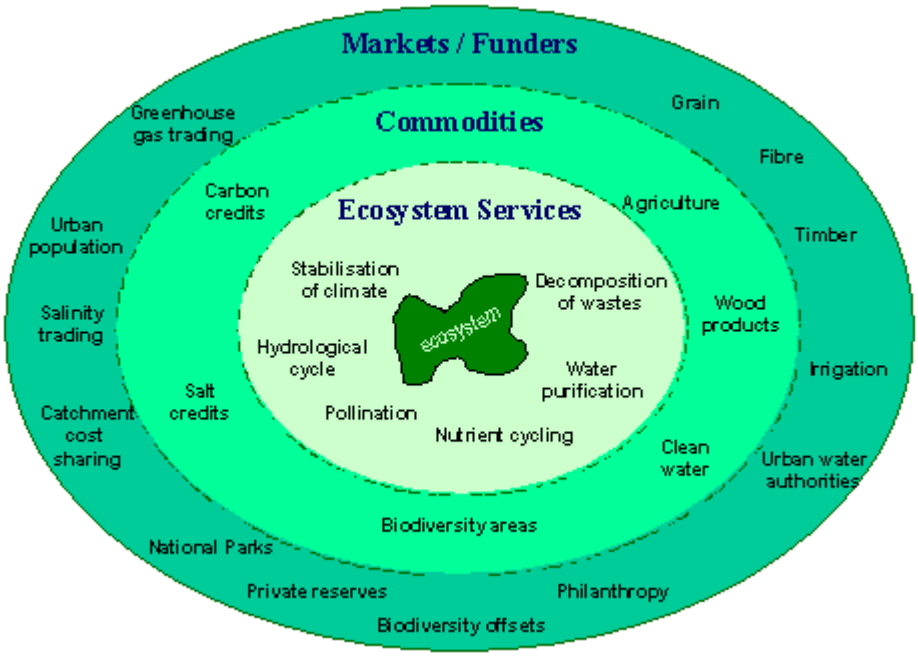
Source: *Murtough, G et al. (2002) Creating Markets for Ecosystem Services. Productivity Commission Staff Research paper. Commonwealth of Australia.*

2.7 What are we seeking to achieve?

The markets component of this research on PES defines a range of ecosystem services that can be bought and sold through a new currency/commodity such as a carbon, water quality, salinity or biodiversity credit.

Once commodities for ecosystem services are defined we will actively work with catchment communities to find buyers who are willing to invest in environmental services. The relationship between ecosystem services, environmental commodities and funding mechanisms is depicted in the diagram below.

Fig. 4 Relationship Between Ecosystem Services, Environmental Commodities And Funding Mechanisms.



Source: http//www.ecosystemsservicesproject.org/html/markets/MBI_Symposium/

Finding the links between ecosystem services and those willing to invest is the major challenge for the initiative. In partnership with each of the pilot communities/regions the initiative will identify improved efficiencies in the delivery of existing natural resource management programs by administrations/communities and most importantly test the potential to raise non-government sector investment.

Experience shows that developing new markets and market-based instruments that add financial value to forests is complex. Interested parties must be identified and they must adopt precise roles in transactions. These transactions must be developed by negotiation and supported by rules

In theory, the process of developing markets for forest services is no different to developing a new market for a commodity. In practice however, there are key differences which determine the speed and extent to which the market can be developed such as the existing entrepreneurial abilities, local constraints and opportunities. Additionally, because most forest services are currently treated as free goods, the biggest hurdle to market development is to convert these freely-accessed goods and services into commodities and property. This is of course a political process, in which the rights and responsibilities of different stakeholders are defined, rules and entitlements are established by a series of legal reforms. The process has been simplified into 3 broad phases: -Emerging; Defining and Live - by Powell et al (2002), described as follows:

Phase 1

The linkages between forest actions and their consequences have to engage national attention, particularly that of decision makers. In all cases, the entrepreneurial function has to be performed either in the public or private sector, and can be by an individual or an entity such as the GFC that provides leadership, and drives actions by sharing information on problems and opportunities with stakeholders.

Phase 2

In this phase, the structure of the market is mostly defined along with the supporting rules and processes. For public sector operations, the regulations are driven by political will and these regulations define the service sold and purchased, settle the rights and duties of the stakeholders and provide a platform for negotiating payments.

Phase 3

This final phase is when the market is operational. Transactions are undertaken for financial reward. Service contracts and agreements with the supporting institutions are established. Accounting standards, monitoring and certification mechanisms are all in place.

The clean cut phases above do not exist in reality, and are just for illustration. The reality is much messier, with interventions by multiple stakeholders who interact on multiple activities within each

phase in a highly iterative process. Progress is very variable and unique to each context and often encounters setbacks. A more detailed exposition of the issues involved is as follows:

2.8 Critical Considerations

What environmental services are provided?

A key step in market development involves identifying the ecological conditions that provide direct and demonstrable benefits to people. Better management of the forests may improve the quantity, quality or integrity of the existing services already provided – or it may provide new services altogether. Market development can be accelerated if there is a perception that a service is becoming scarce and thus more valuable. This could apply to habitat loss or declining water quality. Action can be driven by the costs of alternatives or the consequences of service failure. Ultimately, the specific service that is marketed will depend on the particular needs of the buyer. For example, an Australian airline might feel that its public image is served best by funding protection of kangaroo habitat. With respect to watershed protection services, hydropower companies may be interested in controlling sedimentation, while water supply companies may be more interested in reducing nitrogen and phosphorus pollution.

What is the economic value of the environmental service?

To generate willingness to pay for specific environmental services, it is critical that beneficiaries recognise the value of environmental services for their welfare. Impacts may be direct, e.g. the provision of clean drinking water, or they may be indirect, e.g. the reduction of sedimentation and improved hydropower efficiency leading to cheaper and more regular electricity supplies. A number of methods exist for estimating the economic value of environmental services. Contingent valuation surveys are an increasingly common method involving questionnaires asking beneficiaries their willingness to pay for the continued delivery of a specific service or their willingness to accept compensation for their loss of the service. Another method involves estimating the cost of replacing the particular service, assuming this is possible.

What is the cultural, legal and regulatory context?

Developing a new market instrument for a particular service involves a unique set of stakeholders and governance structures. It also must correspond to that local ecosystem. Most markets, with a unique regulatory, fiscal, and legal context, will require substantial creativity, political leadership and willingness by stakeholders to consider new approaches. As knowledge develops in many cases, continued adaptation will also be needed.

What are the rights and responsibilities of stakeholders?

Property rights are particularly important. Societies differ in how they handle the legal and customary rights of stakeholders in forests. These property rights are often insecure, overlapping and contested, and they rarely explicitly address forest services. If rights over services are not previously decided, developing a market will entail assigning or clarifying them. For example, do landowners have a responsibility to protect forest services or a right to be compensated for providing them? Special

attention is required to ensure that the less powerful sectors of society do not lose opportunities and access to resources. Market developers must be fully cognizant of existing power relations, vested interests and the implications of their proposals.

Who are the potential buyers and sellers?

The use of market tools to restore, protect or enhance an environmental service would be impossible without sellers able to deliver the service and buyers financially able to pay. After determining ownership or property rights, the next question must be whether that person is willing to sell. Equally important is the existence of funds sufficient to finance regular delivery of the service. In addition, beneficiaries may be unwilling to pay for a service, such as clean water, which they may consider a right and to which they have always had access.

Can the service be measured and monitored?

Services must be defined in order to enable transactions. A service can be defined in terms of a particular commodity, or simply on the basis of assumed land value. For example, carbon credits can be used to offset emissions or biodiversity credits can be used to offset development. Hydrological services can be defined in terms of water quality indicators or stream flow reliability. Depending on the quantity, quality or uniqueness of a forest service, it may be difficult to adequately define a commodity or determine a payment level.

What support services are required to enable the market?

In many cases, there is a need for new institutions, ranging from private sector contracts to public entities, to facilitate payment for services. Also, markets require structures for financing, verification, monitoring, accounting and certification. Other necessary structures include business advisory services, planning devices and consultants, independent environmental advisory groups and capacity building. Due to the risks involved in any emerging market, insurance companies and banks can play a critical role by bolstering the security of transactions.

Who are the beneficiaries?

Sharing the benefits of market creation is important for equity reasons, but it is also critical to the success or failure of payment systems. Where new markets negatively impact particular stakeholder groups, the stakeholders in question will have an interest in undermining its viability. Depending on who these groups are, and how much power they have, the additional risks introduced by inequitable benefit-sharing are potentially significant and may lead to market failure.

Conditions under which market creation is more likely to be effective

In essence, market creation addresses one of the potential reasons why a market may not exist — an inability to define and enforce ownership — by constructing a new property right. However, clarifying property rights will not necessarily create a market if one of the other potential barriers to market formation also exists. Therefore, market creation is best suited to situations where a number of criteria are met. Most of these criteria can be specified in relation to the newly defined property right (table 3).

Table 3 **Desirable property right characteristics for creating markets**

Property right characteristic	**Description**
1. Clearly defined	1. Nature and extent of the property right is unambiguous.
2. Verifiable	2. Use of the property right can be measured at reasonable cost.
3. Enforceable	3. Ownership of the property right can be enforced at reasonable cost.
4. Valuable	4. There are parties who are willing to purchase the property right.
5. Transferable	5. Ownership of the property right can be transferred to another party at reasonable cost.
6. Low scientific uncertainty	6. Use of the property right has a clear relationship with ecosystem Services.
7. Low sovereign risk	7. Future government decisions are unlikely to significantly reduce the Property right's value.
[a] *Low in the sense that it does not prevent a market from forming. Moderate levels of risk and uncertainty are not necessarily insurmountable barriers to the operation of a market.*	

Source: Murtough, G et al. (2002) Creating Markets for Ecosystem Services. Productivity Commission Staff Research paper. Commonwealth of Australia.

In creating a market, consideration also needs to be given to whether asymmetric information and/or a lack of buyers and sellers are problems. Where information asymmetry leads to the absence of a market, it may be possible to address this through creative market design. For example, the Victorian Government in Australia is trialing an auction process that encourages landholders to reveal what financial reward they are willing to accept in return for undertaking conservation activities. In the Guyana context, the national authority could define the menu of sustainable forestry management practices that it is willing to purchase from communities.

A lack of buyers or sellers is a concern for tradable schemes because one party (or group acting in collusion) may be able to manipulate the price of the new property right. Competition for the new property right could then lead to a suboptimal outcome in the sense that there is an alternative outcome that makes one party better off without making others worse off.

SECTION 3 KEY REQUIREMENTS TO ACCESS IDENTIFIED MARKETS FOR GUYANA

3.1 PES and International Conventions

This Report has already established that the conservation of forest biodiversity is a prerequisite for the long-term and broad flow of forest ecosystem services, and that market-based responses are crucial for the redistributing of rights to stakeholders, making them more effective in securing ecosystem services.

The widespread interest in PES is supported by a number of International Conventions which provide several entry points for bringing new and innovative thinking on biodiversity financing. Chief among these are (i) the United Nations framework Convention which came into force in 1994 and was ratified by Guyana on August 29, 1994; and (ii) the United Nations Convention on Biological Diversity (UNCBD) which came into force on December 29, 1993 and was ratified by Guyana the same day as the UNFCCC. The proceeding paragraphs highlight specific Articles of the Convention and the implications for the development of PES.

United Nations Framework Convention on Climate Change (UNFCCC)

UNFCCC and its related legal instruments seek in the long term *"to achieve […] the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" (Article 2).* Governments are there committed, under the Convention, long-term national planning, the diffusion of technologies and processes to control emissions, the conservation of sinks, cooperative adaptation planning, and adjustment of environmental policies, systematic observation and development of data archives, exchange of information, as well as promotion of education, training and public awareness.

Importantly, the UNFCCC provides a mechanism for what could be best described as an International PES (IPES): the Clean Development Mechanism (CDM) allows for projects that deliver carbon offsets in developing countries to receive payments from carbon emitters in developed countries. A similar approach has already been adopted for a range of ecosystem services provided by biodiversity.

The key principles[25] which guide the IPES are:

- It should promote biodiversity conservation, sustainable use, equitable access and benefit sharing of genetic resources across the world;

[25] Chichilnisky and Proctor, (n.d.) International Payment for Ecosystem Services (IPES). UNEP, IUCN and CBD, Nairobi. http://www.unep.ch/etb/events/IPES%20Side%20Event%20Bonn/IPES%20SUM%20FINAL.pdf

- It should be economically self-sustaining, and incorporate local communities, governments, and the private sector; and

- It should address the needs of developing countries and, more generally, those of the poor, women, as well as indigenous and local communities.

Moreover, the "Bali Action Plan" (as a result of decisions taken at the 2007 Conference of the Parties (COP)[26] to the UNFCCC in Bali) unequivocally supports policy approaches and positive incentives relating to reduced carbon emissions from deforestation and forest degradation (REDD) in developing countries, and the conservation and sustainable management and enhancement of forest carbon stocks (REDD-Plus).

The United National Framework Convention on Biological Diversity[27] (UNCBD)

The UNCBD has three primary objectives: (i) the conservation of biological diversity; (ii) the sustainable use of its components and (iii) the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. The Articles below highlight Guyana's obligations as regards to PES.

Article 8 *In-Situ* Conservation

Article 8 of the UNCBD declares that among other things, governments shall *establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity*. Forested protected areas can help safeguard a range of ecosystem goods and services, and are therefore a vital tool in managing for resilient forest ecosystems, and forest-dependent communities.

Guyana has already drafted protected areas legislation. To date; there are there legally established protected areas: Kaieteur National Park; Iwokrama Rainforest Reserve; and Community Owned Conservation Area at Konashen. Additionally, there are areas which are subject to some form of management, these are: the Moraballi Forest Reserve, the Mabura Hill Reserve, and the Upper Essequibo Conservation Concession. Guyana has plans to establish other protected areas inclusive of Shell Beach, the Kanuku Mountains, Orinduik Falls and Mount Roraima[28].

[26] The Conference of Parties (COP), as the supreme body of the Convention, takes decisions to promote the implementation and reviews the effectiveness of the Convention regularly.

[27] For more details kindly visit Source: http://www.cbd.int/

[28] For more details kindly visit http://gy.chm-cbd.net/convention/protected-areas.

This policy decision is critical as protected areas provide valuable and numerous benefits to: (i) protect biological diversity and evolutionary processes; (ii) prevent and reduce poverty by supporting livelihoods, providing social and cultural governance and subsistence values; (iii) ensuring breeding grounds for wildlife and fish, critical to food security; and (iv) generate tremendous direct economic benefits, and serve as a key asset for the tourism industry—critical to Guyana economic growth and human development.

Article 11 Incentive Measures

Article 11 of the UNCBD obliges governments (Contracting Parties) to adopt economically and socially sound measures (as far as possible and as appropriate) that act as incentives for the conservation and sustainable use of components of biological diversity.

The Conference of Parties has since taken several actions including:

- COP-6 (2002) endorsed guidelines for selecting appropriate and complementary incentive measures, which included an illustrative list of instruments. The guidelines note that this list is not comprehensive because 'international incentives should be considered in a similar fashion' (decision VI/15, Annex I, section E); and

- COP-9 (2008) invited national, regional, and international organizations and initiatives, including OECD, and requested the Executive Secretary to encourage, further studies on payments for ecosystem services and other positive incentive measures including at international level (decision IX/6, paragraph 15).

Articles 20 and 21 Financial Resources and Financial Mechanism

Within the framework of Articles 20 and 21 of the Convention which speak to the issues of financial resources and financial mechanism, respectively:

- COP-8 (2006) decided to conduct an in-depth review of the availability of financial resources at COP-9 and requested the Executive Secretary to explore all options for resource mobilization including innovative financial mechanisms and to develop a draft strategy for resource mobilization (decision VIII/13 paragraph 4).

- COP-8 also invited Parties to explore options for innovative international finance mechanisms to support the programme of work on protected areas (decision VIII/24, paragraph 18 f)Life Web Initiative.

- COP-9 (2008) adopted the strategy for resource mobilization (decision IX/11 B). Importantly, Goal 3 of the strategy includes mobilizing private sector investments in biological diversity and

its associated ecosystem services (target 3.4) , while Goal 4 foresees the exploration of new and innovative financial mechanisms at all levels with a view to increased funding to support of the Convention, some of which are relevant to private sector finance, such as:

- *To promote, where applicable, schemes for payment for ecosystem services, consistent and in harmony with the Convention and other relevant international obligations.*

- *To consider biodiversity offset mechanisms where relevant and appropriate while ensuring that they are not used to undermine unique components of biodiversity.*

- *To explore opportunities presented by environmental fiscal reforms including innovative taxation models and fiscal incentives.*

- *To explore opportunities presented by promising innovative financial mechanisms such as markets for green products, business-biodiversity partnerships and new forms of charity.*

- *To integrate biological diversity and its associated ecosystem services in the development of new and innovative sources of international development finance, taking into account conservation costs.*

- *To encourage the Parties to United Nations Framework Convention on Climate Change and its Kyoto Protocol to take into account biodiversity when developing any funding mechanisms for climate change*

Additionally, COP-10 invited Parties to: (i) to develop, and report on, national activities that promote and facilitate the mainstreaming of biodiversity by business, such as through regulations and, as appropriate, economically and socially sound incentive measures, national biodiversity strategies and action plans as well as national reports; and (ii) adopt, as appropriate, sustainability criteria for government purchases of products of biological resources. In particular, businesses and the private sector were encouraged by COP-10 to: (i) monitor and assess impacts on biodiversity and ecosystem services, including the consideration of related risks and opportunities, and of how this may affect their activities, and to develop and apply processes and production methods that minimize or avoid negative impacts on biodiversity; and (ii) participate in voluntary certification schemes that promote the three objectives of the Convention.

It should be noted that the study on the Economics of Ecosystems and Biodiversity (TEEB) that was launched at the 10th Conference of the Parties to the Convention on Biological Diversity (October 2010) recommends to policy makers at various levels to make more use of PES, where appropriate.

Article 15 Access to Genetic Resources

The third objective of the Convention on Biological Diversity provides for "the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources…" Moreover, Article 15 clearly states that "*Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, and in accordance with Articles 16 and 19 and, where necessary, through the financial mechanism established by Articles 20 and 21 with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources. Such sharing shall be upon mutually agreed terms."* It is noteworthy that Guyana has already established guidelines for biodiversity research[29] as well as a National Biosafety Framework (2006).

3.2 Key Requirements for Guyana to access PES markets

Preamble

This sub-Section of the Report is based on the perceptions and views of key stakeholders[30] including:

- Office of Climate Change;
- Guyana Forestry Commission;
- Environmental Protection Agency;
- Guyana Lands and Surveys Commission;
- World Wildlife Fund-the Guianas;
- Conservation International-Guyana;
- University of Guyana; and
- Guyana Tourism Authority.

[29] Visit http//:*www.epa**guyana**.org*

[30] A number of key stakeholders chose not to respond to the interview schedule.

General Views on PES

Overwhelmingly, stakeholders held the view that PES is a mechanism for halting the loss of forest by providing incentives for conservation and sustainable utilisation. Specific statements to this effect are: that:

- PES has an important role in addressing deforestation and forest degradation.
- PES is a tool that can be used to implement REDD+ and provide incentives for other conservation and sustainable development initiatives.
- PES serves to underscore the value of nature, thereby bringing to light the contribution of nature's services to humanity. By paying for these services, businesses, governments, etc are demonstrating their concern for the environment and the need to preserve and protect it.
- PES is great future market opportunity and that carbon serves the role of pathfinder
- PES is an innovative mechanism that has great potential to aid in the protection of ecosystem services.
- PES can be viewed as an effective tool for utilizing and benefiting from our forest resources while still maintain and protecting this resource.
- PES is an excellent initiative and idea and a tool for reducing poverty and fosters new priorities and incentives for our conservation and sustainable development efforts. It is good for Guyana's economic development.

It was noted however that PES is a relatively new concept and as such will require considerable resources and commitment to reach an operational/implementation level.

Is PES beneficial to Guyana?

Stakeholders expressed the common view that PES is beneficial to Guyana for the following reasons:

- PES can help Guyana achieve its policy objectives of low carbon development as well as its obligations to the International Conventions.

- Benefits from PES schemes such as REDD+ can used to develop low emission economic activities, thus reducing poverty, improving social services (health, education) deliveries, promoting sustainable development and achieving the Millennium Development Goals (MDG).

- PES can be beneficial to Guyana by providing a mechanism for obtaining compensation for these various services.

- PES will serve as either a disincentive to short term development, or as a means to secure natural capital for future benefits.

- Guyana with its large array of mostly untouched forests can use PES as a means of bridging the gap of uneven development between rural and urban areas, since it is forest dwelling communities/rural poor who would and should be the primary beneficiaries.

What environmental services are provided?

Guyana's natural capital provides a range of ecosystem services that are not only beneficial to the world given the critical role of forests in the fight against climate change, but also in terms of national development- a spin off of the compensations received at both the national and local levels.

The main ecosystem services provided by Guyana (as identified by stakeholders) are listed with comments in the table 3 below.

Why PES is good for Guyana

PES:

- adds more value to the environment by attaching a cost to externalities.
- helps to preserve the environment and improve resource management.
- can attract funding from donor agencies to help protect the environment.
- can result in additional financing for the country and lead to improved social benefits in areas such as education, health and infrastructure.
- can result in enhanced environmental protection and conservation. This will improve Guyana's image as a 'Green' country and promote export of its produce.
- may result in a greater appreciation of ecosystems.
- may result in the development of alternative economic opportunities and thus reduce the exploitation of forest and other natural resources.
- can provide alternative sources of income for communities that depend on forest resources. Communities can then manage and regulate the use of the forest resources and reduce environmental degradation.

Source: PES Training Workshop facilitated (May 12-13, 2011) by the Consultants and authors of this Report.

Ecosystem Service	Comments
Landscape Beauty (ecotourism)	Guyana has the capacity to tap into ecotourism in big way. The bounty and beauty of our forest resources would make a good sell if properly marketed. Natural areas are the base of the tourism product which is income and revenue generating. Hence users should pay for the use of the resource and service. **Guyana has made some inroads in this area. Nature tourism is now a budding economic activity in Guyana.** A national system of parks and protected area system will help to enhance this. It should be offered at the community (local, resource owner) level.
Carbon Storage and Sequestration	Given the degree of effort being put in by government to preserve our forests for this purpose and also the level of interest being shown by the international community, carbon storage and sequestration should be one of the main focuses as well. As of 2008, Guyana's primary focus has been on that of receiving payments from the carbon storage and sequestration potential of Guyana's forests through REDD+. The institutional framework is currently being developed to engage in such as scheme including the incorporation of REDD+ into a national development strategy- the Low Carbon Development Strategy. In the way forward with the implementation of REDD+, it has been outlined that Guyana should explore the options of entering into other such PES schemes. Local carbon stock owners should be part of the national process, in which they receive payments from the national system. In return the national system will perform MRV and support capacity for management Guyana should continue with its Carbon Storage and Sequestration programme and continue to maximise its potential.
Biodiversity Conservation	Guyana is home to a number of species not found anywhere else in the world. The conservation of these and other endangered and some undiscovered species should be focused upon. Guyana has an outstanding commitment to the CBD. Biodiversity Conservation is critical for tourism development and expansion also. Given the fragility of ecosystems it deserves priority attention
Watershed Protection	Water is an extremely valuable and scarce natural resource whose value is being more recognised with the demands an increasing world population is placing on it. Guyana, the Land of Many Waters, possess a myriad of waterways, which can

	provide a valuable source of income from PES schemes. Water, especially fresh water is vital for human life. Placing a value on should increase its value and cause people to engage in practices that will serve to respect and protect the resource. The potential for hydro power is being harnessed; has tremendous impact for fisheries, marine ecosystems, fresh water resource and irrigation and can become a major threat if not managed well. Priority must be given to this service. Wetlands protection is needed.
Non-timber forest products	This is an important aspect of forestry management and conservation that has not been receiving full attention. This is key especially when one considers that NTFP are key in many alternative livelihoods aspects of many different communities. The economic benefits to be derived from these NTFPs are still untapped. At the level of sustainable utilisation, Guyana has been utilising a number of NTFP for commercial value, specifically Kufa, Nibbi, and Manicole Palm. This area also offers significant potential for expanded sustainable utilisation and would need to be accompanied by key assessments including forest inventory and Codes of Practice. The GFC is currently developing Codes of Practice for these.
Scientific discovery (e.g.,natural medicines, pharmaceutical products)	Guyana's as yet unexplored forested areas provides a large natural laboratory which can be used for extensive research purposes. The discovery of basic nature based products should be encouraged so that premium value is placed on ecosystems, which will be protected to ensure that the 'natural laboratory capital' remains fully functional and is not simply 'over-exploited ' for economic gain. There is not a great market for this, although scientific research is important to understand our ecosystems; therefore scientific research should be the means to increase value in the other ESS and should not be seen as a discrete service.

Source: Stakeholders' Responses

Table 4 presents an analysis conducted by participants of the PES training workshop held May 12-13, 2011 at the GFC Boardroom.

Stakeholders' responses, in conjunction with information obtained from the literature reviewed and input from participants of the PES Workshop that was held in May 2011 suggest that landscape beauty and carbon sequestration hold the current greatest potential for Guyana in view of global market issues and Guyana's state of readiness.

Criterion	Carbon Storage/Sequestration Justification for score	Score	Watershed Protection Justification for score	Score	Tourism Justification for score	Score	Biodiversity Justification for score	Score
Identified ecosystem services including services available for both current and future markets	LCDS - still being developed and has only one market	**2**	Work has been started by the GFC	**1**	Limited or no regulations to monitor and assess the carrying capacity and impact. There is poor promotion	**2**	Canopy Capital, Iwokrama, UECA and CI	**2**
Enabling legal, regulatory and administrative context (including positive context for services payments and markets	The LCDS is still being streamlined	**2**	Monitoring of Watershed Code of Practice by GFC, EPA	**2**	There is an establishes Ministry and related agencies/entities e.g. TAAG and Village Councils	**2**	There is room for expansion	**1**
Supporting institutions (including public or private entities that facilitate/oversee public funds, regulate private trade etc.)	Both public and private institutions play a supporting role but it is still being developed	**3**	The National Water Council exists but is not currently active	**1**	Better implementation needed	**2**	A framework exists	**2**
Engaged local communities and stakeholders (including communities, NGOs, financial institutions, business, government etc.	Consultations were held with some communities, however some persons still do not understand what the LCDS is about	**2**	COP for timber harvesting National Water Council and GGMC interact with local communities	**2**	Communities are usually involved in different phases of projects in which they have a stake or which could affect them	**3**	Examples are Iwokrama and Surama	**3**
Flow of market information	There is currently only one buyer	**2**	There is a limited flow of information and pockets of research are done	**1**	Limited or none	**2**	International exposure received e.g. National Geographic	**2**
Technical assistance (to sellers, buyers and other market actors, which includes training, education and advising)	Some training has been conducted. The President and team present information to buyers	**2**	Some research done by EPA and GFC	**1**	Workshops and training of trainers conducted	**2**	CI,WWF, building	

Criterion	Carbon Storage/Sequestration Justification for score	Score	Watershed Protection Justification for score	Score	Tourism Justification for score	Score	Biodiversity Justification for score	Score
Financing (for all needed components, including ecosystem management costs, transaction costs etc.)	More financing is needed to conduct other aspects of the project , e.g. Carbon Stock Assessment	**2**	Not known	**0**	Limited or none	**2**	CC and Iwokrama	**12**
Support services for Market Actors (such as brokering, legal advice, measurement and valuation of ecosystem services, third party verification, accounting, computer technology etc.)	No verification has been done to date	**0**	This avenue has not been explored	**0**		**2**		**0**
Standards and Guidelines: for ecosystem services payments or markets	Standards and guidelines are still being developed as the LCDS is still being streamlined	**2**	Existing guidelines need to be tailored for watershed protection	1	Amerindian Act	**2**	May exist at the NGO level	**0**
Awareness of ecosystem services values, payments and Markets (among policymakers as well as potential sellers and buyers	Assessments are still being conducted	**2**	There is some awareness of ecoservices but none or limited on markets and payments	1		**2**	Conducted through awareness Secretariat on REDD=	**1**
Totals		**17**		**10**		**21**		**14**

With regard to the level of PES offering in Guyana, stakeholders supported both the national and community levels, as indicated below.

- The appropriate level will depend on the type of ecosystem service being offered. For example, protected area(s) or titled community (ies) can adopt a site specific approach to the provision of services like biodiversity conservation, which can be offered at both the national and international levels. The State, along with Protected Area(s) and titled community (ies) that include watersheds/water sources, can also offer these services at the local and national levels.

- In keeping with the current approach, engaging in PES should be a national activity, with the involvement of all levels of stakeholders. Communities would have the option to be part of such a scheme, based on choice and fulfilment of agreed technical criteria (as is the case of the Low Carbon Development Strategy).

- There are opportunities for both levels but priority should be given to the national level for sustainability, transparency, transaction costs, more effective control and management, etc. Government is in a better position to manage large scale projects.

- Communities, especially indigenous communities should also be allowed to participate. This will boost and incentivize local participation, spread benefits, promote conservation and help to fight poverty.

- At any level there should be recognition of traditional use rights and not simply ignore and impose systems that basically ask traditional users to pay just like external users.

Appropriate Systems or Forms of Compensation

Three principal systems of compensation have been considered appropriate for Guyana:

- Monetary (Cash transfers) for example Carbon Storage and Sequestration

- Tax Incentives

- Payment in kind, which can lead to capacity building which could ultimately benefit the resource because of increased management and monitoring capacity.

Some stakeholders noted that the form of payment will be determined by on the type of ecosystem services, and that cash transfer may not desirable in all instances. It was felt that cash requires more accountability and that if systems are not in fully developed then there could be conflicts and more issues. Furthermore, a suggestion was made to establish a community development fund, controlled by the community which will allow for the following options:

a. Direct payments to be made to communities;

b. Part payment to the community and part investment in the community (50:50 maybe); and

c. Full investment in community development.

d. A system of direct payment to individual households can be adopted.

Importantly, the type of PES transaction will determine the form of payment or reward. To this end, Swallow *et al* (2007) distinguish between PES compensation and PES reward[31]: Compensation for environmental services (CES) are payments or other forms of restitution made to economic service beneficiaries or ecosystem stewards to offset foregone entitlements to environmental services or ecosystem stewardship benefits. Moreover, CES are self-organized contracts, negotiated agreements or tradable allowance and permit systems that facilitate exchange of environmental service entitlements among environmental service beneficiaries.

On the other hand, Rewards of Environmental Services (RES) are inducements provided to ecosystem stewards to enhance or continue to maintain environmental services. RES includes self-organized deals between ecosystem stewards and environmental service beneficiaries, public programmes of reward made on behalf of beneficiaries and eco-labeling and certification schemes for products generated through good stewardship practices.

Since there is no single formal, universally acceptable standard for PES payments, Guyana may wish to consider the following:

- Individual monetary payments, such as cash transfers
- Improvements in public services, such as health or education facilities
- Local infrastructural improvements, such as roads
- Improved land tenure rights

[31] See Swallow, Kallesoe et al (2007) Compensation and Rewards for Environmental Services in the Developing World: Framing Pan-Tropical Analysis and Comparison, World Agroforestry Centre, Kenya.
http://www.fao.org/fileadmin/user_upload/kagera/resource/Swallo-CRES.pdf

Case Study - A Fund to Finance Forest Ecosystem Services in Mexico

In 2002, the Mexican Government created a new, US$20 million fund to pay indigenous and other communities for the forest ecosystem services produced by their land. Indigenous and other communities own approximately 80 percent of all forests in Mexico – totaling some 44 million hectares - as collectively-held private land. Market Features and Rules: The National Forestry Commission signs a Letter of Intent (contract) with a land owner that can be renewed automatically yearly over a period of 5 years. The first payment is made within 16 working days of signing the contract and subsequent payments are made at the end of the calendar year, based upon a satellite photo and random site inspections.

The seller is required to not deforest the land, to guard it from outside sources of deforestation, to advise the buyer of any unforeseen changes to land cover in the area and to allow monitoring of the land by the Program. The contract stipulates that if the expected land management and conservation does not take place, the buyer (government program) is not required to pay the forest owner, and continued participation in the program is terminated for that contract. Further, the forest owner can not reapply for a new contract in subsequent phases of the program.

The price paid to the land owner has been determined by the government based on the opportunity cost of use of the land, assuming that earnings from corn production would be the alternative activity on the land. The price of ~$30 or ~$36 is an average of the corn productivity of land in the areas contracted. The different qualities of hydrologic benefits are derived from the relationship between forest type and water outcome expected. Thus, cloud forests/mesofilous forests receive higher payments of $400 Mexican pesos/ha (~US$36) and temperate forests receive $300 Mexican pesos/ha (~US$30).

Source: Ecosystem Marketplace 2005

The Economic Value of the Ecosystem Service

Guyana does not have (as yet) a comprehensive valuation of the ES its forests offer. This is due, in part, to incomplete forest inventories, given the resource (financial and human) implications of the geographic scale and issues of accessibility for ground truthing. Nevertheless, work has been done, to some extent. As mentioned in Section 1 of this Report, initial valuations, conducted by McKinsey & Company (and based on an assumption that the majority of the 16 million hectare rainforest is suitable for timber extraction and post-harvest agriculture, and significant mineral deposits exist below its surface) estimated the value of the State Forest Estate - known as Economic Value to the Nation or EVN – to be the equivalent of an annual annuity payment of US$580 million. Moreover, the LCDS (May 2010) notes that conservative valuations of the Economic Value to the World (EVW) provided by Guyana's forests suggest that, left standing, they can contribute US$40 billion to the global economy each year. Based in that assessment, the Office of the President has estimated the value of Guyana's rainforest, if harvested and the land put to the highest value subsequent use, to be between US$4.3 billion and $23.4 billion.

Requirements for the Creation of an Enabling Framework

Key stakeholders identified eleven (11) critical elements that are required for an enabling environment (in Guyana) to access PES markets. These elements outlined below jointly provide Guyana's National REDD+ architecture.

- *International sources of funding and Seed funding*

Guyana needs to identify and access sources of finance to address other requirements related to management and transaction costs, and include PES assessment/feasibility studies, capacity building and readiness, MRV capabilities, policy formulation, and the like. Meanwhile, seed funding is critical to many communities that do not have the financial means to address aspects of resource management. As expected, new initiatives will require financial resources: from awareness building programmes to testing of PES models at a smaller scale.

- *Policy*

A comprehensive REDD+ policy which addresses PES should be developed. Since REDD+ is relatively new and still evolving, the design of a policy should be sufficiently adaptive to respond to imminent changes in REDD as it evolves. Guyana already has in place policy documents (for example, National Forest Policy Statement (1997), National Forest Plan (2001), National Forest Policy Statement (1997), and National Forest Plan (2001) that can be reviewed and revised accordingly to meet this objectives. Additionally, Guyana's Low Carbon Development Strategy (LCDS) and the REDD+ Governance Development Plan (with 23 thematic areas and clear requirement and timelines for implementation) are notable steps being taken in terms of policy formulation.

- *Legislation*

Legislation provides regulatory and use framework to reduce conflicts. Notably, Guyana does not have legislation that speaks directly to the issue of payment for forest ecosystem services; however, there are indirect references that could be identified in the country's Forest Act of 2009, Section 25 (b) states*: "forest" includes (i) mangrove forests and any wetlands or open lands within a forest which form an integral part of the ecosystem; (ii) forest produce in the ecosystem; and (iii) biological, soil, and water resources of the ecosystem.* Further, "*forest conservation operations" includes (a) the preservation of forests for the purpose of carbon sequestration or any other form of environmental service; (b) the conservation of biological diversity; (c) eco-tourism" and Section 31(6) affirms that the State shall give the owner and the lawful occupier of any land declared to be a forest conservation area adequate compensation for the disturbance of their rights, including the fair value of all forest produce to which that owner or occupier would, but for the order, be entitled to remove from the land*".

While this is laudable, there is urgent need to put in place a more comprehensive legal framework for PES implementation that would (i) define the terminology of ES, institutional arrangements, responsibilities, contract requirements, and mechanisms for ensuring payments and the resolution of conflicts; (ii) clarify land and resource tenure; (iii) provide specific rules and transaction mechanisms and the establishment of a PES Fund; and (iv) determine compliance and enforcement mechanisms. Additionally, legal requirements cover issues such as rights of local communities (especially

Amerindians) over the resources in terms of ownership and access to the resources, the payment of fees, and the use and sharing of benefits among the stakeholders as required by the UNCBD.

- *Standards and guidelines*

Guyana will need technical assistance to standards and guidelines for monitoring and measuring success, social and environment standards, and the operation of PES schemes. In special cases there may be the need for guidelines which may lead to 'eco-certification' of products.

It is noteworthy that ISO 14064 standards were launched in 2006 by the International Organisation for Standardization, a non-governmental organisation consisting of a network of the national standards institutes. ISO 14064-2 provides guidance for quantification, monitoring and reporting of emission reductions or removals from GHG projects. It includes guidelines for planning a project; identifying and selecting GHG sources, sinks and reservoirs relevant to the project and baseline scenario; monitoring, quantifying, documenting and reporting performance; and managing data quality. It is not a full-fledged offset standard and does not spell out the exact requirements or eligibility criteria. The requirements would be defined by the GHG program or regulation that uses ISO 14064 as a building block (example: VCS uses ISO 14064).

Other important standards

Plan Vivo was developed by the Edinburgh Centre for Carbon Management (ECCM) in collaboration with El Colegio de la Frontera Sur (ECOSUR) and the University of Edinburgh in 1994. The Standard was earlier managed by the BioClimate Research and Development (BR&D) and is now managed by the Plan Vivo Foundation, a registered Scottish charity. It aims for climate change mitigation with active participation from rural communities and farmers. Eligible projects include agroforestry and afforestation, including small-scale timber, fruit or fuelwood plantations; restoration and reforestation of degraded or damaged ecosystems; and avoided deforestation. The projects should be in rural areas in developing countries, and on lands where smallholders or communities have ownership, lease or use rights.

Relevant Protocols: Plan Vivo Standards 2008

Process: PIN → PDD → project-specific methodologies approved → Validation → Registration → Annual report → Verification every 5 years minimum → Credits issued.

Verified Carbon Standard (VCS)

The VCS Program was launched in 2005 by the Climate Group, the International Emissions Trading Association (IETA), the World Economic Forum and The World Business Council for Sustainable Development. The Standard is managed by the VCS Association, an independent, non-profit organization headquartered in Washington, DC. It was called the Voluntary Carbon Standard till February 2011.

Eligible forestry projects include Afforestation, Reforestation and Revegetation (ARR); IFM and REDD anywhere in the world.
Relevant Protocols: Guidance for AFOLU Projects 2008, Voluntary Carbon Standard Program Guidelines 2008, Voluntary Carbon Standard 2007.1. VCS 2011 documents open to public comments.

Process: Submit documents → Use approved methodologies or propose new ones for approval (double approval process) → Validation (some components need double approval) → Monitoring Report →Verification of ER (some components need double approval) → Registration → Credit issuance

Voluntary Social-Environmental Standards

Climate, Community, and Biodiversity Standards (CCBS) operated by the Climate, Community, and Biodiversity Alliance (CCBA) of research institutions, corporations and non-governmental organizations (NGOs). CCBS identifies land-based climate change mitigation projects that simultaneously address climate change, support local communities and conserve biodiversity. Projects can occur anywhere in the world. Once a project is designed, third-party evaluators validate the projects against CCBS criteria. To earn CCBA certification, projects must satisfy all fourteen required criteria and earn gold level status by satisfying any of the three optional gold level criteria.

Relevant Protocols: CCB Standards Second Edition, 2008

- *Market information*

Rreliable information on markets (level of supply and demand, PES prospective buyers, economics of the land use) for ecosystem services is clearly a priority requirement as it will help decision makers at both the national and local levels to understand, assess, identify and target the right market for PES being offered. It will also inform value considerations in terms of monetary aspects.

An example, of this service is Ecosystem Marketplace which provides current news, data and analysis on markets and PES.

- *Public education & participation*

People need to be aware of the environment in which they live and interact; also of PES and the implications it has for families, communities and the country as a whole. Through education and awareness, citizens of Guyana will be able to participate meaningfully and make informed decisions within their homes, communities, etc about the ES within their direct/immediate control. To this end, public education via outreach programmes based on non-formal (mass media, seminars, public forums) and formal approaches (taught in National Education Curriculum) must be strengthened in order to lead to process of public 'buy- in', support and 'ownership' and acceptance of the national initiative. Participation is imperative for any national programme to be successful.

❖ *Human resource capacity building*

PES is new to Guyana, therefore we do not as yet have the capacity to face the challenges it will bring. This capacity needs to be developed in technical as well as managerial areas.

First, there is the need for scientific and technical knowledge for measuring and documenting existence and current status of ecosystem services that the nation, including local communities, wishes to offer. **Second,** senior government and community officials who will be directly involved in PES need training in negotiation skills and contractual experience that will ensure that both service providers and beneficiaries are negotiating as partners, and that each has full access to all relevant information to facilitate agreement on all terms of the contract. **Third,** monitoring, reporting and verification are non-negotiable in PES deals; therefore expertise in these areas must be enhanced through technical assistance (outlined below), depending on the needs of involved parties and the complexity of the tasks.

Skills required for PES

- Assess potential risks and benefits associated with complex agreements, such as PES deals?
- Negotiate complex agreements with external (potentially private sector) entities, including multi-year or even multi-decade deals
- Handle financial transactions with external / non-community-based entities
- Ensure (if the deal is community-focused or even multiple seller-based) equitable and fair distribution of the revenues generated by a deal with a non-local entity
- Implement complex natural resource management deals
- Assure through ongoing monitoring, evaluation, and even external, third party verification — that the money paid with a PES deal will indeed lead to the promised (ecosystem service-related) outcomes

Source: The Katoomba Group, 2008.

❖ *Technical assistance*

Guyana has always identified capacity building in training, education and advising as a key requirement for the fulfillment of its international obligation. Similar, the country needs technical assistance to build its capacity to implement, manage and monitor PES schemes. Specific skills (for sellers at national and community levels) have already been highlighted earlier.

Technical assistance can be offered in various ways:

- Bilateral assistance from one country to another.
- South-South cooperation to benefit from experiences with PES schemes in such countries as Costa Rica, Brazil and Bolivia.
- International financial donors could sponsor Guyanese officials for short professional courses and provide in-country training workshops that will have a greater multiplier effect.

Already, there has been the building of technical and human capacities within the various agencies responsible for the implementation of REDD+.

- *Scientific research*

The conduct of scientific research is a key driver of PES given its role in establishing baseline and in MRV as well as addressing policy issues such as such as economic valuation, trade-off analysis and spatial modeling of ecosystem services under alternative scenarios, with a view to understanding local people's reliance and impact on ecosystem services. Additionally, the University of Guyana, University of the West Indies and researchers (employed by state agencies and NGOs) should collaborate in research capable of assessing potential areas for ecosystem service deals through the use of Geographical Information Systems (GIS) to identify the most promising areas for financial arrangements between buyers and sellers by creating map overlays of: soil; forestry cover / land use cover; and other key factors.

A starting point for Guyana could be the establishment of the Centre of Excellence for Biodiversity Research.

- Establishing property rights

Stability, predictability, and consistency in de jure and de facto property rights, as well as transparency in the allocation of those rights, are critical factors in the use and success of market tools to protect ecosystem quality. The property rights applicable to PES include (i) rights to the land, water, forest or other resources whose management generates the ecosystem services; (ii) rights to secure and access the ecosystem services themselves (e.g., rights of resource owners and local and downstream non-owners to consume water of high quality); (iii) rights to buy and sell ecosystem services; (iv) rights to control management of resources owned by others (e.g., the right of a downstream company to buy a legal easement in the forest which restricts the rights of the owner to fell that forest.

Decisions about the allocation of these rights (who has the rights, who has the rights to manage, to buy and to sell?) must be entrenched in national legislation after stakeholders would have reached an agreement. This is critical given Guyana's experience in tenure issues related to land and forests.

- Interagency coordination

The legal jurisdiction and associated administrative purview of state agencies needs to be reviewed to avoid un-necessary overlaps and to reduce administrative costs related to the implementation of PES schemes. This requires that agencies strengthen their partnership arrangement through a National PES Technical Committee, whose functions do not, in turn, overlap with the Multi-Stakeholder Committee.

Participants of the PES workshop held in May 12-13, 2011 identified the key agencies and their respective roles and responsibilities for successful PES schemes in Guyana. Details are presented in the table 5 below.

Table 5 Key Agencies' Roles and Responsibilities for PES in Guyana

Roles and Responsibilities	OCC	MOAA	GFC	EPA	GGMC	MOF
Public Awareness and Education	✓	✓	✓	✓		
Capacity building (training)	✓	✓	✓		✓	
Facilitate stakeholder discussion with communities		✓				
Brokering the modalities of partnerships with communities	✓	✓				✓
Oversight , monitoring and support to communities		✓		✓		
Coordinate Protected Areas				✓		
Develop a permitting system for PES				✓		
Regulatory body to oversee management of State forests			✓			
Partner with other regulatory bodies		✓	✓	✓	✓	
Monitor status of and changes to forests (MRV)			✓			
Develop framework for implementation of PES			✓			
Negotiating and coordinating agency for PES	✓					
Ensure adequate disbursements of PES funds	✓					✓
Development of forms of incentives						✓

Source: Responses from workshop participants

3.3 Guyana's State of Readiness

Guyana is in the forefront of REDD readiness for developing countries, some of which are seeking to learn from our lessons and adapt our strategies. The fact that the country is recognised as an example for REDD development strategies is suggestive of our advanced state of readiness. Specifically, Guyana's state of readiness is based on a number of taken initiatives in respect of PES schemes. Chief among these are:

- Initial valuations of our forests by the Mc Kinsey Group & Company ;
- A MRV Roadmap and implementation of two aspects of work as outlined in the Road Map: forest area change assessment and forest carbon stock assessment;
- Design of a national forest carbon monitoring system forms an essential component of Guyana's MRVS.
- Development of a REDD+ Governance Development Plan
- Establishment of a national baseline of environmental services in Guyana and examination of ways in which a monitoring system for ecosystem services can be integrated in the national MRVS.

GENERIC CHECKLIST OF REQUIREMENT FOR AN ENABLING ENVIRONMENT FOR PES MARKETS

- ✓ National laws that enable payments for ecosystem services;
- ✓ National laws on tenure and use rights;
- ✓ 'Rules' for ecosystems service markets, including guidelines for payments;
- ✓ Existence/creation of public and private entities and nongovernmental organizations to support or reduce transaction costs and connect buyers with sellers;
- ✓ Existence/establishment of intermediary groups with expertise in community organization, for example, may be selected to take responsibility for local project management, and to mediate between investors and local people;
- ✓ Institutional capacity in a number of areas, including:
  - Scientific and technical knowledge for measuring and documenting the existence and current status of ecosystem services that sellers wish to provide, and also for comprehensive land management plans
  - Negotiation skills and contractual experience (including financial planning)
  - Implementation, monitoring and verification expertise which may involve technical assistance associated with implementation and/or third-party verifiers, depending on the buyer's needs and the complexity of the tasks.
- ✓ Technical Support Services for project implementation, including brokers, certification, financing, insurance (related to risk and compensation), measurement and monitoring, market strategy, verification, among others;
- ✓ Governance (decentralization policies, performance indicators, access to information; legal recourse in the event of default);
- ✓ Legitimacy, that is the fairness of a process, and how values, concerns, and perspectives of diverse stakeholders are treated (World Resources Institute, 2008);
- ✓ Sector policies (such as agriculture, forestry, environment); and economic and fiscal incentives, (including subsidies, tax credits, payments for ecosystem services, import duties, tariffs, and tax policies).

Source: Training Materials prepared by Consultants, May 2011

- Submission and approval of Guyana's Readiness Plan Idea Note (RPIN)
- Commencement of implementation of Guyana's RPP
- Establishment of a system for Independent Forest Monitoring (IFM) related to the MoU between Guyana and the Norway.

Quality standards and credits: What are the choices in accessing Carbon Markets?

3.4 Accessing Carbon Markets

Forest Carbon standards refer to a set of rules and guidelines that a forest carbon sequestration or sink project should comply with to ensure that it is generating real and measurable net carbon gains. The standards may be set up and enforced:

a) by governments or other statutory agencies (compliance market), and
b) by recognized professional agencies or through consensus for voluntary adoption (voluntary market).

Carbon credits certified to high-quality standards and providing social and environmental co-benefits are increasingly sought after by end users to offset (compensate for) the greenhouse gases they emit through their business or personal activities. Quality credits tend to command a higher market value.

Forest Carbon standards usually set criteria for project eligibility in terms of start date of activities, location, type of land cover, proof of ownership, type of project, and crediting period. All the forest carbon standards listed here have specifications to ensure that the projects/credits are:

a) real and measureable;
b) additional to any that would have occurred under a "business-as-usual" scenario;
c) address the reversal risk of the carbon captured into the atmosphere (through burning, logging and other disturbances); and
d) address displacement of degrading activities outside the project area (called leakage). Most of the standards have specifications requiring neutral to positive social and environmental effects, though the scope and stringency differs greatly. Almost all require independent validation and verification for eligibility and performance by approved verifiers. Background information, protocols and process for the different standards are presented below.

Compliance Market Standard - Clean Development Mechanism (AR CDM)

The first and only compliance forest carbon standard and market applicable for carbon projects at present is the Clean Development Mechanism (CDM) for developing countries under the Kyoto Protocol, UNFCCC. Of all the different forestry activities possible, the CDM only allows afforestation and reforestation activities (sectoral scope 14, AR CDM) to be implemented over the first commitment

period (2008-2012) of the Protocol. Developed countries with mandated emission reduction targets under the Kyoto Protocol can use AR CDM project credits to offset their emissions.

> *Relevant Protocols:* Approved A/R methodologies, Approved small scale A/R methodologies, Modalities and procedures for A/R project activities, Simplified modalities and procedures for SSC A/R project activities.
> *Process:* PIN → DNA Letter of no objection → Use approved methods or propose new ones for approval by CDM Executive Board (EB) → PDD → Host country DNA approval → DOE Validation (with Public Comments Period) → Registration by CDM EB → DOE Verification → Credits issued

Voluntary Forest Carbon Standards

Voluntary standards for forest carbon offsets subsequently emerged in countries like the USA that did not sign the Kyoto Protocol. These standards cater to a small but growing voluntary market for forest carbon credits across the globe, and also fill in the gaps left by the CDM by covering other forestry project types such as avoided deforestation, avoided degradation and improved forest management.

Voluntary standards applicable for forest carbon projects at present include six international standards for projects around the world and one domestic standard for projects in China.

1. <u>American Carbon Registry (ACR)</u>

The American Carbon Registry was founded in 1997 by the Environmental Defense Fund and Environmental Resources Trust. This private voluntary Greenhouse Gas (GHG) registry and standard became a part of the non-profit organisation Winrock International, USA in 2007. It accepts AR, IFM and REDD projects anywhere in the world.

Relevant Protocols: ACR Forest Carbon Project Standard v 2.1 (2010)

Process: GHG Project Plan → Apply an ACR-approved methodology or propose new ones for approval → ACR certification of Project Plan → External Validation → Registration → Annual Attestation and confirmation of registration → Monitoring and reporting of emissions reductions and removals → Verification at 1-5 year intervals → Credit issuance

<u>2. CarbonFix Standard (CFS)</u>

The CarbonFix Standard is managed by CarbonFix, a non-profit organisation that was registered under German law in 1999 to follow the UN climate process and promote climate forestation projects. As the UN mechanism AR CDM was not fostering forestation projects in the expected scale, projects started moving to the voluntary carbon market. The voluntary CarbonFix standard was initiated in 2007 and aims to increase the amount of sustainably managed forests and decrease global CO2 levels. It accepts AR projects anywhere in the world and supports projects with demonstrated commitment to socioeconomic responsibility.

Relevant Protocols: CarbonFix Standard v3.1 October 2010

Process: Project documents (to use CarbonFix methodology) → Pre-validation → Certification → Can assign carbon credits to buyers → Verification of emissions reductions at 5 year intervals → Certificates issued → Compensation for shortfalls on credits already assigned to buyers.

3. Chicago Climate Exchange (CCX)

CCX was a voluntary yet legally binding GHG cap and trade system in the USA that closed down recently. However, the CCX standard for issuing voluntary carbon credits to offset projects continues to operate. AR and SFM projects in the USA and in developing countries are eligible.

Relevant Protocols: CCX forest carbon project sequestration protocol updated 2009

Process: CCX Project Implementation Document → Projects can follow standard AR method or other method → CCX Forestry Committee Approval & Registration (AR projects that adhere strictly to requirements can be automatically registered) → Annual Reporting → Annual Verification → Credits issued

4. Social Carbon

This standard was developed by the Ecologica Institute, a Brazilian non-profit organization. It certifies voluntary emission reduction projects for their social and environmental performance and contribution to sustainable development. Projects can occur anywhere in the world.
Relevant Protocols: Application Manual Forest v0.1 draft September 2010, SOCIALCARBON Standard v4.1 February 2010.

Process: Selection of an approved organization to apply the Standard → Elaboration of indicators for the project → Prepare a SOCIALCARBON report with baselines for assessing contribution to sustainable development → Validation of report → Annual monitoring via SOCIALCARBON reports → Verification of SOCIALCARBON report → Verified Emission

Reductions can be registered on the SOCIALCARBON registry. CCBS and Social Carbon do not verify carbon emission reductions. They verify social and/or environmental criteria. Some developers certify the projects to a carbon accounting standard as well as CCBS or Social Carbon to generate high quality carbon offsets that fulfill multiple criteria. CCBS and SOCIALCARBON processes are implemented alongside the conventional project cycles.

SECTION 4 CHALLENGES

4.1 Generic Challenges

If the provision of ecosystem services is clearly valuable, then why don't more payment schemes exist? Why are markets so hard to set up? The answer is threefold: lack of knowledge, institutional inadequacy, and the problems inherent in public goods. Perhaps the most basic reason we do not pay more attention to the provision of ecosystem services is that we take them for granted. However, Ignorance of the sources of goods and services we depend on goes well beyond the average citizen. To design policy instruments that efficiently provide services, at minimum policy analysts must be able to identify services on a local ecological scale—detailing how they are generated and how they are delivered. In most cases, scientific knowledge is inadequate to undertake meaningful marginal analysis—to predict with any certainty how specific local actions affecting these factors will impact the local ecosystem services themselves.

This lack of knowledge is due both to the lack of relevant data and to the multivariate complexity of the task. Analysis of how ecosystems provide services has proceeded slowly not only because ecosystem level experiments are difficult and lengthy, but also because research to date has focused much more on understanding ecosystem processes than determining ecosystem services. And how an ecosystem works is not the same as the services it provides.

A second obstacle concerns the role of markets and public goods. As mentioned before, a "public good" is one whose use and benefits cannot be exclusively controlled, such as national defense or law and order. All those who live in a country with secure borders and low crime rates benefit from these public goods, whether they pay taxes or not. Similarly, those who live downstream from wetlands benefit from the role wetlands play in slowing floodwaters, whether they paid to conserve the wetlands or not. In fact, most ecosystem services, ranging from flood control and climate stability to pollination, provide nonexclusive benefits. We have no shortage of markets for most ecosystem goods (such as clean water and apples), but the ecosystem services underpinning these goods (such as water purification and pollination) are free. The services themselves have no market value for the simple reason that no markets exist in which they can be bought or sold. As a result, there are no direct price mechanisms to signal the scarcity or degradation of these public goods until they fail (at which point their hidden value becomes obvious because of the costs to restore or replace them). This might not be critically important if most lands providing services were public property that could be set aside for conservation, but they are not. "Private" Amerindian lands are vital not only for biodiversity conservation, but also for provision of most other services.

A further economic obstacle to the creation of service markets is the problem of collective action. Markets for services can only be established if there are discrete groups of providers and beneficiaries. Otherwise, transaction costs become too high for contract formation. The public goods nature of many services makes this a real concern. Biodiversity, for example, benefits agriculture through the insurance service of genetic diversity and benefits pharmacology through provision of antibiotics and other medicinal compounds. While we all gain from these benefits, there is no sufficiently discrete class of beneficiaries with whom landholders can negotiate, and the transaction costs of gathering enough beneficiaries together to negotiate for the service are too high. Thus, it is no surprise that private purchasers of biodiversity's benefits are hard to come by, which explains why there are so few true markets for biodiversity. Put simply, if a land use provides valuable ecosystem services but they are widely enjoyed by diffuse beneficiaries, it is unlikely that a market for services will arise in the absence of government intervention.

As a final point, it is worth noting that ignorance and public goods -- the barriers to market creation -- are related. Markets create knowledge. We have a very advanced understanding of how to manage farmland to maximize production of cash crops for the simple reason that *they are cash crops*. It pays to manage land efficiently for crop production. We have less understanding of how to manage land for service provision, not because services have no value but because land owners cannot capture any of the value their landscape provides. Agricultural markets provide very clear signals to farmers of the value of clearing remnant vegetation to grow more crops; but there are no markets for biodiversity, water quality, or flood control to reflect the loss in benefits once the land is cleared. Thus, while a wetland surely provides existence or option value to some people, the benefits provided by the wetland's nutrient retention and flood protection services are both universal and undeniable. Tastes may differ over beauty, but they are in firm accord over the high costs of polluted water and flooded homes. Yet when we buy a wetland property, we pay for location and scenic beauty, not its role as a nursery for sea life or filter of nutrients. These remain positive externalities. Such circumstances make ecosystem services easy to take for granted. Because it is difficult to prevent someone who did not pay for an ecosystem service from benefiting from it, it is equally difficult to get such people to pay for provision of these services. Why pay for something when you have always gotten it for free? As a result, a key challenge in implementing an ecosystem services approach lies in creating a market where none exists— in capturing the value of the service by compensating the providers.

4.2 Specific Challenges

While Guyana has unarguably undertaken several initiatives aimed at creating that enabling framework for the implementation of PES, the following points which have emerged from the information obtained from key stakeholders must be recognised.

- There is a need to develop more comprehensive legislation since as compared to the situation in Costa Rica there are no laws on non tangible resources for sale. The Costa Rican law can be tailored to suit local conditions. It was noted that the current rules for eco-systems apply only to the Norway Agreement which was a one time response to a situation.

- Some institutional capacity has been developed but there is room for improvement. Implementation, monitoring and verification systems also need improvement as does the capacity for negotiating skills to the level of that existing in the OCC.

- Work needs to be done to improve the current limited technical support systems.

- There is need for greater decentralization, giving more power to local people.

- Legal recourse can be included in a law for PES.

- Guyana has a lot to do and a far way to go in terms of financial resources and in some aspects human capacity building.

- Guyana's natural resource management systems need further strengthening.

- Sector policies may need to be assessed, especially in light of the LCDS, to identify and address possible overlap and duplication. In some instances the assignment of responsibilities in not clear.

- A sustainability appraisal of the LCDS would be a valuable exercise, indicating how other policies are enhanced by the LCDS or may have a negative effect on the economy. The policy on the importation of second hand vehicles was cited as an example of the need for appraisal. Policies such as those on agriculture, the environment and forestry would undoubtedly benefit from such as exercise.

- In some aspects, Guyana is well prepared to move forward with a PES programme, as demonstrated by the current example of the Norway – Guyana partnership. PES is also compatible with the developmental reorientation outlined by the LCDS. However, the implementation of additional PES programmes will require investment in a number of key areas. The first area is feasibly studies (including market information and scientific research to establish baseline). Once the feasibility has been determined, then there will need to be investments into policy/legislation development, institutional capacity building and other technical assistance.

4.3 The Way Forward

In view of the current drive to improve the competitiveness of businesses in Guyana and to simplify the process of starting up businesses, efforts to introduce SFM and to use PES mechanisms might be seen as an additional hurdle. But this is more perception that reality.

Making Progress and Agreements

The literature identifies many innovative deals and programmes around the world, but it must be kept in mind that trading in environmental services is still a nascent and marginal set of transactions. The players are still just beginning to grasp the potential ways in which markets can help protect forest services and improve well-being. Innovative investments and programmes should be pursued – by forest holders (government or community) looking for compensation, private investors looking to lower costs or reduce risks, community groups seeking to ensure continued supplies of natural capital and governments looking out for the public good. Pursuing this agenda entails gaining knowledge about market approaches, building institutions to facilitate them and making deals – forging ahead with innovative investments and programmes.

The Way Forward as perceived by Stakeholders

- Analysis of human capacity needs.
- Examination of policy and legal framework needs
- Create the legislative framework for forest preservation and PES and for a low carbon economy (LCE).
- Involve, educate, and build capacity among our hinterland communities/farmers to access the PES market. Teach them to calculate values for services/establish a valuation system.
- Expand the OCC to include communities and other stakeholders; regional offices.
- Establish a central verification system or a registration body for PES.
- Establish a National Biodiversity Institute to act as a clearing house for selling biodiversity services.
- Prepare a marketing plan for PES.
- Adopt a market based approach for PES, biodiversity and conservation.
- Create an investment specific PES guide as a strategic tool to attract investors.
- Take definitive positions as outcomes of the international negotiations.
- Continue to build human and technical capacity.
- Consider best practice case studies BUT DO NOT simple transfer experience. Any experience transferred should be adaptable to the context of Guyana (which has many unique aspects) so care should be exercised here.
- Focus attention on building (PES) constituencies locally, nationally, and regionally.
- Once this research is conducted and the results are peer reviewed, then the next stage could be public consultations to inform a governmental policy decision.

Gaining Knowledge

A better understanding of some key dimensions of forest services will facilitate the development of new mechanisms: Biophysical relationships – It is vital to advance scientific understanding of the biophysical relationships between forest management activities, the flow of services from forests and the resulting impacts off-site. Better data, modeling and analysis will increase confidence and decrease uncertainty about service

delivery. Risk Management is equally important to understand and develop a range of financial instruments to deal with the uncertainty of these markets. This will most likely entail the creative application of existing instruments such as reinsurance, and guarantees -- and the creation of completely new instruments.

Property Rights definition

The role of property rights and regulations is another critical area for development and learning. For example, how can markets be constructed to provide additional incentive for conservation without contradicting existing regulations and without providing "perverse incentives" for poor land use? Lessons from currently emerging experiences will no doubt prove helpful to innovators everywhere.

Benefits Sharing

The role of equity and participation in markets requires additional study. How can mechanisms achieve the outcomes desired by investors, while also ensuring equitable treatment of relevant stakeholders? What social standards or criteria should be put in place to ensure adequate participation? Are there particular mechanisms that can be used to achieve poverty alleviation as well as conservation outcomes?

Comparing Options

It is critical to understand the different market mechanisms, the conditions in which one might be favored over another and the success of existing instruments and institutions. Describing innovative experiences and "lessons learned" to business and conservation audiences will improve and accelerate the adoption of market approaches.

Building Institutions

To function efficiently, effectively and equitably, all markets require enabling institutions, such as support services, common auditing procedures and contracts. Because marketing forest services is an embryonic field, enabling institutions are only beginning to be developed. Stakeholders may adapt some of these institutions from models established in other areas, but it also may be necessary to construct some institutions specifically for the forest services market. Three institutions lie at the core of market development – assessment methodologies, registries and certification standards.

- Assessment Methodologies –Standard measurement tools are essential because they will ensure transparency and replicability – essential qualities for market development. For example, Winrock International, an NGO, has been working with a variety of organisations on

carbon inventory and monitoring protocols. Similar work for hydrological and biological services is underway by State Forests of New South Wales, Australia. These efforts require more support in order to be fully developed and adopted as credible, standard approaches by market players.

- Property Rights & Registries – The credibility and value of property rights are largely dependent on the existence of formal and unified registries. Recording ownership of property rights with a single authority is critical for reducing transaction risks. Additionally, a registry contains individually serialized records of scientifically verified and measured environmental services. In addition to guaranteeing ownership, a registry can assure potential buyers that credible measuring and monitoring have taken place in a transparent scientific manner. Registries can assure buyers that no double counting had taken place. By developing documentary records of their achievements and establishing title to such services, owners of forests will be more likely to receive value form these services and less dependent on timber for revenue. In Australia, the Catchment Ecosystem Services Investment Center is developing steps to assist with brokering environmental services deals. Initial steps include creating a registry and developing criteria for environmental services. In the US the GHG Registry^{SM} has been designed to facilitate the development of a robust GHG trading market. It is modeled on the US EPA's Allowance Tracking System for the SO_2 (Acid Rain) Programme.

- Certification - Certification is a voluntary procedure involving an independent third party that evaluates performance using specific criteria. The Forest Stewardship Council, an accrediting organisation, has established an international system to certify forest management using social, environmental and economic criteria. But this system is limited to certifying sustainable management for forest products such as timber, not services. It is of critical importance to develop principles and criteria for certifying the management of forest services.

Making deals

Developing markets means invoking a wide variety of tools and understanding the flexibility of each. Innovators located in areas with weak public institutions may find that self-organised private deals are the most effective. Those in highly regulated environments may find that the additional effort to set up a trading system is more than compensated by dramatically increased efficiency in reaching goals. Where public institutions play an important role, public payment schemes are more likely to work.

There is no substitute for experience, and learning by doing is one of the best ways to gain that experience. The existing stock of knowledge has come from those innovators who have forged ahead despite uncertainty and lack of precedent. Business leaders, NGOs and governments should encourage innovation within their own organisations – and in collaboration with other sectors. Those who innovate will be recognised as leaders in the broader global community.

SECTION 5 POLICY CONCLUSIONS AND ROADMAP

This Section provides concluding statements on PES and presents a Roadmap for Guyana to access ecosystem services payments with clear timelines and deliverables.

5.1 Policy conclusions

- Payments for ecosystem services (PES) have considerable potential for raising the viability of sustainable forest management (SFM) and conservation and delivering pro-poor benefits, but are not a panacea. PES should form part of a package of instruments, especially those which reduce the opportunity costs of SFM and conservation.

- Avoided deforestation or REDD (Reduced Emissions from Deforestation and Degradation) has most potential, but also faces a complex set of issues. It is hoped that the international commitment to climate change mitigation will prove sufficient to overcome these.

- Early PES experiences reveal some positive equity impacts like improved tenure security, community empowerment, organisational and social capital development. While PES do not inherently favour pro-poor outcomes, experience is showing that trade-offs between environmental and social objectives can be managed with appropriate external support.

- Governments (and donors) have a vital role in promoting equitable governance, secure tenure, an enabling policy, legal and institutional framework, capacity building of national PES providers, collective institutions and transparent PES monitoring arrangements. These would reduce ecosystem service buyer risks and transaction costs, and facilitate participation.

Whether market mechanism work well, or well enough relative to prescriptive regulation to displace the latter as the primary tool of environmental regulation depends on a number of factors, some of which are easier to predict and control than others. Some of the determinants of the success of market instruments include the sophistication of the market participants; the size and diversity of the market; the vulnerability of the environmental "good" or "service" to accurate valuation; the vulnerability of the regime to political rigging; legal and bureaucratic obstacles to effective implementation; and the potential for gaming, shirking, and cheating by regulated entities, among other things. More likely, the tow approaches will continue to be used in tandem, evolving over time in a dynamic way –sometimes taking on features of each other – and the ongoing challenge will be to carefully design and tailor the right mix of instruments to particular contexts.

5.2 The PES Roadmap for Guyana

The PES Roadmap that is presented below is an attempt to provide a clear and agreed sense of direction and to establish synergies the relations between various REDD + initiatives in Guyana.

Based on the feedback received from stakeholders the following strategic areas will inform the various domains that the Road Map will target.

- REDD + Policy and Accounting Frameworks;
- Legislative framework;
- International Financing and Seed Funding;
- Standards and Guidelines;
- Market Information;
- Public Education and Participation;
- Human Resource Capacity Building;
- Technical Assistance;
- Scientific Research;
- Property Rights; and
- Inter-agency Coordination.

Source:
http://www.adb.org/Documents/Events/2009/CRBOM-workshop/5CMorris-presentation.pdf

Strategic Area	Deliverables	Indicators	Timelines	Stakeholder Institutions
REDD + Policy and Accounting Frameworks Objectives • To formulate coherent adaptive national PES and regulatory policy • To establish appropriate accounting frameworks	Review and revise existing Forestry related policy documents [including National Forestry Policy Statement (1996) and the National Forestry Plan (2001)] and those related to regulations and facilitation of PES. Review and revise national fiscal/accounting policies. Review and revise land titling policies and property rights. Prepare ToR and recruit policy analyst to undertake the above actions.	Distribution and citation of the policy analyses – forestry management, PES related, EPA/regulatory, fiscal and other. Policy Analyst Hired Passage of PES friendly policy/regulatory frameworks. Improved coherence between national and community levels	**0 – 3 years** **8 months** **8 months** **36 months** **0 -6 months**	EPA, Ministry of Legal Affairs, Ministry of Finance, GFC, Ministry of Amerindian Affairs, Lands and Surveys, and OCC

Strategic Area	Deliverables	Indicators	Timelines	Stakeholder Institutions
Legislative and Institutional framework Objectives: Identify key legal and institutional gaps and opportunities Generate recommendations in terms of the legal, institutional action or reforms necessary to stimulate PES	Draft legislation to define PES terminology, institutional arrangements, clarify land and resource tenure, provide specific rules on transaction mechanisms and establish PES fund. Determine compliance and enforcement mechanisms. Assessment of institutional capacity for the management of incentive and regulatory frameworks. Formulate TORs and hire firm with expertise in environmental law and organisational development. Broaden the role of the REDD secretariat to include catalytic functions using REDD Projects to identify legal and institutional gaps and competencies.	Distribution and citation of the legal analyses Distribution and citation of the institutional reviews Recruitment of Firm. Buildup of pipeline of demonstration REDD projects.	**0 – 4 years** **18 months** **12 months** **12 months** **6 months** **6 months**	

Strategic Area	Deliverables	Indicators	Timelines	Stakeholder Institutions
	Establish central verification system or registration body for PES. Prepare marketing plan for PES		**36 months**	
International Financing and Seed Funding Objective: To leverage ecosystem services markets – other than carbon, recognising the multiple benefits and assets that forests provide. Conduct feasibility/PES assessment studies in the form of pilot project that can be transferred between sites and at different scales. Explore and develop non-traditional funding sources including private sector and bilateral arrangements e.g. Norwegian, German and Japanese as well as other Annex 1 Countries.	Build up pipeline of demonstration projects Create investment specific guide as a strategic tool for potential investors. Develop TORs and Hire Firm with expertise in OD and strategic planning. Create PES fund	Plans drafted and circulated for consultation Consultation sessions held Marketing Strategy prepared and circulated Firm hired Fund established	**1 – 4 years** **8 months** **6 months** **6 months** **36 months**	**Embassies and High Commissions, Go Invest, MoFTIC, GFC, OCC, and Ministry of Finance.**

Strategic Area	Deliverables	Indicators	Timelines	Stakeholder Institutions
Leverage international conventions – particularly the UNFCCC and UNCBD – as well as international environmental standards – Vivo, ISO 10064-2, Verified Carbon Standard.				
Standards and Guidelines Objectives: To develop internationally recognised standards such as the FSC certification. Review protocols and indicators for standards bodies Develop national standards that provide guidance for quantification, monitoring and reporting.	Prepare TORs and recruit personnel with expertise in standards and MRV. Conduct reviews and prepare reports.	Personnel hired Reports prepared and circulated for comment	**3 -5 years** **6 months** **4 months**	**GFC, OCC, EPA and Standards Bureau, PES Registry.**
Market Information		**Experts hired**	**5 – 15 years**	**GFC, REDD Secretariat, OCC, and**

Strategic Area	Deliverables	Indicators	Timelines	Stakeholder Institutions
Objectives: Generate inventory of sellers and buyers of ES. Estimation of land use values.	TOR prepared and expertise hired to undertake preparation of inventory and valuation. Prepare Inventory of the sellers and buyers. Prepare valuations.	Inventory prepared and circulated for feedback Valuations prepared and incorporated into strategic plans	**6 months** **3 months** **60 months**	
Public Education and Participation Objectives: To build national awareness of PES and its implications for sustainable development To empower citizens to participate meaningfully in decision-making processes. To promote public buy-in, support and ownership and acceptance. To increase interior	Conduct capacity Assessments to ascertain training needs. Design training materials. Prepare TORs Recruit qualified trainers Conduct training sessions in identified areas.	Training Sessions held with communities. Reformed National Educational Curricula Consultation Sessions held Number of discussions and involvement of communities increased. Involvement of policy/business/financial leaders in the FES developments increases	**0 – 15 years** **3 months** **1 month** **6 months** **On-going**	**OCC, GFC, UG, MOE. Iwokrama**

Strategic Area	Deliverables	Indicators	Timelines	Stakeholder Institutions
communities interest and participation in PES schemes				
Human Resource Capacity Building Objectives: Enhance scientific and technical knowledge for MRV. Enhance legal, financial and administrative skills for Negotiation, Contract preparation, financial and accounting transactions. To enable greater decentralisation in the formulation of PES projects. To enhance the capacity of hinterland communities to influence PES policies that affect their interests and participation in the economy	Conduct analyses of public sector capacity scientific and technical areas, Evaluate capacities in legal, financial and accounting areas including negotiations and contract preparation Design Training materials for technical and community levels Prepare TORs and Hire trainers Conduct training workshops to inform and equip hinterland communities	Assessment Reports prepared and circulated Training Materials Prepared and submitted Trainers hired Training Sessions held Improved public sector and community expertise in PES Community level generation of PES projects.	**3 – 5 years** **12 months** **3 months** **6 months** **36 months**	**OCC, GFC, UG, Community Leaders, Bilateral and Multilateral Agencies**

Strategic Area	Deliverables	Indicators	Timelines	Stakeholder Institutions
Technical Assistance Objectives: To enhance capacity to implement, manage and monitor PES schemes. To mobilize resources to finance activities.	Use economic diplomacy to identify and engage bilateral partners; Use economic diplomacy to negotiate resource flows. Training Courses sponsored for local personnel	Bilateral Agreements signed. Professional courses attended Expanded network of regional partners	**0 -15 years** **On-going** **On-going** **On-going**	**Bilateral partners including southern hemisphere countries, International financial donors**
Scientific Research **Objectives:** • To establish baselines for MRV • To enable spatial modeling of land use and trade-off analysis • To enable economic valuations.	Establishment of the Centre of Excellence for Biodiversity Research. Conduct scientific inventories of flora and fauna. Map soils, forest/land use cover and other key factors using GIS technology.	CEBR established at the University of Guyana Inventories prepared of services Inventories prepared of flora and fauna GIS maps prepared	**0 – 15 years** **18 months** **On-going** **60 months**	**GFC, OCC, UG, Guyana Lands and Surveys Commission, Communities, Iwokrama.**

Strategic Area	Deliverables	Indicators	Timelines	Stakeholder Institutions
	Prepare baselines of forestry ecosystems services		**24 months**	
Property Rights **Objectives:** • To determine allocation of rights to ecosystem services. • To establish legal recourse for buyers and sellers of PES.	Draft and enact PES legislation allocating ownership to ES and natural resource management and rights to sell ES. Establish Registry of ES owners/sellers.	Laws and regulations created to institutionalize property rights in ES	**0 – 5 years** **12 months** **24 months**	**OCC, GFC, M of Legal Affairs, Deeds Registry.**
Inter-agency Coordination **Objective:** • To bring coherence in the interpretation and implementation of PES related legislation.	Review the legal jurisdiction of stakeholder agencies.	Reviews conducted of the legal responsibilities of the agencies.	**0 – 3 years** **12 months**	**OCC, GFC. EPA, MoAA, MoRD, GGMC, GLSC, MoF, MoFTIC, UG, Embassies and HCs,**

Strategic Area	Deliverables	Indicators	Timelines	Stakeholder Institutions
• To clarify roles and responsibilities of stakeholder agencies. • To shorted the lead time for generation of PES projects and approval of funding	Establish a national PES Technical Coordination Committee. Revise (as necessary) the mandate of the stakeholder agencies	Revisions done of agency mandates Meetings of the PES Committee	**24 months** **Ongoing months**	

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Annex 1 Stakeholders Gap Analysis of Guyana's enabling environment for accessing PES markets

Criterion	Status	Gaps	Opportunities
National laws that enable PES	No laws exist	Specific saws are required and/or refining of some current laws.	Establish a PES law, regulations, an institutional framework and directives for action, better use of land use and planning
National laws on tenure and use rights	Amerindian Act Forestry Act (Code of Practice) Guyana Land and Surveys Commission Mining Act	Sector specific and do not fully address the issue Harmonization needed in some areas since conflicts arise from multiple land use	Creation of laws for the entire country. Develop synergy among agencies
Rules/guidelines for service markets	Guidelines exist for the only current ES activity (LCDS)	No other guidelines exist	Develop markets for other ES activities. Expand existing guidelines
Existence/creation of public and private entities and NGOs to support or reduce transaction costs and connect buyers with sellers	Private NGOs such as CI and Iwokrama, WWF, EU/ITTO exist Public entities existing – EPA, OCC, GFC. GGMC, GL&SC, M of AA, Sea Defence Board	Current transaction costs are not specific to ES. Lack of specific information Lack of synergy	Create systems to support transaction costs for PES Convert existing data to generate opportunities for PES. Inter agency collaboration Creation of a Steering Committee as a focus group
Existence of intermediary groups with expertise in community organization	M of AA, EPA, GFC, GGMC, GL&SC, CI, Iwokrama, WWF Limited human resource	Synergy Limited pool of expertise	Training, capacity building
Institutional capacity – scientific and technical knowledge - Negotiating skills and contractual experience -Implementation, Monitoring and Verification	Limited capacity for scientific activity, STK, NS/CS, Sector Policies, legal recourse, negotiating skills, contractual experience, MRVs in initial state, governance at birth, limited to carbon	Limited pool of expertise. Confusion due to mixed messages	Training, capacity building,

Technical support services for project implementation	Limited capacity for technical support		
Governance – policies, performance indicators, legal recourse	Experience limited to carbon sequestration	Experience limited to carbon sequestration	Create policies that will address all aspects of PES. Capacity building and research needed

Annex 2 A g**eneric framework for a PES assessment and action plan that can be applied to any community**