

# Market & Incentive-Based Mechanisms to Support Integrated Landscape Initiatives

**A Summary Report of Their Potential and Limitations**

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## Executive Summary

Market and incentive-based initiatives and mechanisms seek to generate funds from the public or private sector and channel them to private land managers as incentives for environmental conservation and socio-economic development. “Integrated landscape management” (ILM) is where landholders manage the land and natural resources in ways that generate positive environmental (and social) externalities for others in and/or beyond the landscape. The theory is that integrated landscape management enhances ecosystem services.<sup>1</sup>

The attention on Integrated Landscape Initiatives (ILIs) and management has expanded in recent years as more schemes have emerged, some in part due to the increasingly stronger business case for action. The business case relates to several drivers including:

- Concern for investments on the part of those providing finance for investments (e.g. is agribusiness ventures), and private and public partners of projects;
- Reputation and shareholder value, particularly for multi-national companies who operate in numerous geographic locations that have many environmental and social externalities that represent potential threats a) to reputation, and b) to long-term business operations;
- Increased consumer demand for sustainably produced food, fuel, and other goods and services.

Moreover, there has been the emergence of a range of initiatives led by international and multilateral agencies, regional and national governments, and NGOs, among other, in response to the wealth of research concerning climate change and associated negative environmental impacts from human-led activities. Such multi-stakeholder Integrated Landscape Initiatives aim to protect ecosystem services, and at the same time often to improve production and livelihoods.

Among the various responses, market and incentive-based mechanisms have been increasingly proposed and piloted to connect those stakeholders that generate environmental or social services within a landscape with those that benefit from those services. This review, based on a limited number of landscape case studies, identifies the strengths, challenges and opportunities for wider application of emerging mechanisms. It analyses financial or monetary incentives that compensate land managers for actions which support complementary solutions to common environmental and socioeconomic challenges, reduce trade-offs, and strengthen synergies of different landscape objectives. In other words, it includes not only purely market based mechanisms which are provided through an open market of supply and demand, but also more general financial incentives.<sup>2</sup> However, government to government agreements that have no market basis are excluded.

The strengths of the case studies reviewed were demonstrated through how the mechanisms brought together groups of stakeholders under a defined a set of rules creating an institutional relationship

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<sup>1</sup> ILM occurs where landholders manage the land and natural resources in ways that generate positive environmental (and economic and social) externalities for others in and/or beyond the landscape. They thus enhance ecosystem services. Ecosystem services are broadly defined as “the benefits people obtain from ecosystems” through provisioning services such as food and fiber; regulating services that affect climate, floods, etc; cultural services that provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling (Millennium Ecosystem Assessment, 2005. *Ecosystems and Human Well-being: Synthesis* Island Press, Washington, DC)

<sup>2</sup> An expanding literature debates the use of the term ‘market mechanisms’ when in fact most mechanisms are in the form of payments of incentives from bilateral agreements rather than open market exchange of a commoditised product; see Lapeyre & Pirard (2013) ‘Payments for environmental services and market-based instruments: next of kin or false friends?’ Working Paper 14/13 IDDRI, Paris

between them to manage environmental and social services to the greater benefit of all parties. In general, the processes were led by strong NGOs, in some cases working under rules set up by the government, and in others generating or adapting the rules of the mechanisms to local circumstances and needs.

All the processes depended on considerable public or donated funds to cover the costs of establishment of the mechanisms and in some cases for their continued operation. They required considerable negotiation and facilitation between sometimes conflicting interests of the stakeholders. Although all had processes of monitoring and evaluation, the required investment and its complex nature meant that demonstrating impact and success was difficult. Likewise, most processes are inherently long-term commitments and timeframes to demonstrate desired impacts and outcomes.

The opportunities seen were in the fact that the combination of different mechanisms often enabled the linkages of different interests between stakeholders. This also depended on strong local partnerships and community participation, which also needed to recognize non-financial cultural values of the stakeholders. There is potential for greater private sector participation within the case studies. Financing is evident from private sector actors when the sourcing of specific commodities is of interest to them (either agricultural or carbon offsets), but they do not yet appear fully engaged in the landscape processes.

Looking to the future expansion of the use of these mechanisms, ways need to be sought to reduce the dependency on NGO facilitation and public or donated funds to cover their start-up costs. Further sources of public and private finance could be applied to these initiatives. There is a specific need for clarifying and quantifying the business case for ILM in different contexts. Finally, for the future legitimacy of these mechanisms, there is a need for robust processes of monitoring and lesson learning, and evaluation to demonstrate that desired impacts are attained.

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## 1. Converging and growing reasons to transform landscapes for sustainability

For several years global challenges related to food security, persistent poverty, climate change, and ecosystem degradation have risen to the top of international political and economic agendas. To feed a world population that is projected to grow more than 30% by 2050—while reducing food insecurity and accommodating dietary changes—experts estimate the need for a 70% increase in food production worldwide by 2050, and nearly 100% greater production in developing countries. Meanwhile food and fiber production continue to compromise biodiversity and ecosystem services at alarming rates. In response to these global challenges, communities, land managers and other stakeholders around the world have begun adopting integrated landscape management approaches that work deliberately to support food production, ecosystem conservation, and rural livelihoods across entire landscapes.

Instruments that provide incentives for ecosystem services to reduce externalities associated with natural resource management, such as payment for ecosystem services (PES), present promising ways to foster transitions to multi-functional rural landscapes that support food production, biodiversity and ecosystem services, and sustainable livelihoods. Recently, there has been growing interest in PES and other market mechanisms that take a broader view of rural landscapes, encompassing multiple ecosystem services and multiple sectors, while providing stronger spatial, programmatic, and institutional linkages to key landscape objectives such as increased food production and generation of secure rural livelihoods.

Market and incentive-based initiatives seek to generate funds from the public or private sector and channel them to private land managers as incentives for environmental conservation and socio-economic development. Financial or monetary incentives are used to try to change the behavior of land managers. This paper identifies and characterizes the diversity of market interventions which can offer the potential to support landscape interventions, incentivizing farmers and other land managers to adopt eco-friendly practices and business models, and to reduce the costs of adoption. The lessons are tentative given the early phase of implementation of many of the initiatives reviewed, but they may serve to guide landscape decision-makers including civil society groups, policymakers and other institutions (e.g. businesses).

## 2. Overview of mechanisms

A range of financial or monetary incentives have been developed that compensate land managers for actions which support complementary solutions to common environmental and socioeconomic challenges, reduce trade-offs, and strengthen synergies of different landscape objectives. A presentation of examples distinguishes between two main mechanisms that are used in market and incentive-based initiatives:

- i. **Offsetting of environmental impacts** - where an entity that is causing a loss of ecosystem services in one physical location compensates (offsets) by paying for improvements in their provision in another area – this can be applied to carbon offsetting under different mechanisms, biodiversity offsets or wetland offsetting (or banking).
- ii. **Payment for ecosystem services** - where an entity wants to ensure or expand the provision of a service from a specific landscape upon which they depend; this could be payment for watershed protection, conservation agreements and easements, among others.

Two additional mechanisms are included within the typology because these also help promote or facilitate the provision of ecosystem services.

**iii. Sustainable value chains and sourcing** including voluntary sustainability standards and eco-tourism, among others; there is no explicit payment for ecosystem services, but the overall requirement is to minimize negative environmental impacts and maximize benefits compatible with the provision of the main product or service.

**iv. Finance and fiscal benefits** invested in the provision of ecosystem services or the offsetting of the costs of provision (for fiscal benefits). The payment is not for the service *per se*, but to enable the provision of a service through reducing opportunity costs.

Within each of these main types of market and incentive-based mechanisms, there are several different sub-categories, differentiated by the particular ecosystem service upon which they focus (e.g. water, biodiversity, carbon) and by the particular variation of the mechanism employed.

Not all mechanisms are market based, though these can be called incentive based or 'market-like' mechanisms. Market principles play an important role in ILM as experience around the globe shows that where quasi-commercial transactions take place, in the form of 'buying-selling', or in the form of 'borrowing - paying back', or compensating financially for the loss of conservation values, these create an automatic efficiency and effectiveness which may not come into play when conservation is funded only through public or private donations, without the complementarity of a 'market-like' mechanism. These are, therefore, more accurately termed 'incentive based' mechanisms, and they depend upon public policy levers and supporting regulation. In this paper we refer to market-based mechanisms (including these others mechanisms with market features) as an umbrella term for convenience.<sup>3</sup>

A common feature among market-like mechanisms is that many are not completely market based, still depending on public policy drive and supporting regulation, while being market led or mediated. At the same time, in each of the mechanisms the private sector is playing a key role as supply chain integrator, purchaser, or philanthropist. This demonstrates that a mechanism or combination of mechanisms can succeed only in conditions when a mosaic of interests and motivations combine. It is possible for a private organisation to initiate an idea of a landscape approach, but to operationalize the idea, it needs to align stakeholder interests. For instance, a private company might be concerned with the future security of supply of a key commodity (e.g. cocoa) but to address a cross-cutting issue such as water it is necessary to align with others.

It is important to mention here that non-market values also play a significant role in the success of market-like mechanisms in the ILM context as relevant stakeholders (including the general public) have to be convinced and therefore willing to forgo some short-term opportunities for the sake of longer-term natural resource conservation needs.

### 3. Offsetting environmental impacts

The offsetting of environmental impacts involves payments (offsets) made by an organization or entity, which is causing a loss of ecosystem services in one physical location to compensate for this by

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<sup>3</sup> Government to government agreements that are public subsidies and grants for environmentally sustainable land management represent the largest driver of land use in the EU, China and US and have similar objectives, but do not have a market basis at all.

paying for improvements in their provision in another area. This is commonly applied to carbon offsetting under different mechanisms, biodiversity offsets or wetland offsetting or banking. Markets for offsetting environmental impacts exist for carbon, watershed and biodiversity ecosystem services.

Carbon offsetting markets are both regulated and voluntary. Regulated markets are the largest in scale, funded by the public sector. Generally, lower income countries receive finance from higher income countries to fund environmentally friendly sustainable development initiatives in exchange for carbon credits to offset emissions generated in higher income countries. Similarly, voluntary markets follow this geography of carbon market finance but differ in terms of scale and actors. Voluntary markets are smaller in scale and are funded by private sector companies. The REDD (Reducing Emissions from Deforestation and Forest Degradation) mechanism has been developed to enable governments in higher income countries to directly fund forest conservation projects primarily located in lower income countries. REDD+ goes beyond deforestation and forest degradation, and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks. To date, some REDD+ commitments have been made but few actions implemented.

Watershed offsetting markets involve both public and private sector finance but the largest and most established schemes are publicly funded. The most well-known are found in higher income countries (e.g. the US and Australia) involving projects to fund restoration of watershed services in one area to compensate for loss incurred elsewhere by, for example, the development of public utility infrastructure.

Biodiversity offsetting markets are most developed in USA, Canada and Australia and are mandatory mechanisms that oblige developments that negatively affect certain types of biodiversity or endangered species to restore similar areas on other sites. Some mechanisms also include implicit restoration of ecosystem services, but also some include offsetting processes, e.g. conserving hydrological services of wetlands also restores biodiversity.

#### **4. Direct payments for ecosystem services**

These are used when an organization or individual wants to sustain or to expand the provision of a service from a specific landscape upon which they depend. These include payments for watershed protection, conservation agreements and easements, among others. Direct payment mechanisms have developed to enable an entity (e.g. a government body) to pay for the construction, preservation, or restoration of an ecosystem service (e.g. water) required for its purposes. These markets are dominated by public sector finance to improve public goods provision such as flood protection. At smaller funding levels private sector funding exists, for example, breweries paying for required water services. Schemes for payments for water services are both mandatory and voluntary. One example is a Water Futures Partnership involving South African Breweries Ltd, SABMiller, WWF, and GIZ.

Another direct payment option is conservation easements (agreements or contracts) which are used to conserve biodiversity and associated ecosystems services on privately-owned land. A land trust or government body makes payments to private landowners to not develop (and therefore conserve) natural areas, waterways or forests. Agreements are made on a voluntary basis. One example is the Lake Navaisha Initiative, a collaboration between the Kenyan Government, WWF, Dutch Flower Industry, and Community Groups).

## 5. Sustainable value chains and sourcing

Sustainable value chains and sourcing is a broad term for more sustainable production and trade of commodities along value chains and for decisions by companies about where and from whom to buy based at least partly on sustainability criteria. The most developed of these initiatives are the voluntary sustainability standards and ecotourism, although there are many individual organization-level efforts to improve the sustainability of value chains each with its own specific criteria and outcomes.

The number and scale of voluntary sustainability standards have grown significantly over the past two to three decades. These tend to be private sector financed initiatives that contain standards to enhance or minimize negative outcomes against defined economic, social, and environmental criteria. There are examples at company level (e.g. Starbucks' C.A.F.E practices), commodity level (e.g. Roundtable on Sustainable Oil Palm, Forest Stewardship Council), and standards and certifications that operate across a range of commodities and are open to all interested companies (e.g. FLO, Rainforest Alliance, Utz, Global G.A.P.). The management of organic certification standards varies with government defined standards for some countries or regions (e.g. US and EU), although private standards also exist (e.g. Soil Association). The market sizes for products that are subject to standards or certification are driven by consumer demand and responses to pressures to increase environmentally responsible and ethical sourcing in supply chains. Verification of meeting defined criteria is generally independent of the supply chain actors directly involved in transactions.

Ecotourism represents a diverse and growing sector that generates income for both the public and private sector. Markets and opportunities are driven by ethical travelers who seek tourism packages that offer social and environmental sustainability schemes. The packages offered tend to have either wildlife or cultural ecosystem service focus. Income maybe generated from national park fees to governments or to individuals from accommodation at wildlife lodges.

Efforts also exist to promote the production and sale of non-timber forest products (e.g. fruits, nuts, medicinal plants, or essences) and, more sustainable livestock production that are managed with sustainability of the broader landscape in mind.

## 6. Preferred finance

Preferred finance or soft finance (public and private) is critical for initiation and stability of ILM initiatives. Preferred finance is an important means to initiate and sustain market and incentive-based mechanisms. There are variations in the kind of finance secured for initiatives. In some cases, the finance for the landscape initiatives mainly comes from public funds (primarily fiscal incentives), in other cases the resources are mobilized through commercial capital. Examples like conservation easements show that success occurs when commercial capital is combined with public sector fiscal incentives.

This review has highlighted three main avenues for seeking and obtaining preferred finance to the ILM initiatives; soft loans from development banks, flexible finance from impact investment funds /green capital sources, and tax /subsidies from various country specific fiscal instruments. All three can be utilised together (if available in a specific country) or can be obtained individually as per the requirements or business plan of an ILM initiative. In all three sources of 'soft finance' for the ILM initiatives, the instances of successes are seen where private sector participation is visible, where

enterprises operating with predominantly commercial objectives are leading. In many of the preferred finance initiatives, non-profit organisations also play a role as facilitators or bridging institutions to ensure the effectiveness of the enterprising actions.

Finally, it is important to mention here that not many finance products are available yet that are specifically designed for ILM initiatives at a landscape level. Generally, those finance mechanisms are designed for specific or single sector-based interventions (e.g. focused on agriculture sector or forestry sector only) rather than multi-sector contexts more typical of landscape initiatives.

### **7. Stacking up and coordinating mechanisms to scale up incentives**

Across a landscape there may be multiple environmental and social services for which incentives may be sought to achieve the aim of integrated land management. Thus, multiple mechanisms can be combined to achieve complementary goals. They can also be combined to increase the level of funds providing incentives for land managers and owners across the landscape to change their practices toward greater sustainability and thereby achieve positive synergies and feedback processes. Examples of these coordinated, multiple mechanisms on the ground (intentional coordination between multiple market and incentive-based mechanisms) are fairly limited in number and tend only to be in the early stages of implementation, but initial lessons emerging to date may be instructive.

As part of this study four case studies were chosen to understand the relationships between the different mechanisms being implemented within a landscape and the effectiveness of those mechanisms to date. Often different mechanisms were being implemented within a single landscape:

- 1) Alto Mayo Protected Forest, Peru where Conservation International, together with local partners, has established REDD+ financing that supports conservation agreements with land-users to restrict deforestation and implement sustainable agricultural production practices.
- 2) Maasai Steppe, Tanzania where African Wildlife Foundation have facilitated land management agreements that combine payments to communities from wildlife tourism in exchange for protection of wildlife habitat with development of sustainable livestock management and marketing.
- 3) Forest Society of Maine, a land trust that manages conservation easements bought from private land-owners. Conservation easements place some restrictions on land-use but facilitate income from sustainable forest management and recreational tourism.
- 4) Sustainable certification of cocoa in Sulawesi by Rainforest Alliance in partnership with cocoa traders, chocolate manufacturers and local authorities seeking to conserve biodiversity within the landscape through sustainable agriculture production practices.

Table 1 presents an overview of the case studies reviewed.

Table 1: Case studies reviewed

	Maine Forests	AWF Tanzania	CI Peru	RA Sulawesi
Landscape Profile and Challenges	Predominantly private landownership; conservation challenge in a forest-based economy.	Maasai Steppe 22,000km <sup>2</sup> . Balancing wildlife conservation and restoration, and agro-pastoralist livelihoods and activities.	Alto Mayo Protected Forest 350,000 ha. Deforestation driven by economic activities of illegal settlers and forest conservation.	Bantaeng Regency, Sulawesi, 400 km <sup>2</sup> . Expansion of cocoa production contributing to loss of tropical biodiversity.
Landscape Approach and Mechanisms Implemented	Conservation easement as a commercial transaction for retaining the 'non-developed' status of lands; federal, state and private finances to support easements.	Land-use management agreements as frameworks for integrated ecotourism, wildlife, and livestock business activities.	REDD+ funding from carbon credit sales funding Conservation Agreements to promote sustainable land use practices.	IFC BACP program funding sustainable sourcing - diversified farming systems and voluntary cocoa certification.
Effectiveness and Sustainability	Land trusts play role as buyers of eased lands, and as stewards and facilitators for effective implementation; impact is seen in forest growth; sustainability depends on effective stewardship by land trusts, and availability of public finances and regulatory support.	Community-based governance and economic benefit sharing agreements in place. Further monitoring required to assess longer-term sustainability.	Positive results from 3-year review. More in-depth studies to follow. Long-term commitments from international companies to purchase REDD credits.	Capacity building ongoing, certification to follow 2014/5. Important local and international partnerships developed to design complementary programs.

## 8. Application of multiple mechanisms within a landscape

Multiple market and incentive-based mechanisms may be employed simultaneously or in a sequenced fashion. An example of the former can be found in the United States, in which three of the four types of mechanism can be found – conservation easements (direct payments for ecosystem services), lower taxes (preferential finance, and sustainable timber production and recreational use (sustainable production/sourcing) have all been combined together. The Forest Society of Maine Land Trust makes direct payments to landowners and also enables land-owners to benefit from lower income and estate tax levels when they enter into a conservation easement. The easements also allow and may indirectly support sustainable timber production and recreational tourism. In this case, 95% of easement lands held by the trust are managed forests, where the landowner provides a sustainable supply of wood products harvested from their lands over the long term.

In Tanzania a second case of simultaneous, coordinated market and incentive-based mechanisms can be found. Implemented in the Maasai Steppes, forms of conservation agreements have been developed, combining different mechanisms including direct payments to communities from income generated by wildlife tourism (ecotourism), and supporting sustainable livestock production (sustainable production); again, potentially developing a package that generates the benefits sought by wider society while enabling land owners or users to develop sustainable and compatible sources of income.

Although limited, there are also examples of the sequenced use of market and incentive-based mechanisms. In these cases, which funds generated from the successful implementation of one mechanism can be used to establish another, potentially achieving synergies in terms of desired landscape goals. For example, the REDD+ project in Peru, facilitated by Conservation International, based around the Alto Mayo Protected Forest, is generating funds from the sale of carbon credits to an international company (offsetting of environmental impacts). A second mechanism has been established which channels these funds into conservation agreements (direct payments for ecosystem services) with local farmers not to fell trees or exploit wildlife who in return receive technical services and inputs for sustainable coffee production and similar activities. The aim of this sequencing by Conservation International is to conserve the forest and its wildlife, while meeting the needs of farmers for more sustainable livelihood from coffee production.

## 9. Potential strengths of market and incentive-based mechanisms

Market and incentive-based mechanisms offer the potential for increased opportunity for rural inhabitants in key landscapes to develop and promote multiple income earning opportunities that blend existing and new livelihood possibilities. If there is adequate earning potential, then this may increase the incentive to collaborate with environmental conservation objectives that otherwise may be viewed as barriers to earning a livelihood.

Within the case studies reviewed here, the mechanisms rarely had *explicit* landscape components, although the broader process within which they were being implemented did have multi-stakeholder participation and landscape objectives. Market and incentive-based mechanisms by design are “contracts” between two parties, and thus of themselves do not generally facilitate broad stakeholder participation. Thus, elements of multi-stakeholder participation and democratic processes form part of the broader enabling environment in a specific context and in some cases the adaptation of the mechanism in as far as that is allowed. However, examples are emerging of multi-stakeholder

participation at the landscape level, for instance as evidenced in ecotourism and land management agreements in Maasai Steppe and other parts of East Africa. For example, Sustainability standards are designed to evaluate and induce changes in management at the farm level. Rainforest Alliance in Sulawesi sought the engagement of local authorities to agree on the certification of a many producers as a way of increasing sustainability over the longer-term, although it has taken longer than working through individual producer organizations or traders as is done elsewhere. In the Alto Mayo Conservation Initiative, the engagement with local authorities to improve local services was not a required part of a REDD project, nor of the conservation agreements, but this greater involvement of a broader range of local stakeholders and actors is what makes the process a landscape initiative.

These mechanisms also provide an opportunity to engage large-scale private sector actors in ILM, where they see either business opportunities or business cases for investing and collaboration, for example cocoa traders in Sulawesi who committed to buying the certified cocoa. Environmental issues are increasingly on the agenda of international (and local) business and therefore using market mechanisms can present opportunities for new funding and partnerships working to sustain ecosystem services.

Conservation initiatives may gain wider prominence on international commodity markets and greater exposure to potential consumers and the wider public. In some cases, products produced in areas that need to be conserved (e.g. coffee and cocoa) are sold on international commodity markets and this can increase the exposure of conservation projects helping them to attract further funding and partnerships.

In summary the strengths of market-based mechanisms (Figure 1) include.

- a. **Catalyzing sourcing of finance for the landscape initiatives:** Market and incentive-based mechanisms can help secure funding for the landscape initiatives for restoration of ecological values, compensation for biodiversity loss and /or economic development for natural resource dependent communities which would not have been possible without the mechanisms in place.
- b. **Defining the rules of transaction:** in which quasi-commercial market transactions of either a land parcel (Maine) or carbon stock (Alto Mayo - Peru) or conservation agreement (Maasai Steppe, Tanzania) takes places that establishes the terms of the transaction and ensures they will be honored.
- c. **Development of institutional relations to administer the market or incentive-based mechanism:** involving relevant stakeholders including the primary beneficiaries into the governance framework of the initiative. In the AWF case, for example, conservation agreements are designed and governed by two community-based institutions.
- d. **Enable private sector participation:** bringing to bear both the reach and financial capacity, and the standards and efficiency and effectiveness of the private sector. For example, in Maine, greater areas of land were brought under conservation management through engagement with the private sector than public intervention alone could have achieved.
- e. **Opportunities for stacking or combinations of mechanisms: both in terms of one mechanism** For example, a conservation easement leading to the use of another market mechanism (forest sustainability certifications) as is seen in the Maine case and also generating income from one market (carbon credits) to help fund improvements towards increasing incomes from other markets (e.g. the coffee sector) as was seen in the CI Peru case.

## 10. Challenges in implementation

Integrated Landscape Management (ILM) requires the participation of diverse groups of stakeholders between whom the rules for implementation of market or incentive-based mechanisms need to be negotiated. This can be a complex task, particularly where there are already conflicts over resources, and requires high levels of coordination, skills in facilitating such processes and support for less powerful groups in situations of unequal power relations. In the Alto Mayo Protected Forest in Peru, Conservation International and local NGOs had to negotiate the rules for providing incentives to farmers (illegal settlers) to stop deforestation with national authorities, while the farmers' presence in the forest was illegal. In the Maasai Steppe of Tanzania the African Wildlife Foundation served to negotiate between the National Parks Authority, NGO's and local communities the rules for establishing a Land Conservation Trust that conserved both wildlife and local livelihoods. Scaling up processes to other landscapes will require re-negotiation of the specifics of the mechanisms with new stakeholders, for example in the Maasai Steppe each land management agreement (a type of conservation agreement) had to be negotiated to meet the specific interests of the actors involved.

Where positive results have been achieved, replication in other landscapes is not a straightforward task. This is because each landscape, stakeholder groups, issues and processes are unique, and each mechanism is adapted to this set of circumstances. Although some mechanisms have existed for more than a decade, their complex nature and the long-time frame for achieving outcomes means that all mechanisms are in a process of continual evaluation and adaptation. This has been seen in various evaluations of wetland and biodiversity offsetting in the USA (Bull et al, 2013).<sup>4</sup>

It is not easy for schemes to become purely market-based. Many require significant public or donor support and subsidies to become established and to be sustained over time. All mechanisms require either kick-start investment from public or non-commercial finance to establish an environment in which market or incentive-based finance can operate. There is a limitation that in some cases non-market based financial support will need to continue indefinitely which brings into question the sustainability of some initiatives and indeed their 'market' title. For example, the conservation easements in Maine are largely financed by state and federal funds.

Without an enabling environment of institutions, frameworks and regulations which support ILM goals and in which market or incentive-based mechanisms can then operate market-based mechanisms cannot function. It is usually the case that such conditions are not in place in developing countries and non-market funding is needed. For example, in Alto Mayo in Peru donated funds were necessary to develop the documentation for the REDD+ project.

There is also a risk of market distortion in the longer-term if market or incentive-based mechanisms are not managed appropriately. For example, easements could be sold off to government by land trusts in lieu of profit margins which may defeat the very purpose of easements (to ensure conservation on private lands). Moreover, this can create disincentives to private land-owners to enter easements if they think it may lead to a public takeover of their land.

While all mechanisms are related to ecosystem services, few have explicit landscape-scale goals, although they may be implemented at a landscape-level (e.g. REDD+ or conservation easements). Some consider landscape level processes under the concept of "leakage", in the case of carbon offsets,

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<sup>4</sup> Bull, J.W., Suttle, K.B., Gordon, A., Singh, N.J., Milner-Gulland, E.J. (2013) 'Biodiversity offsets in theory and practice'. *Fauna & Flora International*, Oryx doi:10.1017/S003060531200172X

for example, whether the actions being undertaken to sequester carbon in one area are displacing actions that emit carbon to areas outside the project site. This concept is highly developed under the different carbon credit mechanisms (CDM, VSC, REDD). In general, many mechanisms have standards that ensure there are limited negative environmental or social externalities, or may even recognize if there are positive benefits (such as under the Climate, Community, and Biodiversity Standard, or most of the voluntary sustainability commodity standards).

Market and incentive-based mechanisms operate on varying timescales, but generally these are long-term, for example compared to many development projects.

- Carbon sequestration commitments should be for at least 20 years.
- Biodiversity offsetting should last until the original biodiversity which has been lost is restored, which in most cases means permanently.
- Conservation easements place restrictions on use of land in the US that become part of the permanent legal conditions of ownership.

The main exception to this rule is voluntary sustainability standards which can be entered or left from one year to the next (at least in some cases) although this is not the intention of the standard bodies. The investments required to achieve compliance mean land-owners only do this if expected benefits fail to materialize.

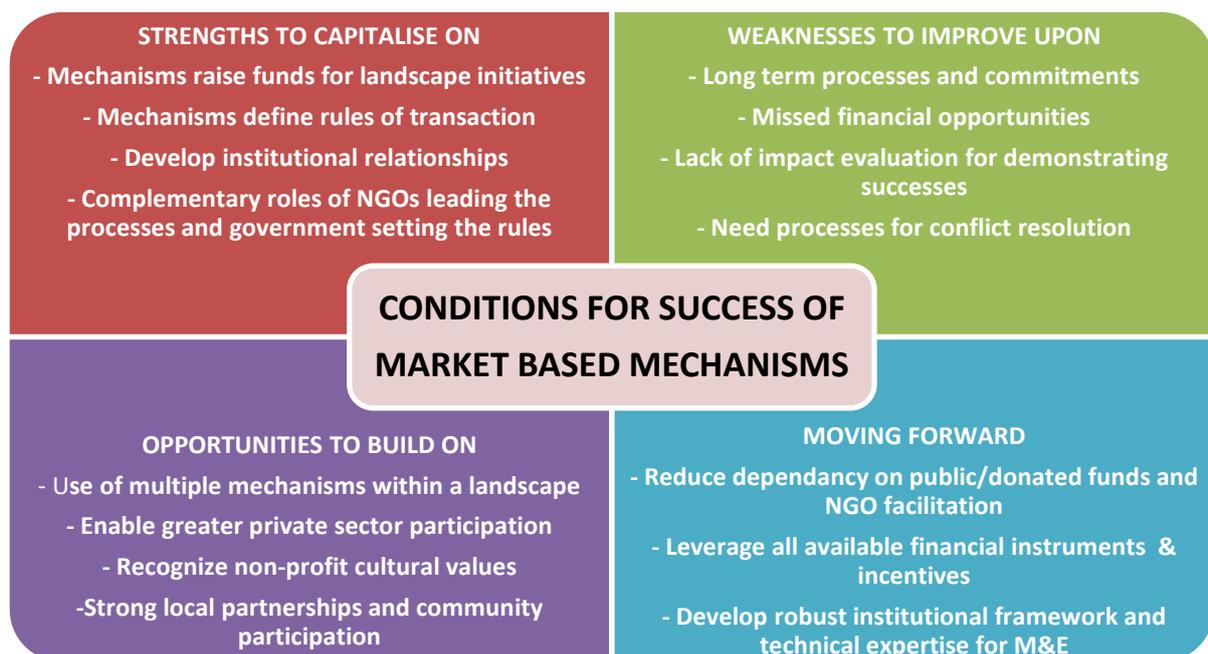


Figure 1. Summary of strengths, weaknesses, opportunities and future potential of market-based mechanisms

### 11. Conditions and strategies for success

The development of strong local partnerships is important for making market or incentive-based mechanisms more effective. As observed in all case studies reviewed, designing projects in consultation and contract with locally based institutions is important. Examples include universities,

community groups, local government bodies and forest managers. Community involvement through participatory planning is critical ethically and instrumentally, it can be crucial in easing tensions in the governance of landscape scale schemes that comprise various communities, and for generating scale by involving larger numbers of the population.

Where possible, potential conflicts should be foreseen, and avoidance mechanisms created. Continuous periodic assessments can be useful to track tensions and understand the causes, before they become crises. This kind of brokerage and facilitation requires skill and resources. Critically, such approaches require a good understanding of the power relations involved, of the motivations, and incentives of different stakeholders and for identifying possible common ground. Especial support is needed to enable those with less influence and power to participate and have appropriate influence in decision-making.

Public policy support is critical, but it should not create excessive bureaucratic hurdles for market or incentive-based mechanisms. A streamlined process of management is possible through better relationship management and coordination between stakeholders to ensure common understanding and expectations. This is even more important as achieving success in market or incentive-based mechanisms takes time and requires patience from the stakeholders involved (such as the three-year negotiation and verification period for conservation easements in Maine). Overall, it is necessary to be flexible in designing the specific conditions of mechanisms as seen by the various land management agreements used in the Maasai Steppes of Tanzania. Nevertheless, simplification and harmonization of regulations in a landscape can facilitate speedier implementation.

Many examples reviewed rely on a public policy 'push' and supporting regulation, while being market-led or mediated. For example, an enabling policy environment was found in the forest legacy program of the United States where Federal and State funds were established to support conservation easements of forest land. Fiscal incentives and regulatory requirements are important for a market or incentive-based mechanism to achieve scale, such as the fiscal incentives for conservation easement in the United States.

Strong leadership can facilitate success. In the cases reviewed, the initiatives were driven by international NGOs focusing on specific services from landscapes based on environmental values. Although the development of these initiatives was conducted in alliance with local and national governments, the latter did not take the lead, instead it was the NGOs who largely adapted and managed the mechanisms within the landscapes. However, this is not always the case: both Mexico and Costa Rica have national Payment for Environmental Service schemes (Sanchez-Azofeifa et al 2007).<sup>5</sup> These schemes have a national reach, but priority is given to certain landscapes of greater conservation priority for payments, for instance, the different landscape conservation areas of Costa Rica. Elsewhere, in India the National Bank for Agriculture and Rural Development is providing finance for natural resource management.

None of the case studies reviewed included initiatives led by the private sector. Nonetheless, the private sector has a key role in making market or incentive-based mechanisms operational. Private sector actors need to be on board in understanding and appreciating the medium to long term benefits (economic and ecological) from the initiative. There also needs to be widespread support from the

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<sup>5</sup> Sanchez-Azofeifa GA, Pfaff A, Robalino JA, Boomhower JP (2007) Costa Rica's Payment for Environmental Services Program: Intention, Implementation, and Impact. *Conservation Biology* 21 1165-1173

public that can serve to drive forward corporate initiatives as a push to companies to get involved on issues where public opinion is hugely supportive. For example, sustainability standards and certified producers depend upon consumers and businesses in consumer markets committing to sustainably produced and certified commodities.

Stable and diverse sources of finance are important, such as soft loans from development banks, flexible finance from impact funds or green capital sources and taxes or subsidies from various country specific fiscal instruments. Further, in some cases funds from philanthropic sources have been used and could be further leveraged. These can be used alone or in combination, but few to date have actually used the full range of potential new funding opportunities.<sup>6</sup> This is possibly because these finance mechanisms are not designed for multisector contexts, instead they are often targeted at specific or single sector-based interventions.

While some initiatives for ILM use finance mainly from public funds (fiscal incentives and instruments) and others use private money, a combination of both public sector fiscal incentives and private capital can provide stability and greater visibility. Securing pre-finance from the private sector can help to kick-start projects. This was the case in the Alto Mayo case study where carbon credits were sold in advance of their availability through a long-term agreement with a commercial partner, which combined with donated funds allowed the documentation and verification of the REDD project.

The case studies reviewed have highlighted examples of developing partnerships with large-scale international companies who are willing to invest in landscapes where a business case or long-term benefit is determined. This has been evidenced in the REDD+ Peru and Sulawesi cocoa case studies where the projects would not be happening without such international corporate commitments. The challenge is to increase such instances and maintain strong incentives, business cases, and policies to retain long-term interests of the international private sector in conserving natural resources and ecosystem services at landscape scales.

A supportive legal framework is important for enabling an effective implementation of a market or incentive-based mechanism because compliance with the rules becomes more likely. In general, legally binding instruments such as conservation easements (even though participation is voluntary) can persuade private parties to participate in ecological interests so long as changes in land prices or other market forces do not alter the mechanisms being deployed. Governments which can offer legal protection are more successful in removing entry barriers and improving participation from national and international players in implementing the market or incentive-based mechanisms.

Non-market values manifest themselves in the support that the public and specific stakeholders provide to market and incentive-based mechanisms and the ILM goals. It may be important to local or distant people that certain landscapes are protected, especially evidenced in the approval of public support for conservation easements in Maine. Local people may be keen to see public spaces for their recreation sustained and may also have spiritual, cultural and religious connections to the land. Understanding notions of territory, for instance, how a shared identity may be constructed around a specific physical space should be taken into account rather than focusing purely on ecological

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<sup>6</sup> Potential sources of finance for ILM – soft loans from development finance institutions (e.g. NABARD in India, CDC in UK which provide debt and equity funds to enterprises in Africa and South Asia), impact funds like Truestone impact investment management in the UK, social enterprise funds like The Social Enterprise Loan Funds (TSELF) in UK, Multi-lateral funds like Biocarbon Fund and Green Bonds from World Bank, national level funds forestry, agriculture and water sectors.

delineations or the physical boundaries set down by administrative borders. Local or distant groups may place high non-financial values on the natural beauty of a place.

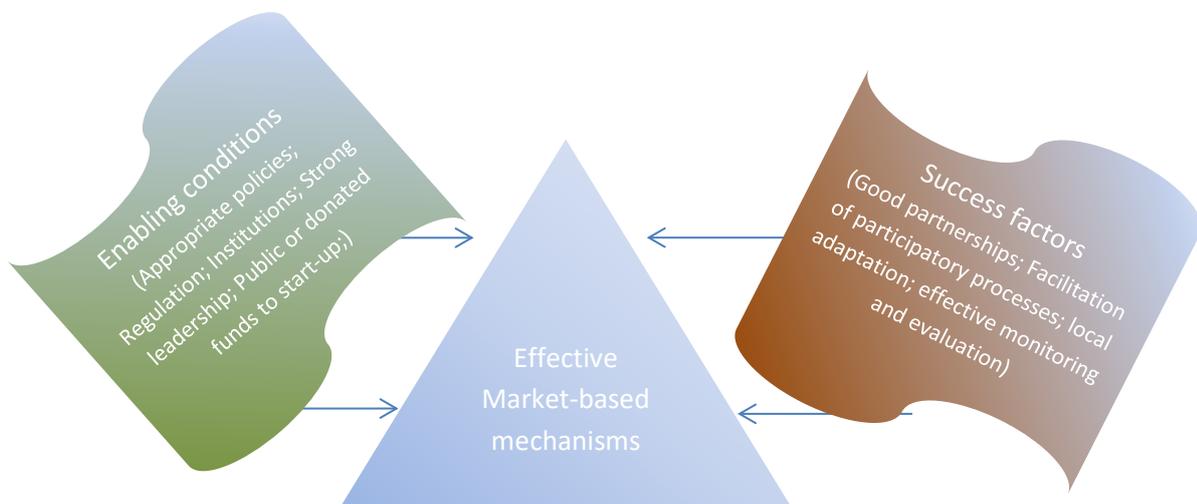


Figure 2: Potential pre-requisites for effective market-based mechanisms

## 12. Knowledge gaps and research priorities

The purpose of this review was to distil lessons for potential opportunities and challenges associated with market and incentive-based mechanisms. The literature review and case studies conducted for this study find many initiatives are in an early stage of implementation. Therefore, it is difficult to draw definitive statements about how effective they can be in achieving ILM goals. There are several significant knowledge gaps, particularly in relation to monitoring and evaluation that require more attention in the immediate future and more in-depth field study.

### a. Development of more evidence on what works and how.

Although there is quite extensive literature on market and incentive-based mechanisms there is still a lack of independent and rigorous evaluation on their effectiveness and of their impacts. This is due to the complexity and necessary processes of adaptation of many mechanisms and the long-term nature of the likely impacts of most mechanisms. In some cases, there is a lack of publicly available documentation and the details of specific agreements may be confidential. More research needs to be done to understand the changes achieved at a landscape scale (given that some environmental effects vary at different scales). The evaluations that do exist generally focus on the mechanism itself, without assessing impact at broader spatial and temporal scales and the wider set of stakeholders.

### b. Analyzing interactions between mechanisms and any catalytic effects on the local economy.

Market or incentive-based mechanisms can be implemented in parallel without any intentional coordination or can be intentionally coordinated by intermediaries either simultaneously or in sequence. Conservation easements, recreational tourism and sustainability certification have been combined, for example, and may also boost the local natural resource-based economy in general.

However, the specific interactions and factors supporting synergies (e.g. cost reductions, overlapping benefits in stakeholder education) have not been extensively researched. The extent to which market or incentive-based mechanisms benefit the wider natural resource-based economy through multiplier effects also merits more analysis.

**c. Channeling sector-based finance into Integrated Landscape Management (ILM)**

While ILM is inherently multi-sectoral covering forestry, biodiversity, climate change, natural resource management, agriculture, watersheds, water resource development, value chains, and eco-tourism, most of the financing associated with these mechanisms is focused on specific services or sectors. Many sector-based finance instruments (such as those for agriculture, forestry, social enterprise, impact funds, and green climate finance) need to be better tailored for the specific needs of landowners of ILM initiatives. The adaptation of suitable finance products which could be sourced by ILM projects would require greater interactions between these two sectors.

**d. Impact studies and learning from market and incentive-based mechanisms for ILM**

In view of the relatively early stages of implementation of the majority, there is limited evaluative material from which to identify patterns in terms of what works, beyond the lessons drawn here. Monitoring and evaluation is needed to test the assumptions underpinning the theories of change for the different market and incentive-based mechanisms in relation to their own objectives and also their contribution to landscape effects, and to inform and improve practice. However, extensive baseline and on-going data collection can be expensive and can consume a substantial part of the funds of the initiative. Nevertheless, monitoring and evaluation is a necessary investment to ensure legitimacy of the process and to improve it over time.

Annex 1: Detailed typology of market-based mechanisms

Market Mechanism	Target Ecosystem Service	Scale and Actors	Funding scale / (source)	Drivers for change	Implementation status (maturity)
<b>Offsetting environmental impacts</b>					
<b>Clean Development Mechanism (CDM)</b> (Mandatory)	C stock	Global in scale. Buyers include governments, carbon funds, and investors.  Sellers include landowners and project developers.	Over US\$200bn from credits (mostly public)	GHG emissions, climate change, deforestation	Over 4500 projects implemented since late 1990s.  Challenges regarding supply and demand as modest mitigation targets are reached.
<b>Voluntary Carbon Markets (VCM)</b> (Voluntary)	C stock	Trading volumes and scale are much lower compared to the compliance market. Land managers and owners receive compensation from private companies.	Approx. US\$500m (mostly private)	GHG emissions, climate change, deforestation	Numerous small-scale projects and pilot initiatives implemented. Consistent and independent verification mechanisms not in place.
<b>REDD+</b> Reducing Emissions from Deforestation and forest Degradation (Voluntary)	Forest carbon stocks and associated services	Global scale. Generally, government to government. Some pilots are financed under Voluntary Carbon Markets	US\$4.5bn committed (public)	Deforestation, water protection, population growth.	Pilot projects being implemented.
<b>Watershed offsetting</b> (regulated sometime mandatory)	Wetlands / waterways	Tend to be local, national projects. Sellers, e.g. landowners, buyers, e.g. property developers.	Over US\$2bn (public, private)	Loss or damage to waterways, streams, etc.	Numerous evaluation assessments carried out in US since the 1990s. Many states and cities have now published strategies.
<b>Biodiversity offsetting</b> (Mandatory and voluntary)	Wetlands  Natural habitats	Tend to be local, national projects. Private sector companies pay farmers for mitigation.	Limited to date (private)	Loss or damage to wetlands, natural habitats	Small-scale pilots, e.g. through Business and Biodiversity Offsets Programme (BBOP) and Lasting Initiative for Earth (LIFE) standards.

Market Mechanism	Target Ecosystem Service	Scale and Actors	Funding scale / (source)	Drivers for change	Implementation status (maturity)
<b>Direct Payments for Specific Ecosystem Services</b>					
<b>PWS</b>  (Mandatory and voluntary)	Wetlands/ waterways	Tend to be local, national projects. Funded by governments, sometimes private sector.	Over US\$8bn (public)	Flood protection, water quality	205+ programs -over 50% China & USA. Some well-known private sector examples, e.g. Vittel.
<b>Conservation Contracts and easements</b>	Biodiversity (on private owned, not public land)	Tend to be local, national projects. Sellers, e.g. landowners, buyers, e.g. property developers.	E.g. USA multi US\$m programs; Costa Rica's national PES program (PSA) US\$10m/annum	Loss of biodiversity and species in danger of extinction.	Annual US Federal & State projects. Monitoring since mid-1990s. Costa Rica, national program since early 2000s, monitored by forestry body.
<b>Sustainable value chains and sourcing</b>					
<b>Voluntary Sustainability Standards</b>	All ES plus social benefits	Generally world-wide, some are commodity or company specific. Mostly privately defined and managed, though some are government e.g. national organic standards	\$34bn	Consumer demand for sustainable products	Up 1- 20% of supply of some major tropical commodities
<b>Ecotourism</b>	Mostly cultural ecosystem services	Worldwide but diffuse, many private initiatives of varying scale. Some countries is significant government income from entrance to protected areas	Wildlife tourism in Africa estimated at over \$3 billion	Consumer desire to benefit communities and environment	Diverse and growing sector
<b>Preferential Finance</b>					
<b>Soft loans for sustainable agriculture /NRM</b>	Wastelands, watersheds, Forest, Landscapes with sustainable agriculture, in-land fisheries	National /country specific initiatives funded through agriculture/rural development banks with support from international development banks	54 Million Euro in India; US\$57 million loan-based project in Philippines	Conserving and managing the coastal, forest, soil, water, mineral, and biodiversity resources in specific country context, while augmenting natural resource-based livelihoods	Both these initiatives in India and Philippines are under strong implementation since 2007; India example is in second scaled up phase now.

Market Mechanism	Target Ecosystem Service	Scale and Actors	Funding scale / (source)	Drivers for change	Implementation status (maturity)
<b>Social Enterprises utilising finance from Impact funds and Green Financing channels (including investment screens)</b>	Sustainable agriculture, Forests, Renewable energy and Water	Both national and global impact and green investors involved with largely local or national level social enterprises	Impact investing can be \$500 billion in assets by 2020 (Monitor group); UNFCCC Green Climate Fund - US\$30 billion for the period 2010-12	Green and impact investing recognizes the value of the environment and its natural capital and seeks to improve human well-being and social equity while improving ecological integrity	Many examples of on-going large-scale implementation in different countries (research needed to establish impact of these initiatives)
<b>Fiscal incentives – property rate exclusions, taxes and subsidies</b>	Biodiversity, Forests, Soil and Water	Largely country specific initiatives for advancing the cause of conservation through regulation, involving private sector companies by providing them an incentive for conservation	Ecological VAT & ecological fiscal transfers in Brazil, Coal tax in India, Fiscal instruments in EU and USA, Biodiversity fiscal incentives in South Africa	Fiscal instruments are cost effective means to promote complementary and multiple objectives of landscapes	Many initiatives in different countries under implementation; evidence base is a gap in knowledge currently in establishing their impact