

The Little Forest Finance Book

14 catalysts to scale up
forest-friendly finance





The GCP is a tropical forest think-tank, working to demonstrate the scientific, political and business case for safeguarding forests as natural capital that underpins water, food, energy, health and climate security for all.

We work through our international networks – of forest communities, science pioneers, policymakers and corporate leaders – to gather evidence, spark insight, and catalyse action to halt forest loss and improve human livelihoods dependent on forests.

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We are continually aiming to improve the Little Forest Finance Book and your feedback is welcome.

Please send comments to Nick Oakes
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DR. BRAULIO FERREIRA DE SOUZA DIAS

EXECUTIVE SECRETARY OF THE CONVENTION ON BIOLOGICAL DIVERSITY

Forests contain an immense variety of life forms, which provide many vital services to human beings. They play significant economic, social, and cultural roles in the lives of about 1.6 billion people, especially those of indigenous and local communities. These benefits are under great pressure as humans are destroying forest biodiversity at an alarming rate. Each year 13 million hectares of forest are converted to other uses or lost through natural causes.

Forests offer much more than just timber. Along with food, fibre and other natural products, they provide the plants that are the basis of many traditional medicines and Western pharmaceuticals. They help to limit climate change by preventing vast amounts of carbon from reaching the atmosphere. Forests also regulate local temperatures, protect drinking water supplies and alleviate land degradation and desertification.

Over two thirds of all known terrestrial species live in forests. This great diversity of trees, plants, animals, fungi and micro-organisms, and the complex interactions among them, are what makes forests so valuable to humanity. Yet many human activities greatly weaken forests and reduce the services they provide to us. They include: the conversion of forests to agricultural land, overgrazing, unsustainable management, introduction of invasive alien species, infrastructure development, mining and oil exploitation, man-made fires, pollution and climate change.

Despite their intrinsic value and the great importance of forests to human wellbeing, the far-reaching consequences of forest loss are not adequately reflected in the levels of financing currently being spent on forests. The lack of sufficient financial resources for forests is one of the main obstacles to achieving the objectives of the Convention on Biological Diversity (CBD) and the forest-related Aichi Targets of its Strategic Plan for Biodiversity 2011- 2020.

The Conference of the Parties to the CBD (COP), at its ninth meeting, adopted a strategy to enhance international financial flows and domestic funding for biodiversity, including forests. As part of this strategy, COP 9 invited Parties to come forward with new and innovative financing mechanisms and requested the Executive Secretary to support the diffusion of such initiatives. Along the same lines, COP 10 continued support for improving the understanding of new and innovative financing mechanisms by encouraging Parties and relevant organisations to take active part in ongoing processes to enhance innovative biodiversity financing, and to engage in a global discussion on the need and possible modalities of innovative financing systems. Drawing on this discussion, COP 11 at its upcoming meeting in Hyderabad, India, in October 2012, is expected to consider concrete ways how to mobilize the financial resources needed to implement the Strategic Plan, including its forest-related Aichi Targets.

The Little Forest Finance Book is an excellent contribution to these discussions. The book analyzes in a clear and concise manner the various options for forest financing and presents case studies underway in developing countries. As such, it will be an indispensable tool, making forest financing options more accessible to all. For this reason, I wish the book a wide readership.

GREG COMBET

MINISTER FOR CLIMATE CHANGE AND ENERGY EFFICIENCY, AUSTRALIAN GOVERNMENT

Forests are an important part of the global environment, economy and society we know today. They provide essential natural resources and environmental services, including forest products, biological diversity and carbon storage. Forests not only support the livelihoods of local communities, they hold irreplaceable cultural and social significance. Despite their high value forests continue to be destroyed, resulting in a loss of biodiversity and economic opportunity as well as causing significant greenhouse gas emissions.

Sadly, past efforts to protect forests have failed to adequately slow deforestation. One obstacle has been the inability to secure sufficient investment for forest protection. We need to find new ways to finance forest conservation and improve management practices. This will enable us to protect forests on a global scale and dramatically reduce deforestation rates.

Reducing emissions from deforestation and forest degradation in developing countries (REDD+) is a mechanism that aims to provide the scale of finance required to change forest management practices in developing countries. It is estimated that the implementation of REDD+ will require financing of 17 to 33 billion US dollars annually if we are to halve forest emissions by 2020 (on 1990 levels). This level of financing cannot be met by public funding alone. We have to find a way to secure private sector investment for REDD+.

Carbon markets will play an important role in REDD+ financing. The development of markets for forest services, in particular for emission reductions credits, is expected to provide increased access to private sector finance for forests. While these markets develop, interim finance will be required to bridge the gap and support implementation. The proposed financing options will be analysed and assessed in this book.

For those seeking to support the development of REDD+ and protect the world's forest resources, this book will serve as a valuable tool. Its publication is particularly timely as options for forest finance are a key focus of 2012 Conference of Parties meetings to both the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change. On behalf of the Australian Government, I am pleased to support the publication of this book.

ACHIM STEINER

EXECUTIVE DIRECTOR, UNITED NATIONS ENVIRONMENT PROGRAMME

Tropical forests have received unprecedented political attention since December 2007 when it was globally agreed at the climate negotiations in Bali that developing countries could be compensated for their efforts to reduce emissions from deforestation and forest degradation (REDD+). The United Nations have responded to this challenge by forming the UN-REDD Programme, a unique partnership between the Food and Agriculture Organisation, the UN Development Programme, and the UN Environment Programme. The joint Programme supports developing countries to conserve, sustainably manage and restore the world's tropical forests in over 40 partner countries. UNEP's focus in this partnership is to assist countries capture multiple benefits from forests and to link REDD+ with wider sustainable development goals, through a transition towards an inclusive Green Economy. This includes support for developing sustainable land use planning and attracting related investments, with the aim to support developing countries' overarching need for economic and social development while ensuring food, water and energy security for a growing population. In many countries, forests will be at the heart of this transition towards a low-carbon, resource efficient economy, and The Little Forest Finance Book is a useful tool to provide governments and stakeholders with an overview of some of the available mechanisms for sustained investments into sustainable forest management, including the conservation of natural tropical forests and forest landscape restoration.

The most recent estimates of overall funding needs to achieve the objectives of REDD+ and the Aichi Biodiversity Targets in tropical forests are in the range of 40 billion USD per year. Despite current large investments by donor countries such as Norway we are not at the level of sustained investments that a transition to sustainable forest management and sustainable land-use would require. We therefore need stronger private sector and community engagement. There is growing interest from the private sector to invest, but we need to ensure, in particular for REDD+ investments, that these investments catalyze multiple benefits beyond carbon, in particular for biodiversity, jobs and for local livelihoods. The returns from these investments would be impressive. For example, IUCN estimates that we can expect net benefits of 85 billion USD every year for the restoration of fifteen per cent of degraded forest landscapes around the world. Most of these benefits would directly support the world's poor and underprivileged rural communities.

Ultimately the success of REDD+ and other efforts to save tropical forests will also depend on progress in sustainable production and sustainable consumption of key commodities. Investments into more efficient agriculture, and into sustainable consumption patterns will be important elements of a green economy transition to reach the one objective that we all share: to maintain the world's forests, for present and future generations.



ANDREW MITCHELL

FOUNDER AND DIRECTOR, GLOBAL CANOPY PROGRAMME

To pay the transition costs of stopping deforestation, making agriculture more efficient, restoring degraded lands and to maintain forest biodiversity and the ecosystem services it provides, will require financing in the scale of hundreds of billions USD. Yet, what is on offer today is in the tens of billions (Parker et al, 2012). Where will the stimulus come from to make this happen?

This book sets out 14 catalysts that can help deliver finance for forests and details how they can support projects of different kinds and at different scales. Accessing finance can seem a daunting process to many and we have set out to offer a simple yet comprehensive framework through which to understand where money comes from, how it is organized and what kinds of forest friendly activities can attract it.

Some involve the government paying out, some require national level policy changes, many could happen if the private sector changed practices voluntarily. Such change is already underway. The 2012 commitment by 50 major companies in the Consumer Goods Forum to become net deforestation free by 2020 is evidence.

There are so many new opportunities available, that no project should consider remaining dependent on tax-payer funded grants alone. Imaginative thinking will be needed, old dogmas must be cast aside, and robust safeguards will be required as a new era of forest finance is negotiated.

The global debate is moving from a nexus around carbon and atmosphere to one around water and food. Similarly, in forests it will extend from REDD (Reducing Emissions from Deforestation and Degradation) to a more holistic view of proactive investment in natural capital (PINC). Paying for the transition costs of moving away from business as usual towards greener supply chains could do much to reduce pressures on forests.

I sometimes feel that scaling up finance to reduce deforestation, conserve forests and improve the livelihoods of forest peoples at times seems as difficult as plucking a slippery eel from a swollen river. This is because a tsunami of financial interests, in large part driven by rising global demand for soft commodities, is using an unsustainable price signal that converts natural capital for free, to provide food, fibre, fodder and fuel for billions. Finance must become more accountable for its impacts on nature, and this will create opportunity for change.

The revolution that must now take place is to harness these same powerful forces of finance to create more sustainable and equitable outcomes for forests, their peoples and forest nations. The seeds of this revolution lie within these pages.

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INTRODUCTION

HOW DOES THIS BOOK HELP?

The Little Forest Finance Book's overarching aim is to catalyse an increase in the finance flowing towards forest-friendly development.

It is a reference for decision makers and project stakeholders within governments, NGOs, the private sector, and forest communities who want to understand where forest finance can be raised, how it can best be managed, and the types of activities that it enables.

It seeks to demystify the forest finance landscape, and presents a clear framework of realistic and widely applicable options for decision makers to catalyse further action and debate in this field.

It is grounded in reality rather than theory, and draws on numerous case studies to indicate emerging ideas, best practice, and innovative ways of thinking about forest finance for the future.

As a non-partisan analysis, the Little Forest Finance Book does not favour one proposal over another. We do hope, however, that our work will aid understanding and encourage collaborative dialogue on this vitally important area of research.



WHAT ARE TROPICAL FORESTS?

The Little Forest Finance Book focuses its attention on the finance flows for tropical forests and tropical forest ecosystems - the interdependent web of plant, animal, micro-organism and human communities that co-exist and interact within forested areas in the tropics¹. Tropical forest ecosystems are the world's most biologically diverse regions; they are estimated to cover approximately 7% of the earth's surface area, but contain around 50% of the world's biodiversity.

There is considerable debate surrounding globally appropriate definitions for forest areas (Sasaki, 2009). This book defines forests as areas with a minimum canopy cover of 40%, and the minimum height for a tree as 5m (Sasaki, 2009).

NATURAL CAPITAL AND ECOSYSTEM SERVICES

This publication refers to two additional concepts: natural capital and ecosystem services (ES). In general terms, 'capital' is defined as the stock of materials that exists within a system at any given time (Costanza et al., 1997). Some common forms of capital are financial capital, man-made capital and social capital. Natural capital is the stock of natural materials in an ecosystem. Natural capital provides a vital flow of ecosystem goods and services. Much as an investor will use financial capital to generate profits, a stock of trees or carbon from a forest will provide a future flow of timber or a climate regulation service. Ecosystem goods and services are functions of an ecosystem that directly or indirectly benefit human wellbeing (Daly and Farley, 2004; Voltaire and Royer, 2004).

WHY FOREST-FRIENDLY DEVELOPMENT?

The ecosystem services that tropical forests provide underpin climate, food, energy, water, health and livelihood security for millions of people across the globe (see page 18). Despite this, the rate of forest loss is still alarmingly high (FRA, 2010).

Direct investment in activities that maintain or increase the stock of natural capital held in tropical forests (e.g. conservation) can secure the provision of these ecosystem services. However, these activities often fail to address the underlying drivers of deforestation. Deforestation and forest degradation are linked to development; or to put it another way, to economic activity. It is therefore important to invest directly in activities that have a lesser impact on the forest, and can also provide economic benefits.

We define investments in activities that reduce the loss of, maintain or increase the natural capital within forests as supporting *forest-friendly development*.

This can help transition to a green economy with tropical forests at its heart, but rapid action is vital. One study estimates that the financing required to halve deforestation will increase dramatically over the current decade, reaching USD 30 billion annually by 2020 (The Commission on Climate and Tropical Forests, 2010). Current financial and policy frameworks do not adequately recognise the ecosystem services provided by tropical forests. Investments in forest-friendly development are currently dwarfed by the flow of finance to activities that cause unsustainable deforestation and forest degradation.

THE FOREST ECO-UTILITY

Tropical forests contain over half of the world's terrestrial biodiversity (The Royal Society, 2003) and act like a giant 'eco-utility' providing vital ecosystem services that underpin climate, water, food and energy security as well as human health and livelihoods from local to global scales. Policy and financial mechanisms are needed that recognise and reward the value of the ecosystem services that forests provide. The wellbeing and resilience of societies and economies will depend on our ability and success in maintaining a healthy and resilient tropical forest eco-utility.

CLIMATE SECURITY

Tropical rainforests have a double-cooling effect on the climate. Standing forests, without any human intervention, sequester vast quantities of carbon dioxide (CO₂) out of the atmosphere acting as a 'carbon sink'. This service removes about 15% of human CO₂ emissions from the atmosphere every year, equivalent to around 1 tonne of carbon dioxide (tCO₂) per hectare per year (Lewis et al., 2009; IPCC, 2007). Instead of rewarding this service, however, we are destroying it: tropical deforestation, including peatland loss, accounts for around 15% of our global CO₂ emissions (Van Der Werf et al., 2009) – almost as much as the entire global transport sector combined – and reduces the ability of tropical forests to sequester CO₂. Tropical forests also evaporate huge volumes of water that cool the earth's surface and create clouds that reflect sunlight back out to space (Betts et al., 2007; Bonan, 2008). Besides helping us to mitigate the effects of climate change, rainforests also increase our ability to adapt to its impacts.

Climate change is likely to increase the frequency of extreme events such as droughts and floods. Forests can reduce the incidence of flood events at local scales by slowing down

the passage of water over the land surface (van Dijk and Keenan, 2007). Forests also provide an essential buffer for local weather patterns since removing tree cover can result in greater extremes of temperature and rainfall thereby increasing the local impacts of climate change (Deo et al., 2009, Voltaire and Royer, 2004).

WATER SECURITY

Forests purify water and help to regulate water flows to downstream areas. Forests, especially forest soils, act like massive filters, purifying water as it drips through the forest ecosystem. This filtration service provides drinking water to over 60 million of the world's population who dwell in tropical rainforests and to some of the world's largest cities, at least one-third of which depend on forest protected areas for their water supply (Dudley and Stolton, 2003). The trunks and roots of forest ecosystems also act like a sponge, controlling the flow of surface and ground water into river systems, which helps to regulate cycles of flood and drought (Chivian, 2002). Furthermore, the recycling of water vapour by forests back into air currents helps to maintain rainfall regimes over vast areas. For example, much of the rainfall in the Andes that feeds glaciers and high-altitude populations has been recycled over lowland Amazonian forests (Poveda et al., 2008).

FOOD SECURITY

Forests underpin food production on local to global scales. Local communities and indigenous peoples have survived on food collected in tropical forests including wild meat, fruit and plants for thousands of years. For many rural populations tropical forests provide a fallback supply of food when personal, environmental, or economic crises occur. Small-scale farmers who clear land to grow food also depend on forests' ability to recycle nutrients and prevent soil erosion.

Many farmers also depend on forest insects such as bees to pollinate their crops (Ricketts et al., 2004) and as much as a third of fish caught each year in SE Asia depend on coastal mangrove forests (Hillel and Rosenzweig, 2008). At regional and continental scales, forests help to recycle water vapour that falls as rain in agricultural areas far from the forest border. In Amazonia, winds carry moisture recycled by the forest in 'flying rivers' down to the south of Brazil and beyond, supporting agricultural production in the South American breadbasket (Vera et al., 2006; Marengo et al., 2004).

ENERGY SECURITY

Tropical forests also support energy security at the local, regional and global levels. Local communities have sustainably used tropical forests as a source of fuel for cooking and heating for thousands of years. Currently, however, fuel wood collection is a major driver of deforestation, particularly in Africa and Southeast Asia (Griscom et al, 2009). Forests are also essential to the production of hydroelectricity through the regulation of water flow and the reduction of sedimentation in rivers at regional scales. For example, given that over two-thirds of Brazil's electricity supply is generated through hydroelectricity, any changes in forest cover - which would in turn affect rainfall patterns, surface run-off and sedimentation of dams - would have a significant impact on the energy security of this hydropower-dependant country.

HEALTH SECURITY

As well as providing a sustainable source of fresh food and clean drinking water, forests are an essential source of wild-harvested medicines for both local communities and global pharmaceutical companies. Trade in medicines and plants derived from tropical rainforests is estimated to be around USD

108 billion per year (Simula, 1999) – roughly equal to the amount spent on the UK's National Health Service each year. Undisturbed tropical forests can also have a moderating effect on infectious diseases: 40% of the world's population lives in malaria-infested regions and heavily deforested areas can see up to a 300-fold increase in the risk of malaria infection compared to areas of intact forest (Yasuoka and Levins, 2007). The commercial trade in bushmeat is also increasing human exposure to new diseases that are carried by wildlife and efforts to conserve areas of high biodiversity can reduce the likelihood of diseases such as SARS jumping from wildlife to humans (Jones et al., 2008).

LIVELIHOOD SECURITY

More than a billion of the world's poor depend on forests for some part of their livelihoods and food security and around 60 million indigenous people depend almost entirely on forests for their survival (World Bank, 2004). Tropical forests are one of the world's richest sources of natural capital, providing raw materials such as timber and wild food as well as non-timber forest products (NTFPs) including rubber, oils and fibres that are economically important both locally and nationally in many tropical forest countries. Forest activities such as sustainable forest management (SFM) and eco-tourism also provide significant employment opportunities for rural populations.

THE INTERNATIONAL CONTEXT

Forests and their sustainable use are central to the objectives of the United Nations Convention on Biological Diversity (CBD), the Framework Convention on Climate Change (UNFCCC) and the Convention on Combating Desertification (UNCCD)¹, established in 1992 at the UN Conference on Environment and Development in Rio de Janeiro. The decisions of the respective Conferences of the Parties (COP), and the UN Forum on Forests (UNFF) have repeatedly emphasised that a lack of finance is a primary obstacle to achieving their objectives. The following paragraphs discuss the key convention decisions related to finance and forests, and forest relevant actions and linkages between conventions.

UNFCCC

Forests are recognised within the convention text for their central role in climate change mitigation and adaptation. The UNFCCC directly addresses forests through work programmes on REDD+, land use, land-use change and forestry (LULUCF), and afforestation and reforestation projects under the clean development mechanism (CDM).

At COP 13 Parties agreed that enhanced action on the provision of financial resources was needed to meet the objectives of the Convention, including improved access to adequate, predictable and sustainable financial resources. The UNFCCC's Standing Committee assists the COP with the financial mechanism of the Convention. At COP 17, the Green Climate Fund (GCF) was designated as an operating entity of the financial mechanism of the Convention, the design of which will be concluded at COP18 in 2012. A work programme on long-term finance began in June 2012, discussing scaling-up climate finance beyond 2012.

CBD

The convention text requires Parties to provide financial support and incentives for national activities to achieve the objectives of the Convention, but recognises that a “special (finance) provision is required to meet the needs of developing countries”, and that developed country Parties should provide “new and additional financial resources” to enable developing country Parties to meet the costs of these actions.

At COP 9 in Bonn in 2008, Parties adopted a resource mobilisation strategy to enhance international financial flows and domestic funding for the protection of biodiversity, with the specific goal of exploring new and innovative financial mechanisms. At COP 10 in Nagoya in 2010, Parties agreed to adopt of a new ten year Strategic Plan for Biodiversity (2011-2020), which will address the underlying drivers of biodiversity loss (including the drivers of deforestation), and explore incentives to protect the benefits provided by well-functioning ecosystems. At COP 11 in India in 2012, CBD is expected to consider actions to mobilize the financial resources needed to implement the strategic plan, and its forest-related Aichi Targets (see page 24).

Forests are central to the National Biodiversity Strategies and Action Plans (NBSAPs) of CBD Parties. The CBD aims to complement REDD+ discussions and activities under the UNFCCC process, and is engaged with the Initiative for Tropical Forest Biodiversity of the International Tropical Timber Organization (ITTO), which facilitates financial and technical support for forest protection in developing countries.

1. Rio Convention secretariats collaborate on forests work through the Collaborative Partnership on Forests (CPF). CPF consists of 14 international organizations, bodies and convention secretariats that have substantial programmes on forests. www.cpfweb.org

UNCCD

Established in 1994, UNCCD is the sole legally binding international agreement linking environment and development to sustainable land management. Its core objective is to:

“Create a global partnership to reverse and prevent desertification/land degradation and to mitigate the effects of drought in affected areas in order to support poverty reduction and environmental sustainability.”

Forests are critical in preventing desertification and drought, and are a core theme within the UNCCD. The forest-related elements of the 10 year strategic plan of the UNCCD align with the CBD’s Aichi Targets, especially the 2nd and 3rd strategic objectives. There are also synergies between the National Action Programmes of the UNCCD with the NBSAPs of the CBD. Numerous synergies also exist with the work of the UNFCCC on climate change and the CBD on biodiversity protection and conservation. A Global Mechanism (GM) for the UNCCD has been established to increase the effectiveness of existing financial mechanisms and to increase financial resources directed to developing country Parties to the Convention (UNCCD, 2012).

UNFF

The work of the UNFF is based on the Rio Declaration, the Forest Principles, Chapter 11 of Agenda 21 and the outcomes of the Intergovernmental Panel on Forests (1995-1997) and the Intergovernmental Forum on Forests (1997-2000). The future work of the UNFF is guided by four shared Global Objectives on Forests. These objectives are to: (1) reverse the loss of forest cover worldwide through sustainable forest management (SFM); (2) enhance forest-based economic, social and environmental benefits; (3) increase the area of sustainably managed forests, and increase the proportion of products from sustainably managed forests; and (4) reverse the decline in official development assistance for SFM and mobilize new and additional financial resources for SFM.

In the seventh session of the UNFF in 2007, the Forum adopted the Non-Legally Binding Instrument (NBLI) on All Types of Forests. This is an international instrument for sustainable forest management that will facilitate international cooperation and national action to reduce deforestation, prevent forest degradation, promote sustainable livelihoods and reduce poverty for all forest-dependent peoples (UNFF, 2012).

AICHI TARGETS AND FORESTS

At the heart of the CBD's Strategic Plan for Biodiversity 2011 – 2020 are 20 targets collectively known as the Aichi Biodiversity Targets. The strategic plan is intended to catalyse a broader approach that addresses the underlying drivers of biodiversity loss (e.g. the drivers of deforestation), and incentives to protect the benefits provided by well-functioning ecosystems. These targets must be met by 2020 if the plan is to be realised. Several of the targets directly relate to forests (the forest cluster):

- Target 5 - The rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced
- Target 7 - All areas under forestry are managed sustainably, ensuring conservation of biodiversity
- Target 11 - At least 17 per cent of terrestrial and inland water areas are conserved
- Target 15 - Enhance the resilience and the contribution of biodiversity to carbon stocks through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification

These targets are interlinked and interdependent. Achieving target 5 (reducing forest loss from deforestation and degradation) is a prerequisite for making progress on target 7 (sustainable forest management). The forest element of target 11 (protected areas) is directly affected by progress under targets 5 and 7. Establishing the policy and governance

framework needed to reach target 11 will also contribute towards target 15 (forest landscape restoration). Addressing the drivers of deforestation and the forest cluster targets is predicated upon also achieving targets 1-4, which fall under Strategic Goal A (addressing the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society). The forest cluster targets are also linked with other UN global targets and initiatives, particularly UNFCCC and REDD+ (see page 20), and governmental incentives and regulations, such as the US Lacey Act (see page 136), the UK's timber procurement act and initiatives such as the Global Forest Trade Network.

Preliminary estimates of the resources required to meet the Aichi Biodiversity Targets have been undertaken as part of the work by the High-Level Panel on Global Assessment of Resources for Implementing the Strategic Plan for Biodiversity 2011-2020, co-sponsored by the governments of the United Kingdom (UK) and India. The High-Level Panel was established to contribute to the understanding of the global resources required for the Strategic Plan on Biodiversity 2011-2020 and to achieve the Aichi Biodiversity Targets. The initial findings of the Panel are not a precise or comprehensive assessment. The findings are a preliminary presentation of the range of actions and activities that would make a significant difference in delivery of the Aichi Biodiversity Targets, and include an estimate of the resources that would be required to undertake these actions and activities. The resource estimates for the forest-related targets overleaf should not be considered in isolation but in the context of the full report the Panel which is available as an information document for the eleventh Conference of the Parties to the Convention on Biological Diversity (UNEP/CBD/COP/11/INF/20).

	ACTIONS	UPFRONT (USD MILLION)	ANNUAL (USD MILLION)	CROSS-RELEVANCE TO OTHER TARGETS			
				5	7	11	15
TARGET 5	Biodiversity inventories	25			LOW	HIGH	HIGH
	Monitoring system	150	40		HIGH	HIGH	LOW
	Training and education of professional officers	20	50		HIGH	MED	LOW
	Law enforcement	300	300		HIGH	HIGH	HIGH
	Creation of financial incentives which counter illegality	10,000	10,000		HIGH	HIGH	MED
TARGET 7	Market correction, public procurement policies	290	36		MED		MED LOW
	Efficiency in processing	12,000	4,000		HIGH		MED LOW
	Fire management in vulnerable ecosystems	200	200		HIGH		HIGH MED
	Product creation (tourism, PES, carbon, ABS)	2,000	5,000		HIGH		MED MED
TARGET 11	Land tenure, legal processes, compensation for PA extension	55,455	4,000		HIGH	HIGH	
TARGET 15	Restoration site selection	100			MED	LOW	HIGH
	Seeds, nursery establishment, planting		5,000		MED	LOW	HIGH
	Assisted natural regeneration generation		938		MED	LOW	HIGH
	Site protection (wildlife, fires, livestock)		188		MED	LOW	HIGH
	Post-establishment weed control		281		MED	LOW	HIGH
	Total	81,000	30,000				

TABLE 1: PRELIMINARY FINDINGS FROM THE REPORT OF THE HIGH-LEVEL PANEL ON GLOBAL ASSESSMENT OF RESOURCES FOR IMPLEMENTING THE STRATEGIC PLAN FOR BIODIVERSITY 2011-2020

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Hardcastle, P. and Hagelberg, N., (2012) *Assessing the Financial Resources Needed to Implement the Strategic Plan for Biodiversity 2012-2020 and Achieve the Aichi Biodiversity Targets - Forest Cluster Report*



THE RIO CONVENTIONS: SYNERGIES FOR FORESTS

AICHI BIODIVERSITY TARGETS (CBD DECISION X/2)

TARGET 5: By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced

TARGET 7: By 2020, areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity

TARGET 11: By 2020, at least 17 per cent of terrestrial areas are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas

TARGET 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable

TARGET 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 percent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification

REDD-PLUS ELEMENTS (UNFCCC DECISION 1/CP.16)

- Reducing emissions from deforestation
- Reducing emissions from forest degradation
- Conservation of forest carbon stocks

- Sustainable management of forests
- Actions are to be consistent with conservation of natural forests and biological diversity and are to incentivize the protection and conservation of natural forests and their ecosystem services

- Conservation of forest carbon stocks
- REDD-plus activities should be consistent with the objective of environmental integrity and take into account the multiple functions of forests and other ecosystems

- Conservation of forest carbon stocks
- Enhancement of forest carbon stocks
- REDD-plus activities should promote and support full and effective participation of relevant stakeholders, in particular indigenous peoples and local communities

- Reducing emissions from deforestation
- Reducing emissions from forest degradation
- Conservation of forest carbon stocks

DESERTIFICATION, LAND DEGRADATION AND DROUGHT AND SUSTAINABLE FOREST MANAGEMENT (SFM) (UNCCD DECISION 4/CO P.8)

- Reinforce SFM as a means of preventing soil erosion and flooding, thus increasing the size of atmospheric carbon sinks and conserving ecosystems and biodiversity
- Strengthen the capacity of LFCCs to combat desertification, land degradation and deforestation

- Reinforce SFM as a means of preventing soil erosion and flooding, thus increasing the size of atmospheric carbon sinks and conserving ecosystems and biodiversity

- Reinforce SFM as a means of preventing soil erosion and flooding, thus increasing the size of atmospheric carbon sinks and conserving ecosystems and biodiversity
- Strengthen the capacity of LFCCs to combat desertification, land degradation and deforestation

- Strengthen SFM and integrated water management to maintain ecosystem services in affected areas, prevent soil erosion and flooding, increase the size of atmospheric carbon sinks, and conserve and sustainably use biodiversity

- Sustainable management of forests
- Enhancement of forest carbon stocks
- Strengthen SFM and integrated water management to maintain ecosystem services in affected areas, prevent soil erosion and flooding, increase the size of atmospheric carbon sinks, and conserve and sustainably use biodiversity

SOURCE: http://www.unccd.int/Lists/SiteDocumentLibrary/Publications/rio_20_forests_brochure.pdf



OVERARCHING FRAMEWORK

THE BUILDING BLOCKS OF FOREST FINANCE

In order to better understand the process of financing forest-friendly development, and how this can be supported by public and private sector organisations, a framework comprised of four basic elements is presented:

- **Capital:** How is finance raised to invest in forest activities?
- **Organisation:** Who manages the finance, and how is it used to fund forest-friendly activities?
- **Activity:** What economic activities are carried out that could affect forests and how do they generate revenue?
- **Catalysts:** How can forest-friendly enterprises be directly or indirectly supported by the public and private sectors?

The **first three elements** represent the framework for financing and running a forest project or enterprise. The **final element** explains how governments, or other intermediaries, can catalyse the flow of finance towards forest-friendly activities (see Figure 1).

MIX AND MATCH OPTIONS

This book is divided into four sections to correspond with the four elements shown above. Each section provides an analysis and summary of the various options that exist.

The proposals presented within one section potentially impose constraints on options in other sections. For example, a forest enterprise utilising a community-based organisation (under Organisation) would in most cases not use a bond to raise capital (under Capital). There is flexibility, however, and 'mix and match' options exist between the different elements. For example, receiving capital in the form of grants is feasible in many situations for most organisation types and forest activities, as long as they provide public benefits.

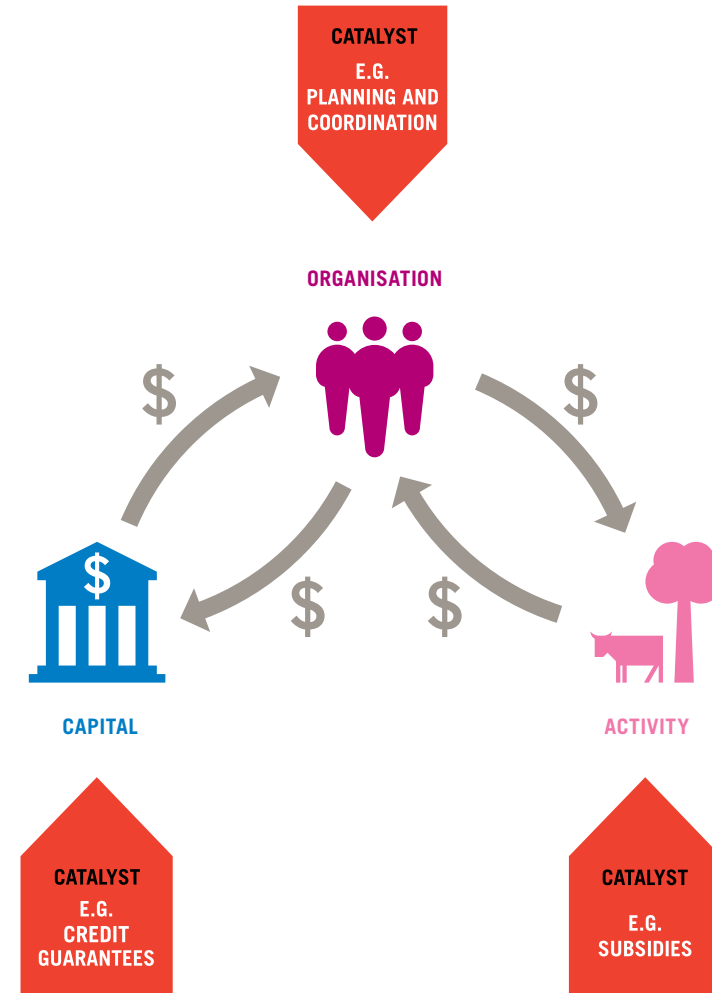


Figure 1: A framework for forest-friendly development.



CAPITAL

UNDERSTANDING CAPITAL

This section explores the different sources of capital for forest-friendly development. In theory, most capital sources are accessible for all types of organisations seeking finance for forest-friendly development. In practice, different sources of capital are better suited to different forest-friendly activities. The applicability of the source of capital is dependent on the types of organisations disbursing and receiving funds and the type of revenue-generating activity that is being pursued. For example, receiving a loan for a sustainable forest management project is likely to be more difficult for a non-governmental organisation that does not yet have guaranteed cash-flows than it would be for a private company with a well-established production line.

The majority of capital for forest-friendly activities is in the form of grants or balance sheet financing from the public sector. It is typically directed at non-revenue-generating activities, such as protected area management. In contrast, the majority of capital linked to deforestation or degradation is directed at revenue-generating activities that are not forest-friendly, despite the existence of forest-friendly revenue-generation activities. It is therefore important to link forest-friendly revenue-generation with the appropriate sources of capital. This chapter explains the different sources of capital, in order to help increase the access to, and availability of, capital for forest-friendly activities.

CAPITAL FRAMEWORK

CRITERIA

Each of the capital sources discussed in this chapter is assessed within a framework of three criteria, each of which is represented by a relevant icon. Many of the criteria are interrelated and have co-dependencies, which are explained in the text.

- **Risk-Return:** what is the risk and return typically associated with this type of capital?
- **Capacity:** what level of expertise is needed to secure the capital – is it in-house or out-of-house?
- **Exchange:** what is exchanged or given up by the organisation in order to attract this capital?

When assessing the characteristics of different sources of capital, it is difficult to avoid an element of subjectivity. The aim of this chapter is not to claim definitive and rigid characteristics for sources of capital (e.g. ‘all equity capital requires out of house capacity to secure investment’). The aim is to emphasise the key trends and traits that tend to characterise sources of capital, supported by the existing literature, in order to assess and compare the sources of capital and their flows of finance through forests.

The following pages provide an explanation of these criteria in relation to the principles outlined above and show how these criteria can be used to understand sources of capital that are relevant to forest-friendly development.



RISK-RETURN

The risk-return expectation of the investor that is providing capital for forest-friendly development.

Options: Zero, Low, Medium, High



A key consideration for an investor providing capital to a forest-friendly project is the risk associated with the repayment of finance. In some instances, such as for grants, repayment is not required. By definition, the risk-return is zero. Where repayment is required, an investor will typically expect a return that is more than their initial investment.



The return expected by the investor is closely linked to the risk of repayment. The greater the investor's perceived risk of repayment being less than promised, the greater the return an investor will expect to earn on their capital. Similarly, the lower the perceived risk of repayment, the lower the return expected by the investor. For this reason, risk and return are often used interchangeably.



The risk-return expectation also differs across sources of capital. Some sources of capital, such as loans, are characterised by having a higher priority in the recovery of their initial investments. These investors are typically risk-averse, and so will only make low risk investments and expect a low return. Others are willing to have relatively less priority over recovery of their investments (e.g. equity), and expect a high return.

The goal of the investor can also determine risk-return expectations. For example, a public sector investor may wish to make a relatively medium risk investment to encourage private investment by lowering the overall risk.

CAPACITY

The type and/or level of expertise needed to secure the source of capital.

Options: In-house, Out-of-house

A key consideration for the practitioner of forest-friendly development is the ease with which they can gain access to capital. The forest practitioner may be unaware they can access certain sources of capital, or they may feel the process is too cumbersome or bureaucratic. Here we assume that the ease of gaining access to a capital source can be judged by the type and/or level of expertise needed to secure funding. We use the tendency to source expertise in-house or out-of-house as a proxy for the level of expertise needed to secure finance.

In-house capacity means that the expertise needed to secure a given source of capital is typically found within an organisation. For example, securing finance from a public sector body may require the submission of internal documents to a budgetary commission. Alternatively, securing grant finance may require the submission of a project concept note and a brief budget plan, which can be produced internally.

Out-of-house means that the expertise needed to secure a given source of capital is typically found outside organisations pursuing forest-friendly activities. For example, securing finance from an equity investor may require external assistance from a specialist consultancy to ensure that adequate preparations are made before the investor carries out their due diligence. Securing finance from a bond investor will typically require the help of external organisations to structure the bond and find willing investors.



IN-HOUSE



OUT-OF-HOUSE



OWNERSHIP

EXCHANGE

A commitment to the investor in addition to any return on investment that they may be expecting.

Options: Ownership, Collateral, Deliverables



COLLATERAL

When providing equity capital, the investor will require that the recipient gives up some **ownership** of their organisation. This is potentially the most expensive form of exchange. Bonds and loans require **collateral** to be provided. This means the organisation seeking finance must contractually promise to hand over goods/ commodities they own in the event they cannot repay their investment. All forms of finance will require a commitment to agreed **deliverables**. This icon is only highlighted in the pages ahead when deliverables are the *only* requirement in exchange for capital (e.g. grants or balance sheet financing from the public sector).

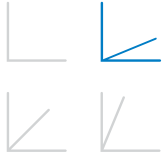


DELIVERABLES



A GUIDE TO CAPITAL

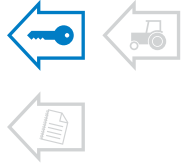
RISK-RETURN



CAPACITY



EXCHANGE



The following pages present a guide to the sources of capital for forest finance, using the criteria outlined above. Each criterion is represented graphically using the icons shown overleaf. These icons represent the main options from the analytical framework, and have been grouped into their respective criteria.

The icons will be presented to the side of each proposal in an ‘icon bar’ shown here on the left. Not all proposals aim to define all of the criteria of the framework. To simplify matters, all icons in the icon bar will be greyed out by default and only the options that are explicitly proposed in the submissions will be highlighted in colour.

For example, the ‘icon bar’ shown on the left indicates that for this hypothetical source of capital, there would be a low risk-return expectation, out-of-house capacity required and ownership would be exchanged for capital.

KEY TO CAPITAL ICONS

RISK RETURN



ZERO

LOW

MEDIUM

HIGH

CAPACITY



IN-HOUSE



OUT-OF-HOUSE

EXCHANGE



OWNERSHIP



COLLATERAL

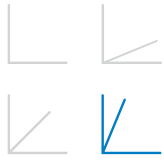


DELIVERABLES

TYPES OF CAPITAL

EQUITY

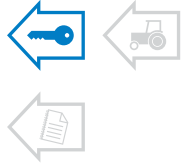
RISK-RETURN



CAPACITY



EXCHANGE



Equity capital is provided by an investor in exchange for partial ownership (called *equity*), and sometimes influence over the decision-making, of an organisation. Equity investors vary greatly in the types of investment they will make, ranging from funding for start-up companies to a company's expansion for listing on a stock market.

The financial return to an equity investor is based on any periodic cash payments from the organisation (called *dividends*) plus any future re-sale of their stake in the enterprise. In the event of a bankruptcy, an equity investor has the last claim to the ownership of the resources of the company. For this reason, and because dividends vary, equity capital is considered riskier than other sources of capital, such as loans, and a higher rate of return is required by the investor. Prior to providing equity capital, investors will consider their expected financial return, the ease with which they can sell their stake in the enterprise and the level of control over the organisation.

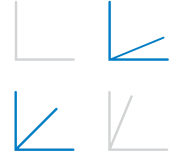
Some equity investors will accept a lower rate of return in exchange for environmental and social benefits. These are generally labelled impact investors. The public sector may also be interested in making equity investments in organisations that provide environmental or social benefits. In many instances this may be the way the public sector can leverage greater amounts of private sector equity investment¹. For example, the public sector can purchase a stake in an enterprise but take on more of the risk than would a private sector investor, thus reducing the risk for a private sector investor in the future (see page 122).

Attracting investment from mainstream primary market equity investors is likely to be easiest for forest-friendly enterprises that wish to generate revenue from the sale of environmentally sustainable commodities (see pages 96 – 109). Alternatively, an impact investor may be interested in funding the expansion of an organisation that generates revenue through, for example, ecotourism (see page 104), and which has a greater focus on social outcomes.

1. <http://www.odi.org.uk/resources/docs/7082.pdf>

LOANS

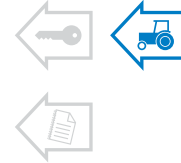
RISK-RETURN



CAPACITY



EXCHANGE



A loan is an agreement where a lending organisation (a *creditor*) provides up-front capital to a borrowing organisation (a *borrower*) as long as the borrower agrees to pay back the initial loan amount (called the *principal*) plus interest. Creditors often require that loans are *secured*, which means that if the borrower fails to meet loan repayments (called a *default*), the creditor can claim ownership of certain assets (such as equipment, factories or commodities) that it could sell-on to offset its losses. Accordingly, loans are often used by organisations that already have a large set of assets, such as an agricultural company with factories and equipment. For smaller organisations or projects without an asset-base, if a loan is offered at all, the interest rate will be higher.

The return expectations of a creditor are closely linked to the riskiness of providing the capital. In the event of an enterprise failing completely, the creditor can claim the enterprise's assets before equity investors. As such, loans are less risky for investors than equity (see page 48), and therefore also have a lower expected financial return.

To support organisations that provide public benefits, public and multilateral institutions may offer concessional loans: loans with an interest rate that is lower than the market rate, or a repayment schedule where interest is not paid for a period of time. Different types of loans are offered to forest projects with different revenue generation mechanisms (see pages 96 - 109). Many forest projects or activities may not have an asset-base that is suitable as collateral for a bank, or they may simply be considered too risky for a loan. In these instances the forest projects or activities may require a concessional loan. For example, when generating revenue from agricultural commodity sales, a development bank may offer concessional loans to small-scale commodity producers to finance the transition to more sustainable agricultural practices (for examples see page 96).

1. Different types of loans can recover their losses at different stages – for example, a *subordinated loan* can lay a claim on assets only after a *senior loan* has claimed the assets equal to their share – but they are all able to claim the assets before the equity investor.

CROWD FUNDING

Large amounts of capital are often managed by professional investors who are legally-bound by the rules of fiduciary duty. Projects with higher risk profiles therefore struggle to receive adequate funding. With crowd funding, individual investors are contributing their own capital without the same fiduciary obligations. Instead, investors are predominantly motivated by a desire to support a project rather than to generate returns.

Crowd funding is a source of finance where a large number of individual investors from around the world, who generally have no prior connection to the project or organisation that they are supporting, collectively contribute small sums of capital.

Crowd funding tends to use websites, such as Kiva.org, Kickstarter and Fundable, which allow viewers to access information on projects that require funding. When a viewer sees a project that they would like to support, they can provide a grant or a loan. The amount of capital can range in size, meaning that people can contribute as much, or as little, as they like. Capital that wasn't previously freed-up for funding projects then becomes available.

Most crowd funding websites have a particular focus, e.g. Kickstarter¹ focuses on creative projects such as independent films, music and journalism. Kickstarter provides a platform where projects can be described and potential funders can provide grants in return for rewards (usually related to the outputs of the projects). Similarly, Fundable² offers rewards to grantors, including positions that influence decision-making. Kiva³, on the other hand, has a model where investors lend to microfinance

institutions to repay debt that has already been disbursed as microcredit, focusing on clean and renewable sources of energy.

Crowd funding could be used to finance forest-friendly activities, especially in cases where larger investors are less supportive, or for ventures and projects where there is a high degree of risk but a high social or environmental benefit. Though forest-friendly projects may require large amounts of funding at some point in the life of the project - e.g. private equity investment or bank loans - crowd funding can be utilised instead of or in addition to standard capital sources to provide seed funding.

1. See <http://www.kickstarter.com>
2. See <http://www.fundable.com>
3. See <http://www.kiva.org>

BONDS

A bond is an agreement where investors provide up-front capital to an organisation in return for the promise from the organisation (called the bond *issuer*) to pay the investor the value of the bond (the *principal*) plus periodic interest payments (called *coupons*). A key difference between a bond and a loan (see page 49) is that divisible units of a bond can be traded easily between investors, each of which represent only a portion of a larger amount of capital that was raised. By breaking down the capital into smaller, tradable units, risk is distributed across multiple investors, allowing the borrower to raise more capital than through a loan.

Investors in bonds can vary greatly, depending on the risk, expected return, term-to-maturity¹ and issuance size of a bond. Bonds that are considered relatively low-risk and low-return investments are popular with more conservative, long-term investors. Also differentiating investors is the size of the bond issuance. Large investors (such as institutional investors) prefer to invest in large-scale bond issuance (e.g. USD 500 million or more), but small funds and private clients are more willing to invest in bonds of a smaller size (e.g. USD 5 to 50 million).

Bonds are increasingly used to finance climate-related investments², and forests are part of that trend. Bonds that finance forest activities are called *green or forest bonds*. For example, World Bank Green Bonds finance the bank's portfolio of climate-related investments, including forest investments (Reichelt, 2010). Some forest bonds have been issued by private organisations, but they tend to finance agriculture and forestry. Very few are issued by companies that generate all of their revenues from sustainable agriculture and forestry. No bonds have been issued that are linked to halting tropical deforestation (Climate Bonds Initiative, 2012).

Bonds can finance forest-friendly activities in a number of ways. They may be of most use when issued by a corporation to finance the implementation of forest-friendly activities, such as transitioning to more sustainable agricultural practices.

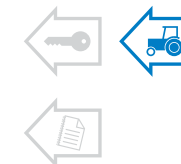
RISK-RETURN



CAPACITY



EXCHANGE

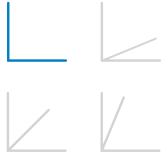


1. The period of time over which principal and coupon payments are made.

2. The Climate Bonds Initiative estimates that approximately USD 174 billion has been issued by public, private, and multilateral institutions to finance mitigation of and adaptation to climate change, of which USD 730 million are sustainable agriculture and forestry themed (Climate Bonds Initiative, 2012).

GRANTS

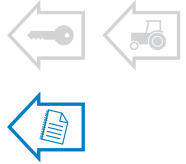
RISK-RETURN



CAPACITY



EXCHANGE

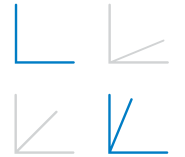


Grants are the provision of money, goods or services from one organisation (the *grantor*) to another (the *grantee*). A grant requires no repayment or return on investment. Grants are often disbursed only if the grantee agrees to meet certain performance criteria agreed on with the grantor, such as adhering to international standards of project implementation, or meeting certain operational deadlines. Similar to most sources of capital, a portion or all of a grant will be provided up-front. Should the grantee fail to meet performance criteria, the grantor's response is usually restricted to not providing more funding in the future or restricting payments that are due to the grantee.

Since grants do not require repayment, they are a key source of capital for activities that do not generate a financial return. They are also very important for enterprises that do intend to generate revenues, but may not be far enough along in their development to receive equity or debt investment (loans or bonds). For these reasons, grants are crucial to supporting forest-friendly development. Many forest-friendly projects are either in a nascent industry (e.g. carbon market), or a small and/or nascent segment of a developed industry (e.g. sustainable brazil nuts). Additionally, many stakeholders believe forest-friendly development should foster local and community-based enterprises. These enterprises are in particular need of grant-based funding as it allows them to develop the sector-specific and financial expertise needed to access more sources of capital.

BALANCE SHEET

RISK-RETURN



CAPACITY



EXCHANGE



Balance sheet finance is a source of capital that uses a public or private organisation's retained earnings (or revenue, for the public sector) to finance a forest-friendly activity. This is instead of sourcing funds externally from an investor, as is the case for other sources of capital.

When a public body finances an activity from its balance sheet (also known as financing from its budget), there is typically no expectation of return, e.g. protected area management. This only applies to projects that are wholly managed and implemented by public sector bodies. In the case of financing an activity from a private organisation's balance sheet, the activity may or may not be expected to provide a return on investment – this is entirely dependent on the motivations of the company funding the project. For example, a company may finance a conservation project to bolster its public relations, expecting no return other than that derived from improved marketing, or it may finance a REDD+ project in order to diversify its forest-based revenue streams. Balance sheet finance from public sector bodies is generally directed towards activities focussed on non-revenue generating activities, such as protected area management. This is because the public sector uses general tax revenues, which do not need to be repaid, to fund activities. Importantly, however, the public sector can also raise revenue from new or redirected taxes or subsidies, and earmark this revenue for specific uses. For example, Costa Rica earmarks 3.5% of revenues from a fossil fuel tax to fund its payment for environmental services scheme (Parker et al, 2012).

Activities that generate revenue tend to be funded by the private sector using more traditional loans (see page 49) or equity (see page 48). Balance sheet financing from private companies is important for forest projects where the revenue stream is generated in an established market. This is because a company in an established market, such as agricultural commodities (see page 96), could be large enough, with enough retained earnings, to have the internal funds available to finance forest-friendly activities.

BECOMING INVESTMENT GRADE: A FOREST CARBON PROJECT EXAMPLE

Forest carbon projects seeking private sector investment must be prepared to demonstrate i) their commercial viability i.e. that project revenue will cover project cost and provide some return opportunity for investors, and ii) the project's ability to achieve registration and deliver emission reductions on a predictable schedule. When a project begins discussions with potential investors, they should be prepared to demonstrate the commercial viability of the project under a number of key criteria. These criteria are outlined below and the most important aspect(s) that a project must demonstrate to be investment grade are summarized under each criterion.

CARBON DEVELOPMENT STAGE

Carbon project development is an intricate process with multiple stages through which risk decreases as probability of successful registration increases. With this risk reduction over time, the project's ability to negotiate favorable price and investment terms increases. Investors will require projects to have completed a full feasibility study that confirms how the project meets all the key criteria outlined below.

MARKET STANDARDS

Most investors will look for dual Voluntary Carbon Standard (VCS)/Climate, Community & Biodiversity (CCB) certification. This is because dual certification provides investors the assurance of the environmental integrity for carbon accounting and social and environmental benefits. The CCB reduces operational risk by ensuring that communities are properly engaged. Projects should also prepare information on the jurisdiction's level of readiness to implement jurisdictional accounting and any government agreements

that support grandfathering of the project into future jurisdictional REDD programmes.

PROJECT PARTNERS

Investors will strongly favour working with well-identified developers of carbon credits and project proponents who have the capacity to deliver the project plan and emission reductions. For projects to demonstrate that they are investment grade, they will need to detail the activities that each project partner will implement, and demonstrate that they have the capacity to implement these activities. There must also be legally binding agreements with project partners that list the activities and budgets of each partner.

PROJECT PLAN

A project's ability to demonstrate that the activities included in the project plan will actually produce the emission reductions is central to an investor's ability to assess the riskiness of their investment. Investors want to see a long term plan detailing each of the activities being implemented. For REDD+ projects, it is important to demonstrate how each of the drivers, agents, and underlying causes of deforestation is addressed in the project plans and how communities will be engaged and livelihood activities will be implemented.

LAND TENURE AND CARBON RIGHTS

Understanding the legal and land tenure framework of the host country is necessary to ensure that project proponents are authorized to develop the project and to assess that the benefit sharing plans are aligned with tenure. It is also the basis for determining carbon ownership. Since very few REDD host countries have clear legislation specifying carbon ownership, a "belt and suspenders" approach should be used to secure carbon

rights. After evaluation of land tenure and identification of potential carbon rights holders, agreements should specify how all potential rights holders agree that carbon rights are granted to an entity approved by all project proponents.

FINANCIAL PROJECTIONS

Developing detailed financial projections for the life of a project is important to ensure that the investment transaction will support the long-term financial sustainability of the project and to negotiate a 'fair' risk adjusted return between the project proponent and the investor. There are three major components needed for the financial projections: revenue estimates, project implementation costs, and carbon development costs. Once these estimates are calculated for the crediting period, the project can develop the cash flow/net income, IRR, breakeven, upfront cash needs, and sensitivities.

COMMUNITY ENGAGEMENT

For projects that have communities living within, and in close proximity to, the project area, the project must engage with them. Without proper integration of communities and well-designed alternative income and livelihood programmes, the project will have a higher risk of failure or be unable to produce emission reductions. Project plans should detail each activity that directly involves communities as well as any broader programmes for community development, livelihood improvement, and employment opportunities.

BENEFITS SHARING

When evaluating benefits sharing, it is necessary to consider all the benefits received by right holders and project participants. It is important to note that not all benefits

derived from forest carbon projects are purely monetary including; protecting watersheds, clarification of land tenure and promotion of improved agricultural practices. A benefits sharing plan needs to identify all project participants and rights holders, and detail each type of benefit they will be allocated. The project also needs to demonstrate that the entity managing funds has the financial controls to ensure that funds are managed in line with the project agreements and benefits sharing plan.

*Leslie Durschinger, CIO Terra Bella Fund
Terra Global Capital, LLC*



ORGANISATION

UNDERSTANDING ORGANISATIONS

The capital sources discussed in the previous chapter are not equally accessible or applicable to all types of organisations involved in conducting forest-friendly activities. The characteristics of an organisation (e.g. its size, where it is based, its management structure, or its aims) influence the types of capital it can access, the way it is managed and how it is used.

This chapter describes the various types of organisations engaged in sourcing and delivering finance for forest activities on the ground, and examines how the characteristics of each organisation interact with and influence the flow of finance to forest-friendly activities.

ORGANISATION FRAMEWORK

CRITERIA

The organisations discussed in this section are assessed against a framework of four criteria, each represented by a relevant icon. Many of these criteria are interrelated and have co-dependencies, which are explained in the text.

- **Accountability:** Where is the balance of accountability for the organisation? Are organisations largely accountable downwards (e.g. to communities) or upwards (e.g. board members)?
- **Distribution:** How is profit distributed – internally within the organisation or externally to the organisation?
- **Level:** At what level is the organisation governed – locally, nationally or internationally?
- **Decision-making:** How is decision-making concentrated within the organisation – is it centralised or decentralised?

This section describes the key trends and traits that typically characterise organisations involved in forest-friendly activities.

The following pages explain these criteria and how they can be used to understand organisations.



UPWARD



DOWNWARD

ACCOUNTABILITY

The first criterion for this section assesses how organisational accountability influences the management of finance for forest-friendly activities.

Options: Upward, Downward

In the context of forest finance, the balance of an organisation's accountability influences the capital sources, the way finance is managed, and the type of forest activity pursued. Accountability may also influence and be influenced by organisational attitudes to project risk and attitudes towards profit distribution. It is therefore important to assess the impact of the balance of accountability on operational decision-making in any assessment of the influence of organisations on finance flows for forests.

For the purposes of this section, the balance of organisational accountability is assessed as either upwards or downwards. An organisational type's balance of accountability may be **upward**, to its board of directors, donors or shareholders to meet 'meet prescribed standards of behaviour' which may or may not be legally enforced. Alternatively, the balance may be **downward** to those for whom the organisation provides services, such as the general public, communities or its own employees. This may be motivated by 'felt responsibility', as might be expressed through a shared mission (Chisolm, 1995; Fry, 1995; Edwards, 1996).

DISTRIBUTION

This criterion assesses how organisational types distribute the profit from their activities, and how this influences, or is influenced by, the management of finance for forest-friendly activities.

Options: Internal, External

Organisations can be characterised by how they treat surplus revenues generated through their activities. Organisations that use surplus revenues to achieve goals rather than distributing them as profit are termed as having an **internal** distribution of profits (e.g. most types of NGOs or charitable institutions). Organisations which have an internal profit distribution can and do still engage in profit making activities (e.g. an NGO could establish a non-timber forest products trade business).

Organisations that distribute surplus revenues as profits or dividends to shareholders or other parties to generate wealth can be deemed as having an **external** distribution of funds. Private companies make up the bulk of such organisations. However, organisations that distribute profits externally may still engage in activities which do not generate any profit (e.g. corporate social responsibility projects, such as Fiji Water's project with Conservation International (Fiji Water, 2012)).

The organisational attitude to profit influences the types of capital accessed, and the forest-friendly activities engaged in by that organisation. For example, organisations with an external profit distribution will require a project to produce sufficient profits to allow repayment of investments. This may automatically exclude certain types of forest-friendly activities which are less likely to generate the required returns. If an organisation has an internal distribution of profit, activities which do not generate surplus revenues but support the organisational mission may be more attractive.



INTERNAL



EXTERNAL



LOCAL

LEVEL

This criterion assesses the level at which the organisation is governed, and the impact that this has on the management of finance for forest-friendly activities.

Options: Local, National, International



NATIONAL

Organisations can be managed at three levels. **Local** organisations are governed sub-nationally, and their operations are local in scope; **national** organisations have headquarters based nationally, and may have operations that extend into several areas of the country; **international** organisations have a principal headquarters in one country, but operations in several other countries at different scales.



INTERNATIONAL

The level at which an organisation is governed impacts both the effectiveness of forest-friendly activities and the efficiency of finance delivery. Internationally governed organisations may benefit from economies of scale in their operations, but their scale may also increase the cost or complexity of initiating new projects. However, international organisations benefit from access to international networks that may open up more varied funding channels for forest-friendly activities.

Nationally governed organisations also typically benefit from economies of scale, leading to reduced transaction costs for finance contributors and recipients (Schneider & Cames, 2009). Nationally governed organisations are also more likely to engage in managing or directing funds towards national level, longer term activities, which may integrate with country goals or plans.

Locally governed organisations play a crucial role in countries lacking the institutional capacity to effectively apply national level approaches that manage and deliver forest finance. They can respond quickly to evolving project needs, and are often best placed to advise on and deliver appropriate project initiatives. Finance flowing to locally governed organisations is also often easier to track and evaluate than finance flowing to nationally or internationally governed organisations.

DECISION-MAKING

The fourth criterion assesses how the type of decision-making within different organisational structures influences the management of finance for forest-friendly activities.

Options: Centralised, Decentralised

Organisations have associated forms of internal governance structures that influence how finance is received, managed and disbursed by the organisation. 'Who' has authority, and 'how' that authority affects implementation are key considerations in assessing how organisations can influence finance flows.

For the purposes of this analysis, **centralised** decision-making structures are characterised by a 'top-down' management style within a hierarchical management structure, where employees are expected to adhere to policies and procedures approved by senior managers. This type of structure can create streamlined processes and facilitate efficiency, but tends to lengthen the decision-making process, allows minimal delegation and is often more bureaucratic.

Decentralised decision-making is characterised by fewer levels of administration and a more horizontal management structure, with fewer centralised policies or procedures. While this can lead to certain inefficiencies, it allows managers extra freedom to make decisions, encourages delegation of authority, and facilitates the decision making processes through a more 'bottom up' approach (O'Reilly and Pfeffer, 2000; Zabojsnik, 2002).

While much depends on the characteristics of individual institutions, the following analysis assesses key trends on the location of authority within organisational types.



CENTRALISED



DECENTRALISED

A GUIDE TO ORGANISATIONS

ACCOUNTABILITY



DISTRIBUTION



LEVEL



DECISION-MAKING



The following pages present a guide to seven types of organisations that access, manage and use finance for forest-friendly activities using the framework presented in the previous section. Each criterion is represented graphically using the icons shown overleaf. These icons represent the main options from the analytical framework, and have been grouped into their respective criteria.

The icons will be presented to the side of each proposal in an 'icon bar' shown here on the left. Not all proposals aim to define all of the criteria of the framework. To simplify matters, all icons in the icon bar will be greyed out by default and only the options that are explicitly proposed in the submissions will be highlighted in colour.

For example, the 'icon bar' shown on the left indicates that in this hypothetical organisation, there would be upward accountability, internal profit distribution, management at a local level, and a decentralised decision-making process.

KEY TO ORGANISATIONS ICONS

ACCOUNTABILITY



UPWARD



DOWNWARD

DISTRIBUTION



INTERNAL



EXTERNAL

LEVEL



LOCAL



NATIONAL



INTERNATIONAL

DECISION-MAKING



CENTRALISED



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TYPES OF ORGANISATION

NATIONAL NON-GOVERNMENTAL

ACCOUNTABILITY



A national non-governmental organization (NGO) is a not-for-profit institution that operates independently from the government within a single country. NGOs are predominantly responsible to a board of directors or trustees, who guide the management of the organisation (UN, 2012).

DISTRIBUTION



National NGOs have agendas that encompass activities at predominantly local and national levels, and tend to have specific expertise in certain types of forest-friendly activity (e.g. training in sustainable forest management, protected area management, non-timber forest product development). They are typically based in major national cities, with access to arenas (working groups, forums etc) where they can lobby public agencies (see page 75) for wider change in the national forest sector. However, they also retain strong links with community organisations (see page 77) at the local level, and may also directly implement projects through regionally placed staff.

LEVEL



National NGOs tend to have limited access to international networks and therefore typically raise capital for forest projects from grants (see page 52) from predominantly national sources (Mawdsley et al., 2002; Kim, 2011). National NGOs tend to have, and are also perceived as having, lower technical capacity than internationally linked organisations (e.g. international non-profits - see page 71). Limited networks and capacity gaps, perceived or real, act as barriers to their access to capital from major donors in both public and private sectors.



DECISION-MAKING



Targeted capacity building and technical support for national NGOs could both increase the level of finance available for national NGOs, and improve the efficiency of project implementation. A lack of institutional coordination has also been partly responsible for a duplication of efforts between organisations at the project level. Coordinated planning on national funding priorities (see page 131) at a governmental level could facilitate NGO collaboration, and an increased flow of capital, to forest projects in line with national forest priorities and action plans (e.g. NBSAPs) at a national and sub-national level.

INTERNATIONAL NON-PROFIT

International non-profit organisations (INPOs) are internationally governed institutions that support programmes of work that target tropical forests, and that implement projects through in-country offices or specific project units.

Major INPOs include development banks (e.g. the World Bank), intergovernmental organisations (e.g. UN Environment Programme), and major environmental non-governmental organisations (e.g. the World Wide Fund for Nature).

INPOs have a high degree of technical expertise on forests, and focus on agendas that have relevance at national and international scales. This enables INPOs to facilitate knowledge exchange on forestry projects (e.g. between UNFCCC negotiations and national forest projects), and to collaborate on issues that require regional or global coordination (e.g. cross border protected areas, or the Aichi Targets – see page 24). INPOs can also implement forest projects directly at national levels, often in collaboration with national non-governmental (see page 70) or community organisations (see page 77) (UNESCAP, 2009). However, their global reach also increases internal bureaucracy and management complexity, which can inhibit project effectiveness.

INPOs are typically headquartered in major cities, and have access to influential networks within the public agencies of donor country governments, and major private sector organisations engaged in forestry activities. These networks, combined with high capacity and staff presence in forest regions, enable INPOs to leverage considerable amounts of capital for forest projects from capital mechanisms, not as easily accessible to national non-governmental organisations (e.g. equity, see page 48). Some INPOs also raise revenues from membership fees or public subscriptions (e.g. WWF). INPOs are also able to lobby and advocate for the prioritization of specific global, as well as national, forestry agendas, which has a trickle-down effect on the capital available for certain types of forest project (Panahirad, 2010; Kim, 2011). This can coordinate funding in a positive way, but can also lead to unintended consequences (e.g. prioritizing finance for forest carbon has led to other aspects of sustainable forest management receiving limited funding (UN, 2012)).

ACCOUNTABILITY



DISTRIBUTION



LEVEL



DECISION-MAKING





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CO-OPERATIVE

A co-operative company is a company owned and controlled by its members. These members can be customers (consumer cooperative), employees (employee or worker co-operative), or suppliers (supplier or producer cooperative) of the company itself. Unlike other companies that are upwardly accountable to their investors, co-operatives are downwardly accountable to their members and generally established to advance their members' needs. While co-operatives often have a management structure in place, they "are democratic organisations controlled by their members, who actively participate in setting policies and making decisions" (Principle 2, ICA, 2012).

Co-operatives for producers of primary products (e.g. crops and timber) are particularly relevant for forests. Primary producer cooperatives can support their members in many ways, for example aggregating purchases, storage, and distribution and/or providing education and capacity building. Co-operatives aim to remove market barriers (e.g. producer co-operatives support a strong supply of products and help producers to access markets and receive a fair price (OCDC, 2010)).

Primary producer co-operatives, specifically for agricultural producers, control a large market share in developed regions (Birchall, 2004), but are less influential in developing regions (OCDC, 2010). Since they embody certain social values, co-operatives are broadly believed to be supportive of sustainable development (e.g. 2012 is the UN International Year of Co-operatives). Co-operatives tend to face difficulties accessing capital, particularly credit. To support co-operatives, access to capital needs to be improved, using catalysts that incentivise potential investors, such as credit guarantees (see page 124).

Co-operatives can also face difficulties internally from, for example, free-riding members who do not give as much to the co-operative as they take (O'Connor, 2003). Similar problems with forest resource management have been overcome in places where there is strong social capital and local community engagement in resource management.

ACCOUNTABILITY



DISTRIBUTION



LEVEL



DECISION-MAKING



COMPANY

ACCOUNTABILITY



DISTRIBUTION



LEVEL



DECISION-MAKING



Companies are organisations that produce goods or services and sell them to customers to earn a profit. Companies are owned by and accountable to one or multiple owners, which have usually provided equity capital (see page 48). Companies may reinvest some profits (see page 53) and distribute some externally to shareholders. Companies usually have a top-down management, where one individual or group manages the company's operations.

There are four common types of companies, differentiated by ownership and liability for the company's activities. A sole proprietorship is owned by a single individual liable for the company, while a partnership is owned by a small group of individuals that are collectively liable. The owners of a corporation, on the other hand, are not liable. A private corporation is owned by multiple shareholders, each of which must have approval of the company's management to purchase shares. A publicly-traded corporation, however, is owned by multiple members of the public who purchase shares through a stock exchange.

Being profitable is essential for most companies. This means that they must often find a way to balance being profitable with being forest-friendly. Many companies carry out forest-degrading activities to sustain profitability. However, there are various forest-friendly activities that can be profitable (see Activity chapter on pages 96-109).

Various catalysts can make companies more forest-friendly. Public sector investment in a public-private company is a common way to promote growth in strategically important or nascent industries (see page 122). This is important for forest-friendly development because its public ownership is often used to drive government policies (e.g. growing the sustainable timber industry).

NATIONAL PUBLIC AGENCY

ACCOUNTABILITY



DISTRIBUTION



LEVEL



DECISION-MAKING



A public agency is an arm of government that is responsible for the administration of a particular sector of the country. Such agencies are often national, although in federal systems they may also exist at the sub-national level. Public agencies do not set regulation or pass laws, although they are responsible for enforcing relevant legislation. They may also provide expertise and evidence to inform government policy.

Most tropical forest countries have an agency responsible for forests and/or protected areas, often under the authority of another department or ministry. For example, Costa Rica's National Protected Area System is an agency of the country's Ministry of Environment (MOE, Costa Rica, 2012). Some 60% of tropical forests worldwide are administered by the state, and are therefore managed in some form by a public agency (RRI, 2012).

Public forest and protected area agencies generally receive capital from public balance sheets (see page 53) or grants (see page 52), which are often from international sources. They can work in partnership with trust funds (see page 76) when capital from other sources isn't enough to cover their working budget. Public agencies often have the capacity to raise revenues from direct biodiversity fees (see page 107).

In Latin America and the Caribbean, protected areas depend on government budget allocations for the majority of their revenue (~60%) and only receive only a small portion from other revenue sources (~14%) (Bovarnick et al., 2010). The financial sustainability of certain relevant public agencies, and in turn their ability to effectively sustain forests, is therefore partly dependent on political processes. There is potential for public agencies to increase their financial autonomy and stability by increasing the revenues they generate. For this to occur they must have the technical capacity and legal flexibility to do so (see technical support on page 130). Government regulation could help by instituting regulatory frameworks to value and pay for ecosystem services, or ensure the sustainability of more traditional markets such as timber.

TRUST FUND

ACCOUNTABILITY



DISTRIBUTION



LEVEL



DECISION-MAKING



Trust funds are pools of capital. Similar to a company, they make investments or implement projects for a return on their initial investment; but in contrast to a company, do not necessarily produce a good. The aim of these funds is to support forest-friendly activities by directly providing capital, indirectly providing revenue for forest-friendly activities, or implementing forest-friendly activities that earn a return on investment. Trust funds can be: an endowment fund, where the initial capital is invested in perpetuity; a sinking fund, where a portion of initial capital is spent each year; or a revolving fund, where some capital may be spent, but is replenished from other sources.

Over 60 trust funds already exist (Adams and Victorine, 2011), mainly financing protected areas. Increasingly this is defined in terms of financing the provision of specific ecosystem services. For example, the Latin America Water Funds Partnership is providing capital to multiple trust funds that finance the provision of water services and biodiversity protection. Trust funds are usually capitalised by grants from international donors and host governments. Companies are also starting to provide grants, as they increasingly recognise their dependence on ecosystem services (e.g. Nestlé Waters (Parker et al, 2012)).

Trust funds can also generate revenues by providing ecosystem services (see page 106). In Latin America, for example, some water utilities are passing a small percentage of the fees they charge customers to water funds. Others are engaging in emerging offset markets (see page 102). Revenues are generally used by the fund to cover administrative costs or potentially recoup spent (or lost) capital.

Trust funds can provide long-term finance (Adams and Victorine, 2011). This is due to their structure, but also because their decision-making authority is held by a board that usually represents all stakeholders, improving the long-term legitimacy of the activities.

1. This book is focusing on implementation funds and do not include grant-making funds that are sources of finance for NGOs and CBOs (as defined in Spergel and Taieb (2008))

2. The ability to generate revenues also creates potential for environmental funds to act more like traditional infrastructure investments and raise capital through, for example, issuing bonds (see page 51).

COMMUNITY ORGANISATION

Community organisations (COs) form around an issue of communal interest and are situated at the community level in forest areas. They are often informally established, and are maintained by either mutual agreement or by traditional forms of authority (e.g. community elders), and their rules are internally enforced (Leach et al., 1997).

COs are often made up of traditional forest landowners, or those who hold resource usage rights. These groups typically rely on forest resources for subsistence, and are experienced in the sustainable management of commonly owned resources (Chhatrea and Agrawal, 2009). COs have also been shown to be effective managers of community-owned protected areas, with deforestation rates in community managed forest lands lower than in state managed protected areas (Porter Bolland et al., 2011). Their engagement is crucial in ensuring local support of forest initiatives, and in facilitating effective and efficient forest project implementation (MacQueen et al, 2012; Hatcher and Bailey, 2011).

Many COs struggle to access finance for forest projects independently, instead relying on partnerships with international non-profits (see page 71), national non-governmental organisations (see page 70) or public agencies (see page 75). These partnerships often promote CO involvement in the decision-making process, helping to support forest-friendly project outcomes. This frees up other organisations from unmanageable numbers of operational decisions, and provides local ownership of actions to manage forest resources. As the involvement of COs in financial decision making increases, further monitoring of how financing is being used locally will also likely need to increase.

As COs are driven by issues of local concern, their balance of accountability tends to lie downwards towards their members at the community level, although on a project by project basis they may also be accountable upwards to donors or investors to meet project deliverables. Decisions tend to be made in a decentralized way, or are reached by consensus. Revenues from projects are also distributed internally, within the community.

ACCOUNTABILITY



DISTRIBUTION



LEVEL



DECISION-MAKING



1. See also UNFCCC Principle of Subsidiarity (see page 20) - promoted by a number of Parties under the Ad Hoc Working Group on Long Term Cooperative Action under the Convention (AWG-LCA).

COMMUNITY GOVERNANCE STRUCTURES

The Sofala Community Carbon Project is located in the Sofala province of central Mozambique. It was launched in 2003 under the Plan Vivo Standard by the University of Edinburgh and Envirotrade, with the financial support of the European Commission. The project now consists of two sub-projects: 1) the Gorongosa sub-project, in the western buffer zone of the Gorongosa National Park and incorporating the original Nhambita Community Carbon Project, and 2) the Zambezi Delta sub-project, in the area to the north of the Gorongosa National Park and the Marromeu National Reserve.

The Sofala project was designed to be a demonstration pilot for the concept of intensive community engagement in forestry and land-use projects. The Plan Vivo Standard, which was the only carbon accounting standard available for these types of projects until much later, lends itself to this concept due to its particularly powerful community and participant engagement mechanisms. Apart from ensuring that the project achieves its goal of making permanent changes in the local patterns of land-use, this focus on community engagement is also a key component of the principle of Free Prior and Informed Consent (FPIC), which is now generally accepted as a prerequisite for any project operating in areas occupied by communities.

The principal aim of the project is to wean the local subsistence farming communities away from traditional “slash and burn,” shifting agriculture toward new techniques which result in improved living standards and at the same time reduced deforestation and land degradation. From the beginning of the project, it has been clear that community engagement is a continuing process integral to project management. The Plan Vivo Standard

accommodates this through its fundamental approach of requiring the involvement of smallholder farmers in the design of their project activities. Project technicians and extensionists work closely with local participants to map their land – both in GPS and visual landmark terms – and to select the most desirable activities from a menu of available technical specifications. For both forest protection (REDD+) and Agroforestry activities, Envirotrade then contracts with the local participants to make payments for specific actions over specific contract terms ranging from 7 years to 10 years. Contract payments are made annually based on performance monitored and reported twice every year.

As the vehicle for engagement with local participants and other stakeholders, Envirotrade has created a Mozambican non-profit association, Associação Envirotrade Carbon Livelihoods (AECL), which has been formally registered with the Mozambique government. The legal form of association was chosen because it is the only form accepted under Mozambique law for non-profit entities. At present, the members of AECL are drawn from community association representatives and Envirotrade managers, although the membership can easily be expanded to include other stakeholders as well. This organisation serves as the interface between the local communities on the one hand and the project developer on the other. It is also the conduit through which funding for the PES is channelled and the legal entity which contracts for the ecosystem services.

AECL interacts with the local communities by serving as the vehicle in which the project developer can meet with individual farmers and with the relevant community associations.

As a non-profit entity with community membership, AECL also maintains relations with local, provincial and national government departments and officials and with NGOs operating in the project areas.

The project is managed – including monitoring, reporting and verification – by employees of Envirotrade Sofala Limitada, a Mozambican subsidiary of Envirotrade Carbon Limited. This company provides project services and funding to AECL in return for title to the VER carbon offset credits generated by the project, which it sells on to its parent company outside Mozambique for sale in the world carbon offsetting markets. The transfer pricing of the carbon offset credits is set at 2/3 of the final prices achieved in the world markets, ensuring that a minimum of 2/3 of the final carbon revenues generated by the project – and any carbon price upside potential – are returned to Mozambique to cover project operating expenses and payments to participating communities and farmers.

Envirotrade's experience in this project has demonstrated that setting up a governance structure that is inclusive of local communities is essential. Any project is bound to encounter challenges as it develops, and the only way to ensure that communities remain supportive while these challenges are overcome is to involve them in the project design and execution from the beginning. This is not simply to ensure Free Prior Informed Consent, which is important in its own right, but also to make the participating communities true stakeholders in the success of the project.

Envirotrade Carbon Limited



ACTIVITY

UNDERSTANDING ACTIVITY

After capital has been raised, organisations that manage or deliver the capital at the project level will then implement a forest-friendly activity. These are economic activities that extract or provide a good or service from the forest, or from land at the forest frontier, which can in turn generate a financial return. For example, a forest-friendly activity may be the extraction of sustainably managed timber on previously deforested land for sale in to the international lumber market, or the provision of an ecosystem service from native forest, the provision of which is then paid for by the ecosystem service beneficiary.

Some forest-friendly activities may in the short-term lead only to an incremental reduction in forest loss against a business-as-usual scenario. The level of sustainability is defined by the way in which the economic activity will use or manage the forest or land at the forest frontier. For example, conservation of a forested area is inherently more sustainable than intensification of agricultural production at the forest frontier.

A forest-friendly activity will generally, though not always, be expected to generate revenue. This can be used to repay borrowed capital, to generate profits or to fund the continued operations of the organisation. Numerous opportunities exist for generating revenue from economic activities that use tropical forest resources in a way that minimises or avoids deforestation or degradation. This section will describe a series of forest-friendly activities that minimise or avoid deforestation or degradation.

ACTIVITY FRAMEWORK

CRITERIA

As with previous chapters, each of the activities will be assessed against four criteria: scale, lag time, market type and how the activity impacts forests.

- **Scale:** What is the market size for the goods or services produced?
- **Lag time:** How soon after the instigation of a project does an activity begin to generate revenue?
- **Market type:** Is the existence of the market predicated on regulation or not?
- **Impact:** How does the activity impact the forest in a manner that is sustainable – increase, maintain or reduce loss?

It is important to emphasise that the aim of this chapter is not to claim definitive and rigid characteristics for each of the different activities – it is clear that forest activities are conducted in a range of different contexts and landscapes and managed in a variety of ways. The aim is to instead emphasise the key trends, traits and outcomes that tend to characterise each of the activities. By doing so, this chapter will present key information on each activity and show how, if applicable, each minimises deforestation and forest degradation.

The following pages explain these criteria and how they can be used to understand forest-friendly activities.

USD bn

SCALE

Estimate (in billions of USD) of the annual production value in tropical forest countries of the economic activity (whether or not it is forest-friendly).

Numerical Value in billions of USD

Key to understanding forest-friendly activities is the size of the market, which helps determine the ability of a project to sell its products or services. This information is important to investors and project managers, as it gives an indication of the robustness of and demand for the products and service of a given activity.

This criterion will use a numeric value (in billions of USD) that represents current annual production value of a given activity, whether it is forest-friendly or not. The vast majority of economic activities in tropical forest countries are not yet forest-friendly. As such, it is not particularly helpful to try to estimate the current scale of revenues associated with those activities. Here, instead, we provide the scale of the economic activity generally, as an illustration of the scale of the market that forest-friendly activities could tap in to. If forest-friendly activities were able to capture just 5-10% of the revenue from these larger markets, we would be well on our way to sustaining tropical forests.

The scale is estimated based on data collected from global databases or industry reports.

LAG-TIME

The time it takes for an activity to begin generating revenue.

Options: Around 2-3 years, around 5 years, around 10 years, over 10 years

An important consideration when seeking capital for a forest project is to determine the length of time before the project will begin to generate revenue or returns on investment. This is important information for investors and for the implementing organisation. Some projects will generate revenue at **around 10 years** or even **over 10 years** without generating returns. This is often the case with, for example, reforestation for timber. Other projects may need to generate returns at **around 5 years**. The repayment of capital can be linked to the lag time. The majority of sources of capital will require repayment or expect returns earlier than 5 years. In this case the revenue generation would typically begin after around **2-3 years**.

It is important to note that the lag time will vary depending on each individual project. This book has attempted to identify the lag time that may generally suit each activity.

2-3

AROUND 2-3 YEARS

5

AROUND 5 YEARS

10

AROUND 10 YEARS

10+

OVER 10 YEARS



REGULATION
BASED

MARKET TYPE

The dependence of the activity on regulation in order to sell the activity's products or services into a market.

Options: Regulation-based, Non-regulation based

Forest activities provide goods and services, which are then purchased. Where the need for these goods or services has developed over time due to an external necessity, the market is described as non-regulation based. For example, a forest owner produces sustainably harvested timber to meet increasing demand from the flooring industry.

There are cases when the demand within a market has been created by regulation. In these cases, government regulations, whether directly or indirectly, create demand for certain goods or services that tropical forest projects provide. For example, regulation, or the likelihood of future regulation, is creating demand for offset credits.



NON-REGULATION
BASED





MAINTAIN

IMPACT

The impact of the activity on forest cover.

Options: Increase, Maintain, Reduce Loss



INCREASE

Some activities rely on the standing forest to generate revenue. These activities harvest non-timber forest products from trees or shrubs, or utilise ecosystems in their pristine condition, such as ecotourism, offset credits or bio-prospecting. These activities maintain forest cover.



REDUCE LOSS

In some circumstances an activity can increase forest cover. This can be due to actions that increase the density or reduce fragmentation of existing forest cover, or through reforestation. It can take several decades for these areas to reach maturity, and reforestation may be conducted with monocultures, which can have associated impacts on biodiversity and forest ecosystem services.

Other activities may require forest areas to be cleared to make space for plantations or to harvest products. Sustainable forest activities, or forest-friendly activities, minimise the need for and the impacts of forest degradation and deforestation. They can therefore be considered to be reducing loss.

In order to maintain, increase or reduce the loss of forest cover, each forest-friendly activity can use one of a number of approaches to land or forest use/management. These are described overleaf, with examples.

FOREST-FRIENDLY APPROACHES

FOREST IMPACT	APPROACH TO LAND OR FOREST USE/MANAGEMENT ¹	DESCRIPTION	EXAMPLE
Maintain	Conservation	Maintain existing natural forest areas, or support the natural expansion of existing forest cover	Protected areas to prevent deforestation of existing forest
	Afforestation	Convert land under other uses into forest areas, or increase the canopy cover of an area to the defined threshold for forests	Native species plantations on former agricultural land
	Reforestation	Establish forest cover on previously forested land that has been degraded or deforested below the forest definition threshold	Native or exogenous plantations on former agricultural land
Reduce loss	Restoration/regeneration	Establish forest cover on previously forested land that has been degraded or deforested below the forest definition threshold	Native or exogenous species plantations in deforested or degraded forest areas
	Intensification	Support increased productivity on land areas adjoining or within forests to limit or avoid degradation and deforestation relative to BAU	Establishing crop rotation protocols, irrigation improvements, or improving technology that increases yield per hectare and avoids the need for agricultural expansion
	Extraction Improvement	Increase the capacity of the forest to supply goods/services, while also reducing forest degradation and deforestation relative to BAU	Establishing improved timber extraction protocols, such as Reduced Impact Logging, which reduce timber wastage and decrease damage from timber extraction

1. The definitions of approaches used in this table are based on definitions used by the FAO and described at <http://www.fao.org/docrep/005/Y4171E/Y4171E10.htm>

A GUIDE TO ACTIVITY

SCALE

220
USD bn

LAG TIME

2-3 **5**
10 **10+**

MARKET TYPE



IMPACT



The following pages present eight different forest-friendly activities for generating revenue from forests, using the framework presented in the previous pages. Each criterion is represented graphically using the icons shown overleaf. These icons represent the main options from the analytical framework, and have been grouped into their respective criteria.

The icons will be presented to the side of each activity in an 'icon bar' shown here on the left. Not all proposals aim to define all of the criteria of the framework. To simplify matters, all icons in the icon bar will be greyed out by default and only the options that are explicitly proposed in the submissions will be highlighted in colour.

For example, the 'icon bar' shown on the left indicates that for this hypothetical activity, the market scale is USD 220 billion, the lag time is around 2-3 years, the market is regulation-based and it increases forest cover.

KEY TO ACTIVITY ICONS

SCALE

USD bn

LAG TIME

2-3 **5** **10** **10+**

2-3 YEARS

**AROUND 5
YEARS**

**AROUND 10
YEARS**

**OVER 10
YEARS**

MARKET TYPE



**REGULATION
BASED**



**NON-REGULATION
BASED**

IMPACT



MAINTAIN



INCREASE



REDUCE LOSS

TYPES OF ACTIVITY

AGRICULTURAL COMMODITIES

SCALE

92,220
USD bn¹

LAG TIME

2-3 5

10 10+

MARKET TYPE



IMPACT



Over 600 million hectares of forest worldwide have been cut down to free up land for agriculture, including cattle rearing, sugar cane production and soy and palm plantations. Forecasts suggest that global food production will need to increase by approximately 70% by 2050, putting forests at increasing risk of conversion to arable or grazing land (FAO, 2009).

The majority of this deforestation has occurred in Brazil and Indonesia (FAO, 2010). The major drivers of deforestation are beef, soy and palm, with other commodities causing deforestation on a smaller scale. This is partly due to increasing demand, and partly because meat is a relatively inefficient food, requiring more land per unit of nutritional value than other agricultural commodities. Soy, on the other hand, is far more productive, whilst palm is around four times more productive than soy.

The conversion of forest to agricultural land causes greenhouse gas emissions, as well as numerous other ecosystem impacts, such as loss of habitat, a reduction in soil quality and negative impacts on watersheds (West, 2010).

Tropical forest land that has been cleared for agriculture produces less than half the annual crop yield compared with temperate regions (West, 2010). Approaches to improve efficiency and therefore sustainability include: intensification of farming, better land management (Faminow & Vosti, 1998), and silvopasture (The Centre for Agroforestry, 2010). To help improve agriculture practices roundtables have been created, offering guidance on sustainable farming activities and creating certification-schemes.

1. This number is the total estimated producer value of beef, soy and palm in tropical forest countries.

AGRICULTURAL COMMODITIES

COMMODITY	PERCENTAGE OF PRODUCTION VOLUME IN TROPICAL FOREST COUNTRIES	TOP TROPICAL PRODUCERS (% OF GLOBAL, BY PRODUCTION UNIT)	ESTIMATED PRODUCER VALUE IN TROPICAL FOREST COUNTRIES (USD)	MARKET-SPECIFIC INITIATIVES
Beef	44%	Brazil (14%) China (10%)	14.2bn (47%)	Global Roundtable for Sustainable Beef; Rainforest Alliance
Soy	41%	Brazil (26%) China (6%) India (5%)	47.1bn (45%)	Round Table on Responsible Soy; Association (RTRS)
Palm	100% (14%)	Indonesia (45%) Malaysia (39%)	30.9bn (100%)	Roundtable on Sustainable Palm Oil (RSPO); Rainforest Alliance
<small>(XX%) denotes percentage that is forest-friendly</small>			<small>(XX%) Tropical forest country share of global market</small>	

WOOD HARVESTING

SCALE

76,117
USD bn¹

LAG TIME

2-3 5

10 10+

MARKET TYPE



IMPACT



The extraction of wood comprises 4% of global GDP (Butler, 2012) and causes around two-thirds of tropical deforestation (Geist & Lambin, 2001). Wood is extracted for timber production, fuelwood and charcoal production.

Fuelwood is used on a daily basis by up to 1.4 billion people living in tropical forest countries. This demand is a large source of deforestation and degradation, especially in sub-Saharan Africa. Deforestation for wood extraction is also driven by international demand for timber. This demand drives an illegal market for timber, with as much as 30% of globally traded hardwood timber and plywood described as of “suspicious origin” (American Forest & Paper Association, 2004). In some countries, up to 90% of logging is illegal under existing laws (The World Bank, 2012).

Wood can be extracted both legally and more sustainably by employing practices to reduce deforestation or even maintain forest cover. These include reduced impact logging (RIL) (Tropical Forest Foundation, 2009), selective harvesting (Global Environmental Governance Project, 2009) and using degraded or deforested land to create plantations (Fleshman, 2008). In the case of RIL and selective harvesting, extraction is focussed on native forests; whereas for the latter, reforestation of degraded or deforested land can help to avoid deforestation of native forest by directing extraction away from native tropical forests.

The Forest Stewardship Council has developed a certification scheme that aims to spread the use of sustainable and legally harvested timber. In tropical forest countries, certification has not been widely adopted. There is now evidence that the improved management practices needed to achieve certification can increase the efficiency of operations. This compensates for the up-front cost of certification by improving the efficiency of a project, as well as potentially adding a price premium (Forest Footprint Disclosure Project, 2011).

1. This number is the total estimated producer value of industrial roundwood and wood fuel.

WOOD HARVESTING

COMMODITY	PERCENTAGE OF PRODUCTION VOLUME IN TROPICAL FOREST COUNTRIES	TOP TROPICAL PRODUCERS (% OF GLOBAL, BY PRODUCTION UNIT)	ESTIMATED PRODUCER VALUE IN TROPICAL FOREST COUNTRIES (USD)	MARKET-SPECIFIC INITIATIVES
Industrial roundwood	30%	Brazil (8%) China (7%) Indonesia (4%)	41.5bn (41%)	Forest Stewardship Council; Programme for the Endorsement of Forest Certification
Charcoal	83%	Brazil (13%)	Data unavailable	-
Wood fuel	82%	India (17%) China (10%)	34.6bn (72%)	-

(XX%) Tropical forest country share of global market

NTFPS

SCALE

65,879
USD bn¹

LAG TIME

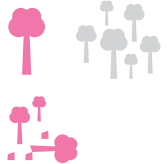
2-3 5

10 10+

MARKET TYPE



IMPACT



Non-timber forest products (NTFPs) are commodities harvested from rainforests that typically don't cause deforestation. NTFPs can range from food and food additives, such as nuts, fruits and spices, to products for medicinal, cosmetic or cultural purposes, such as resins, gums and plants (FAO, 2012). A number of NTFPs have successfully grown into large international markets, with brazil nuts, rubber and cork being amongst the largest (PRP, 2009).

Since the harvesting of NTFPs typically maintains forest cover, they can be an additional source of revenue for other projects that conserve forest cover, such as REDD+ projects. The harvesting of NTFPs is beginning to drive deforestation and forest degradation. This happens when increased demand causes harvesting to be scaled-up from native forest extraction to the development of plantations. In areas of Africa, South America and especially Asia, rubber plantations have resulted in large-scale forest loss (PRP, 2009). There is evidence that as demand for certain NTFPs increases, the impact on the forest will increase (Dangi, 2008), and can lead to the destruction of the product itself (Wickens, 1991).

Key to ensuring the sustainable harvesting of NTFPs is keeping the extraction to native forest and on a local-scale, and avoiding over-exploitation.

Most NTFPs are niche markets. If NTFPs grow to become large markets, the ability to sustainably manage them is threatened (Strassberg, 2012). Instead, to increase revenues from NTFP production, it is possible for individual projects to generate greater revenues by capitalising on their position in the Fairtrade and eco-markets.

1. This number is the total estimated producer value of bananas, brazil nuts, cocoa beans and natural rubber.

NTFPS

COMMODITY	PERCENTAGE OF PRODUCTION VOLUME IN TROPICAL FOREST COUNTRIES	TOP TROPICAL PRODUCERS (% OF GLOBAL, BY PRODUCTION UNIT)	ESTIMATED PRODUCER VALUE IN TROPICAL FOREST COUNTRIES (USD)	MARKET-SPECIFIC INITIATIVES
Bananas	96%	India (29%) China (10%)	36.6bn (94%)	Rainforest Alliance
Brazil nuts	100%	Bolivia (45%) Brazil (40%)	0.327bn (100%)	-
Cocoa beans	100%	Côte de Ivoire (30%) Indonesia (20%) Ghana (15%)	7.58bn (100%)	Rainforest Alliance
Natural rubber	100%	Thailand (31%) Indonesia (26%)	21.6bn (100%)	-

(XX%) Tropical forest country share of global market

OFFSET CREDITS

SCALE

0.524
USD bn¹

LAG TIME

2-3 5

10 10+

MARKET TYPE



IMPACT



In an offset market polluters purchase offset credits that represent equivalent reductions in environmental harm by others. Buyers are either compelled by a legal obligation or act voluntarily. Up to the start of 2011, forest carbon offsets have funded the preservation of approximately 7.9 million hectares of forest across 49 countries (Ecosystem Marketplace, 2011). A credit can also be purchased by an intermediary intending to sell on or cancel the credit. Either way the credit is a source of revenue for forest-friendly activities.

In tropical forests, offset credits can be generated for carbon, biodiversity and soon land (for land offsets see page 103). Carbon offset credits are generated by avoiding carbon emissions from deforestation or forest degradation, and by carbon sequestration from afforestation or reforestation. Forest carbon transactions are either executed through voluntary markets, or through a regulation-based market (known as a *compliance* market). The largest compliance market is the EU Emissions Trading Scheme.

Biodiversity offset credits can be generated through reforestation, habitat restoration and avoided biodiversity loss. Biodiversity offset transactions are primarily bespoke transactions occurring in voluntary markets.

The market for forest carbon offsets is currently small in comparison to other offsets. It will increase if offsets generated in tropical forests are permitted within compliance carbon markets.

1. This number is the total estimated producer value of forest carbon and biodiversity offset credits.

LAND OFFSETS

The Brazilian Forest Code requires that all rural properties in the country maintain a certain amount of land as native vegetation. These areas are called “Reserva Legal”. The amount of Reserva Legal varies depending on the region: in the Amazon it is 80%, in the Cerrado region it is 35%, in the South and Southeast region it is 20%.

In spite of this requirement, there are a large number of rural properties that do not comply with this legislation. It is estimated that there is a total of 60 million ha of land that needs to be transformed into Reserva Legal to ensure compliance.

To create Reserva Legal today is a convoluted and onerous process. Land owners have two main choices:

- reforest the area concerned by planting native species; or
- identify other land owners with excess Reserva Legal and negotiate a bilateral agreement (with no visibility of values used in other transactions), ensure that the land title of the seller is valid through consultation with a series of public notaries and land registries, obtain geo-referenced maps for the area concerned, submit and obtain approval from the relevant environmental agency and, finally, register this transaction in a public notary.

Compliance with the Forest Code, consequently, is currently hindered by the difficulties faced in the process of creating Reserva Legal.

In response to this problem, land owners can now comply using tradable Cotas de Reserva Ambiental (Legal Reserve Credits). These are certificates attesting that areas of Reserva

Legal were created (through either activities above), and can be used by third parties to comply with the law. To transact these credits, Rio de Janeiro’s Environmental Exchange, BVRio, was created. This exchange will allow buyers and sellers to have price visibility and avoid the need to singlehandedly source a credible counterparty to the transaction.

It is expected that transacting Cotas de Reserva Ambiental through BVRio will increase the level of compliance with the Brazilian Forest Code, as well as provide a new source of finance for forest protection and increase the amount of forest cover and carbon sequestration in Brazil.

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ECOTOURISM

SCALE

991,227
USD bn¹

LAG TIME

2-3 5

10 10+

MARKET TYPE



IMPACT



Ecotourism is human travel to an ecosystem to experience its natural areas undisturbed (Lindberg, 1997). Ecotourists pay to visit a tropical forest in its pristine state and by doing so fund its continued preservation. Ecotourism is based on the principles of minimising impact, building environmental awareness and providing direct financial benefits for conservation and local people (The International Ecotourism Society, 2012). Ecotourism activities can include trekking, guided tours, wildlife observation and canopy climbing.

Employment and commercial opportunities are created by the visiting tourists, and local communities, authorities and landowners can benefit from preserving the forests. Ecotourism can yield an average of USD 3.26 to USD 6.58 per hectare of standing forest per year (WWF, 2009).

Ecotourism can become a threat to forests, as successful ventures can generate demand for more hotels, roads and other facilities to support tourists and workers, and certain ecotourism activities can even be detrimental for the local habitat and culture.

Ecotourism has mainly been utilised in Africa and South-East Asia. In recent years it has begun to emerge in regions of Latin America, despite the difficulty in accessing the more interesting and remote regions of the Amazon (WWF, 2009). Globally, ecotourism is the fastest growing form of tourism, growing at three times the rate of the tourism industry as a whole. Tropical forest communities and landowners therefore stand to gain more income, environmental and social benefits from ecotourism as the industry grows.

BLENDED REVENUE MODEL

Global Green Carbon (GGC) is developing a long-term reforestation project that has the multiple aims of mitigating climate change, enhancing biodiversity, promoting microenterprise and creating sustainable blended revenue sources for poor communities. The project is located in the municipality of El Castillo, in the Rio San Juan province in south-eastern Nicaragua. The project is working with smallholders to reforest 2500 ha of degraded pastureland in the area where the current agricultural frontier encroaches on the Indio-Maíz Biological Reserve. The reserve is currently being deforested due to illegal logging operations and displaced farmers converting the forest to subsistence agriculture. GGC's project will convert unproductive land with little ecological or monetary value into forest that will provide a sustainable income in perpetuity.

The project is a 35-year joint-venture partnership between Global Green Carbon-Nicaragua (GGC-N) and approximately 500 farmers. Early on it became apparent that the project needed an integrated land management strategy that incorporates multiple sources of revenue. The primary revenues for the project are FSC-certified timber. However, this channel doesn't begin until year 10. There was therefore a need to bridge revenues in the early and middle stages of the project, with some revenues starting in years 1 to 5, then other sources of revenue starting over years 6 to 10. In addition, diversification of commodity products generated -- carbon credits, timber, cacao, plantain, bamboo -- provides increased project stability in the face of market volatility.

The land will mainly be reforested with native tree species, and a small proportion of an exotic high-value timber species. Most of the land will also be used for agroforestry, principally high-quality 'fine' cacao, as well as crops (plantain and beans) and native bamboo. The revenues coming from beans and plantain start in year 2; cacao in year 4; bamboo in year 5, the Plan Vivo Certificates sold in years 1-5; and income from sustainable timber harvesting start in year 10. The project will generate a significant, stable and diversified income for the project participants. The estimated incomes for a farmer with 5 hectares dedicated to the project is 2,100 USD/year at year 5, increasing to ~9000 USD/year by year 25 (in 2011 USD). Farmers can continue earning at this level, in perpetuity, by sustainably managing the high-value timber that will remain on the land.

The project is now transitioning from Pilot Project Phase into Implementation Phase - Stage 1. Key to ensuring that the project becomes a success is the provision of multiple revenue streams during the project's lifetime, and beyond, by blending revenues from different commodities.

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1. This number is the total estimated producer value of tourism in tropical forest countries.

DIRECT ECOSYSTEM SERVICE PROVISION

SCALE

0.0046
USD bn¹

LAG TIME



MARKET TYPE



IMPACT



Direct ecosystem service provision is carrying out actions that ensure ecosystem services are provided to a known beneficiary of those services. This activity may be carried out to improve ecosystem services that provide local benefits to the same land-users that provide them (e.g. farmers securing their own water supply by reforesting in the hills above their land). It may also be carried out as a secondary objective of directly providing biodiversity (page 107). Where ecosystem services are provided and are beneficial to users that can to some degree exclusively capture those benefits, the beneficiaries may make payments to the ecosystem services providers. In the case of direct ecosystem payments there is no creation of an offset or credit. The payer is simply paying for the continued supply of an ecosystem service, which they are directly benefiting from.

Tropical forests provide numerous ecosystem services. Payments can be made to preserve the forest and its ability to provide ecosystem services. The most common type of payment is for watershed services (PWS). This involves downstream water users paying upstream landholders to manage watersheds sustainably, thus increasing or maintaining the quantity and quality of water running downstream. Beneficiaries that have paid for such services include beverage companies, water utilities, hydroelectric power companies and even farmers (Stanton, 2010). Direct ecosystem service payments can be made wholly voluntary by beneficiaries, or they may be mediated by the public sector. In Mexico, for example, revenue generated by an increase in national water fees was earmarked to pay communities to conserve well-preserved forests at risk of deforestation (Muñoz-Piña, 2007).

Various types of organisation can manage such transactions. However, across Latin America where such transactions are fairly prevalent, they are increasingly managed by trust funds (page 76). These funds can manage national schemes (as in Mexico and Costa Rica), but can also be established on a watershed or regional basis. An example of this is Colombia's Fondo Agua por la Vida y la Sostenibilidad, which pays local farmers to maintain the forest cover of the local watershed. The fund has raised over USD 1.8 million, which has been used to conserve about 125,000 hectares (Goldman, 2010).

1. This number is the total estimated producer value of direct ecosystem water payments in tropical forest countries.

DIRECT BIODIVERSITY PROVISION

Direct biodiversity provision is carrying out actions with the specific purpose of conserving or enhancing biodiversity. In many instances this involves protecting habitat for biodiversity by establishing a protected area or nature reserve. Public agencies establish government-run protected areas, but many countries also have means through which communities or large landholders can establish privately established protected areas. Other actions help enhance biodiversity in a more targeted manner, for example, efforts that support specific species, e.g. protecting bird nests.

Direct biodiversity provision often relies on grants (see page 52) or public funding (see page 53). Across Latin America and the Caribbean only 14% of the budget for protected areas comes from revenues from their use or access (Bovarnick et al, 2010). Biodiversity provision can be linked with ecosystem service provision (see page 106), tourism (e.g., hotels and guides; see page 104) or potentially bio-prospecting (see page 109).

A form of revenue specific to this activity is the payment of fees for access to, or use of, biodiversity. Biodiversity fees are mostly generated when the provider charges individuals to carry out recreational activities in the biodiverse area. Fees can be charged for: visitors entering protected areas (entry fees); businesses providing services to tourists visiting the area (concession fees); businesses or individuals carrying out certain activities, such as hunting (permits and licences); visitors going to countries or regions of high biodiversity value (tourism-based taxes levied at hotels or airports).

Direct biodiversity fees are a useful source of revenue for tropical forest areas with high conservation value, where other activities such as the production of agricultural commodities, cannot be carried out. Such revenues depend on organisations being able to maintain the forest so the biodiversity thrives as well as their ability to attract visitors. Monies collected can then be redistributed to other areas that may be just as important for biodiversity but are less accessible (e.g. airport levy for conservation in Belize (Parker et al, 2012)).

SCALE

USD bn

LAG TIME



MARKET TYPE



IMPACT





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BIOPROSPECTING

Bioprospecting is the search within tropical forests for naturally-occurring medicines (or other products) that may be commercialised. It is normally based on a contractual agreement between organisations (e.g. pharmaceutical companies or academic institutions) and governments, landowners or indigenous communities. The global market for pharmaceuticals is worth USD 640 billion, and 25-50% of pharmaceutical products are derived from natural resources (Ten Kate, 1999).

In return, governments and forest landowners are compensated up-front and often provided with a share of the profits from any products that are later commercialised. For example, Costa Rica's National Biodiversity Institute raised USD 4.2 million through an agreement with the pharmaceutical company Merck (WWF, 2009).

Bioprospecting without due process (e.g. fair payment to the landowners) is known as biopiracy. The "Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation" included provisions for Access to Benefit-Sharing, which has placed a legal obligation on parties to the UN CBD to equitably share the benefits gained from bioprospecting (Kamau, 2010).

As a revenue-generating activity, land owners have to contend with potentially unpredictable returns. At the same time pharmaceutical companies are paying more for bioprospecting rights due to more effective benefit-sharing frameworks.

SCALE

0.0042
USD bn¹

LAG TIME

2-3 5
10 10+

MARKET TYPE



IMPACT



1. This number is the total estimated producer value of bioprospecting in tropical forest countries.



CATALYSTS

UNDERSTANDING CATALYSTS

Policy interventions, public sector support mechanisms or private sector actions – collectively referred to as *catalysts* – aim to reduce the risk and/or scale-up the finance flowing in to and out of forest-friendly activities. The catalysts are considered from the perspective of the entity providing the catalyst.

A catalyst can take many forms, but it is generally characterised by how it aims to reduce risk, improve management of finance and scale-up flows of finance. Each catalyst can target one of three areas: access to and availability of capital; assisting organisations to manage and deploy capital; or supporting the economic activities that an organisation can implement. For example, a credit guarantee supports access to capital, planning and coordination will help an organisation direct investment more effectively, whilst subsidies will support the generation of revenue from forest-friendly activities (see Figure 2).

Forest-friendly activities are affected by both how and where finance flows. This can feed directly in to high-level policy-making and the development of specific regulations. This section describes the different mechanisms for catalysing finance, and where the flow of finance can help to scale-up flows of finance.

CATALYSTS FRAMEWORK

CRITERIA

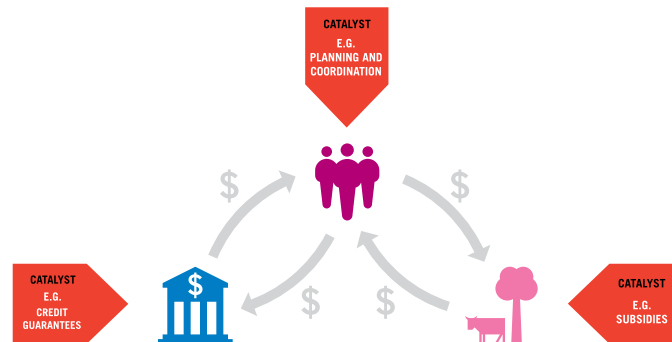
Each of the catalysts discussed in this chapter are assessed against two criteria, each of which is represented by a relevant icon. Many of the criteria are interrelated and have co-dependencies, which are explained in the text.

- **Risk:** does the catalyst involve taking on financial risk?
- **Framework:** how does the catalyst support the flow of finance through a forest project?

When assessing different catalysts, it is difficult to avoid an element of subjectivity. It is important to highlight, as in earlier chapters, that the aim is not to claim definitive and rigid characteristics for catalysts. The aim is to emphasise the *key trends and traits* that typically characterise catalysts.

The following pages explain these criteria and how they can be used to understand the catalysts.

Figure 2: Catalysts act across all elements of the framework





YES

RISK

Is there any risk of financial loss taken on by the entity providing the catalyst?

Options: Yes, No

Before providing some form of intervention that directly or indirectly aims to scale-up the finance flowing in to forests, it is essential that the catalyser understands the financial implications of the intervention. The intervention will invariably cost money, in administration costs, implementation, etc. However, some catalysts require that the provider takes on a financial risk. This can involve directly taking on debt, or the risk of not being repaid at some future date.

In some instances, risk of financial loss may be considered part of the cost of a policy, and therefore not of concern. But in others, taking on the risk of a financial loss may be an unattractive way of spending money. It is therefore important to understand if the catalyst is taking on financial risk, and if so, if this is aligned with the provider's ability and willingness to take on risk of financial loss.



NO

FRAMEWORK

This criterion illustrates where the catalyst impacts the framework.

Options: Capital, Organisation, Activity

Each of the catalysts supports a particular part of the overall framework used in the previous three chapters of the book: access to and availability of sources of capital, facilitating the flow of finance through organisations, and supporting forest-friendly activity. By understanding where each catalyst will interact with capital, organisation or activity, it is possible to understand which is most appropriate for a given forest activity, thus helping to scale-up finance and improve policy decisions.

Catalysts support capital, organisations or activity in a variety of ways, including reducing risk and increasing demand. For example, a loan can be supported by a guarantee, which works as a form of protection against financial loss to those offering the loan. This is often attractive when financing activities with higher levels of risk. Alternatively, a price floor (see page 137) may support revenue generation. This criterion improves the efficiency of catalysing finance by targeting action at sources of capital, organisational types and forest-friendly activity.



CAPITAL



ORGANISATION



ACTIVITY

A GUIDE TO CATALYSTS

RISK



FRAMEWORK



The following pages present a guide to fourteen catalysts for scaling up and facilitating the flow of forest finance, using the framework presented in the previous section. Each criterion is represented graphically using the icons shown overleaf. They represent the main options from the analytical framework, and have been grouped into their respective criteria.

The icons will be presented to the side of each proposal in an 'icon bar' shown here on the left. Not all proposals aim to define all of the criteria of the framework. To simplify matters, all icons in the icon bar will be greyed out by default and only the options that are explicitly proposed in the submissions will be highlighted in colour.

For example, the 'icon bar' shown on the left indicates that for this hypothetical catalyst, there would be a no risk of financial loss and the catalyst best supports the access to capital.

KEY TO CATALYSTS ICONS

RISK



YES



NO

FRAMEWORK



CAPITAL



ORGANISATIONS



ACTIVITY

TYPES OF CATALYSTS

CO-INVESTMENT

RISK



FRAMEWORK



If a project is perceived as risky but with insufficiently high expected returns, most private investors will not provide capital. In these instances, and if the activity provides public benefits, a public sector body may offer capital. This is known as co-finance. In doing so, the public sector allows private investors to improve the risk-return profile of the investment. This makes it more attractive to the private sector, and easier for organisations carrying out forest-friendly activities to obtain the total capital needed.

The public co-investor can reduce the risk faced by other investors in two ways. First, they can provide concessional finance, improving the returns of other investors. If a co-investor is lending, they typically require a lower than market interest rate. If they provide equity capital, they can either limit their return or ensure that they absorb losses that might occur. Second, the public co-investor can offer specific expertise. For example, development banks often have strong relationships with host governments (reducing political risk) and strong due diligence and social and environmental safeguards in place (reducing commercial risks).

Many public sector finance institutions, particularly development banks, have significant experience in co-financing, and are interested in supporting forest-friendly activities. Forest-specific investors and funds, however, are not as advanced in their ability or willingness to offer co-finance, although some make concessional investments with the private sector. The Forest Investment Program (FIP), for example, can provide equity capital that could take on a first loss position, but only to another fund rather than a particular project (CIF, 2010).

Co-investment can catalyse access to various sources of capital. However, co-investment from large forest-specific multilateral funds, such as FIP, can often be limited to deposits in large funds that finance and/or implement eligible forest activities. Although this is an important conduit for finance flowing in to forests, smaller scale co-investments are also important to help smaller forest-friendly enterprises grow (for example, see page 123 on accessing small-scale equity capital for sustainable forest management).

ACCESS TO EQUITY CAPITAL

Tropical rainforests can be managed both sustainably and profitably, and without a dependence on carbon revenues. However, sustainable forestry enterprises do need equity investment, and this type of forest management can only be scaled-up if more investors allocate equity capital to the sector.

Green Gold Forestry (GGF) is a private sustainable forestry company operating in Peru. GGF's business plan emphasises scale, vertical integration of forest concessions and sawmill, and a commitment to best practice and social and environmental responsibility.

GGF has no plans for carbon finance, which it perceives as being too uncertain and as having high transaction costs. The company is focused instead on building revenues from sales of its premium quality hardwood products in international markets.

GGF was founded in 2007 and manages 110,000ha of forests in Loreto, Peru's largest region. GGF has achieved Forest Stewardship Council (FSC) certification for forest management and for chain of custody. The company works closely with international NGOs and is developing a programme of community forestry, sharing GGF's forest management expertise.

To date GGF has sourced most of its funding from a small number of private individuals, who have provided equity and loans. GGF's strong capitalisation has enabled it to access equipment leasing finance at low interest rates.

Increasing individuals' investment in sustainable forestry will be difficult to achieve in any great size. To scale-up, what is required is more equity investment from institutional investors and development institutions, especially in the USD 3 to 5 million range. Sustainable forestry can generate attractive risk-adjusted returns, but few fund managers have relevant expertise or experience. Investors need to understand the sector better, including how risks can be mitigated through best practice and certification. The relatively small investment amounts that sustainable forestry requires also present a hurdle, as many investors prefer to prioritise larger deals given limited transactional resources.

Equity investment can unlock the sustainable management of large areas of forest. As GGF illustrates, well-capitalised companies can access loans or lease finance. Governments could support sustainable forestry and bridge the investment gap by fostering public-private-partnerships that contribute equity funding to businesses, for example through government sponsored venture capital funds.

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CREDIT GUARANTEES

RISK



FRAMEWORK



A credit guarantee is a promise by a third party (the *guarantor*) to repay the creditor if the organisation that has borrowed money fails to repay (i.e. they *default*). The agreement can be for the full amount to be repaid or for a defined portion of it. The latter helps to balance the risk between the investor and the guarantor. By providing assurance that lenders will be repaid, at least in part, the guarantor accepts some the risk of providing capital. The guarantor charges an up-front fee (a *premium*) for this service.

Credit guarantees directly reduce the risk for investors, making the investment more attractive and easier for the project or organisation to access capital. Guarantees are typically offered by publicly-funded organisations to stimulate investment in sectors that serve the public interest. For example, many countries have made partial credit guarantees “a central part of their strategy to alleviate small to medium size enterprises’ (SMEs) financing constraints” (Beck et al, 2008).

Providing credit guarantees is key to catalysing investment in forest-friendly development (Gaines and Grayson, 2009). The public sector can use or support credit guarantees in three ways. First, credit guarantees could be extended to forest-friendly activities with a high risk of default. International financial institutions are often best placed to provide credit guarantees. Many are now looking to support forest-friendly development. For example, USAID’s Development Credit Authority has provided credit guarantees for SMEs in the forestry sector (USAID, 2012), and the International Finance Corporation could support climate-smart development using partial credit guarantees (Climate Finance Options, 2012).

Second, since low awareness and bureaucratic complexity are barriers to utilising existing guarantors (Gaines and Grayson, 2009), governments could raise awareness of existing guarantors and improve processes for accessing credit. Third, premiums for credit guarantees could be paid in full or in part by the public sector, in which case the private sector may offer credit guarantees since the premiums could be higher than market rates.

FORWARD CONTRACTS

RISK



FRAMEWORK



A forward contract is an agreement between a seller and buyer to exchange a pre-determined amount of a good, at a pre-determined price, on a specified future date. It reduces the risk to sellers of not receiving enough revenue because they were not able to sell enough of the good at a price they can accept. It also reduces the risk to buyers of not being able to buy enough of the good they need at a price they can afford. Forwards are customisable, and vary depending on the particular needs of the buyer and seller. Both the price and quantity specified in the contract can be fixed, variable or a combination of both.

Forward contracts can directly support forest-friendly activities by guaranteeing a buyer for forest-friendly goods, such as certified cocoa or forest carbon credits. By guaranteeing that an activity will receive at least some revenue, the activity is more likely to succeed. This reduces the risk for investors, and makes capital easier to attract. For example, forward contracts can sometimes be used to help secure a loan. This is particularly helpful in cases where a large, liquid market does not exist and/or demand is relatively weak, such as for forest carbon. A forward contract requires the buyer to take on a risk of financial loss, because there is a risk of under-delivery of forest-friendly goods.

Where a large, liquid market does not yet exist, the private sector are less likely to sign forward contracts and public funds will likely be used. The World Bank’s BioCarbon Fund specialises in signing forward contracts for the purchase of forest carbon credits. The credits are not yet eligible for a compliance carbon market, but are anticipated to be so at a future date. In contrast, markets for certified goods are larger and more liquid (see pages 96-100). Here the private sector may be more able and willing to sign forward contracts. For example, timber funds can sign forward contracts with landowners for certified timber (though some funds buy land to grow trees and thus already own the timber produced (Cooper, 2011)).

CLARIFYING PROPERTY RIGHTS

RISK



In many countries ownership of forest land is poorly defined, and the usage rights of forest resources are not delineated by law. Few countries have developed legal guidelines that explicitly determine who holds the rights to use and/or sell ecosystem services.¹

FRAMEWORK



This lack of clarity limits security for landowners and resource users. Poor security of property rights discourages investment in forest projects as it increases the transaction costs. Ascertaining customary ownership and obtaining Free, Prior and Informed Consent can result in high costs for project developers where rights and tenure is uncertain, and increases the risk of not obtaining a return on investment (Robinson et al, 2011).

Where rights and tenure are insecure, resource owners and users may also be excluded from projects by more powerful interests (e.g. companies, major landowners), or may receive a disproportionately small income from activities. This can exclude traditional forest owners from project activities, which can be detrimental to effective sustainable forest management, and foster corrupt practices in public agencies by enabling the sale of concessionary rights without due diligence. It can also create perverse incentives, whereby traditional forest owners are forced to engage with black markets in forest resources, or to continue unsustainable practices to secure their livelihoods (e.g. harvesting fuelwood).

Reforming or clarifying forest property rights, with specific reference to ecosystem services tenure, is a crucial policy intervention. Reforming and ensuring property security rights will: ensure a reduction in deforestation and degradation rates where forest tenure is secure, regardless of the precise form of forest tenure; catalyse an increase in the capital available for sustainable forest projects (in particular REDD+); and support the engagement of traditional forest owners and resource users in forest projects, which will have a positive impact on the effectiveness of project implementation, and the transfer of equitable benefits to forest users.

¹. Property rights in this context encompass all types of tenure and rights of the land and associated resources and benefits.

SOCIAL AND ENVIRONMENTAL OUTCOMES

Plan Vivo includes a certification standard, oversight system and supportive network for projects. It uses in-country coordinators to work with rural communities in less developed countries, designing and managing land-use activities that restore their local ecosystems and improve livelihoods.

In Plan Vivo projects, smallholders and community groups develop plan vivos (land management plans) for their own land. Activities include planting native and naturalised trees in woodlots, agroforestry systems and orchards, protection of natural forests and other land-based ecosystem restoration. Communities receive training and staged payments for following their plan vivo – a Payments for Ecosystem Services (PES) model. It is a performance-based system through which communities can reduce their vulnerability to climate change, diversify incomes, improve their access to timber and non-timber forest products, and protect their local ecosystems and biodiversity. Climate benefits of projects are quantified and sold as Plan Vivo Certificates in the voluntary carbon market.

Key factors associated with project success have been strong local coordinating institutions with good community relationships, via established local structures such as farmers' cooperatives or women's groups. Through this model of blending environmental and social outcomes, using strong local coordinating institutions, small community-led programmes can reach the landscape level and channel significant amounts of funding to small-scale farmers and poor communities.

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EXCHANGES AND CLEARING HOUSES

RISK



FRAMEWORK



A clearing house links projects with the financiers looking to provide capital to a project, whereas an exchange links the buyer of an ecosystem service with the seller. They both facilitate transactions through some central point, e.g. a website. The seller or project avoids the risk of being unable to find a buyer or financier, whilst the buyer avoids the risk of being unable to purchase an ecosystem service that may be required for compliance with regulation.

Because clearing houses link financiers and projects, they do not involve a trade in a good or a service. Instead a financier provides capital to a project (for example, see the CBD Life Web Initiative). Exchanges involve a trade in an ecosystem service and provide revenue to the forest-friendly project.

Clearing houses are particularly useful for forest-friendly projects because they can increase the access to and availability of capital. This capital is often in the form of grants, and access to equity, bonds and loans is unlikely to be helped using clearing houses. They are nevertheless an important tool for facilitating flows of finance for markets that are not yet fully developed, where projects do not use standardised metrics of exchange, or in markets where transactions tend to be one-off, bespoke purchases (Parker et al, 2010). In contrast, exchanges are useful where the units of exchange can be standardised and where transactions tend not to be bespoke purchases, e.g. ecosystem service markets such as carbon.

BILATERAL AGREEMENTS

The Governors' Climate and Forests Task Force (GCF) is an alliance of seventeen states and provinces from the U.S., Brazil, Indonesia, Mexico, Nigeria, and Peru comprising more than 20% of the world's tropical forests (and accounting for some 75% of Brazil's and more than half of Indonesia's tropical forests). The GCF has been working since 2009 to synchronize efforts across tropical forest jurisdictions to develop policies and programs at the jurisdictional scale that provide realistic pathways to forest-maintaining rural development—from pay-for-performance finance, including carbon markets, to the ongoing efforts to de-carbonize agro-food supply chains. State-level activities are among the most important examples of innovative efforts to develop regulations and programs that will slow, halt, and reverse deforestation. However, the vast majority of international REDD+ finance has been channelled to national level efforts, leaving states without sufficient financial, technical, and institutional support for their REDD+ programs.

The GCF and its members are approaching the financial aspect of this challenge from several angles. They include establishing a GCF Fund and supporting the acceptance of international forest carbon offsets in emerging cap-and-trade systems, with an initial focus on California's scheme. In 2010, GCF members California (U.S.), Acre (Brazil), and Chiapas (Mexico) signed a Memorandum of Understanding on Environmental Cooperation (MOU) focused on developing technical, legal, and procedural recommendations to ensure that subnational forest sector emissions reductions could be considered for inclusion in the California scheme.

If and when included, California's approach to international forest carbon offsets will not only create demand for forest sector offsets between now and 2020, but will also provide a proof-of-concept model to other jurisdictions on how to generate high-quality, relatively low-cost offsets.

These types of bilateral or multilateral agreements could help stimulate the ongoing evolution of subnational cap-and-trade systems in other parts of the world, indirectly supporting revenue generation for forest projects/programmes. This would deliver much-needed support to the development of forest/REDD activities, and at the same time generate valuable input for the design and implementation of national and international regimes.

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TECHNICAL ASSISTANCE

RISK



FRAMEWORK



Technical assistance (TA) is the provision of expert guidance, knowledge or training from one organisation to another, or to specific individuals. The purpose is to provide expertise on specific technical issues to increase project management efficiency and effectiveness. TA can have a broad focus (e.g. supporting the development of national REDD+ readiness proposals) or can be targeted at specific technical needs (e.g. establishing carbon emission baselines). TA can also support the development of capacity within an organisation, for example to manage budgets.

TA reduces the operational risk for investors and forest project stakeholders by increasing the likelihood of securing returns on initial investments and successful project outcomes. TA can be a contractual requirement for some organisations to grant access to certain forms of capital for forest projects. TA can also catalyse positive impacts beyond the technical focus, for example by supporting transparency in financial transactions, and improving project governance.

TA is generally provided by public agencies (see page 75) and international non-profit and non-governmental organisations (see pages 70-71) to other public agencies, private and community enterprises. TA flowing from private to public sectors is currently limited (Pate, 2007). Private sector organisations could provide TA for public agencies in areas such as timber tracking, forest MRV, and transitions to sustainable agriculture. Most TA is provided by the public sector for forestry through existing ODA commitments. The provision of TA in the forestry sector is vital in meeting the targets in the UN Conventions on Biological Diversity and Climate Change.

Despite initiatives to increase cooperation among developing countries to deliver TA (e.g. the Marrakech Declaration¹) this is still under-utilised. Catalysing improved coordination of TA and encouraging partnerships for capacity building between the public and private sector will facilitate effective and efficient flows of forest finance.

1. See <http://www.g77.org/marrakech/Marrakech-Declaration.htm> for more information.

NATIONAL PLANNING AND CO-ORDINATION

RISK



FRAMEWORK



Coordinated national planning for forest-friendly development and 'green growth' involves forming and implementing national plans that integrate the future planning needs of relevant public agencies (see page 75) to achieve environmental, as well as economic, objectives.

National plans should ideally be developed with all input from all relevant government departments and extensive stakeholder consultation. These plans (e.g. the Dominican Republic's climate compatible development plan¹) describe the future resource development needs of public agencies and the activities allowed in different areas of the country.

National-level integrated planning can have multiple benefits for forest-friendly development. These include: stimulating private sector capital investment by reducing operational risk (e.g. timber companies are able to align their strategies and expectations to match national development plans); highlighting a scarcity of resources (e.g. a shortage of available land for sustainable agricultural commodities could demonstrate the need for intensification); highlighting areas where TA is required; enabling national NGOs and international non-profits (see pages 70-71) to coordinate forest projects and avoid duplication; and highlighting gaps in planning legislation (e.g. ecosystem service rights and tenure – see page 126). By developing a coordinated national planning process, wider governance reform and public sector transparency are also improved.

New tools and planning measures will likely be needed to support integrated planning for forest-friendly development (Ping Low, 2011), such as vulnerability assessments, ecosystem service valuations, and environmentally extended input-output models. Measurement, reporting and verification (MRV) systems and frameworks may also be needed to monitor long term performance (CDKN, 2011). In the immediate and medium-term technical assistance (see page 130) and technology transfer will be needed to support the use of these tools.

1. See <http://www.thereaddesk.org> for more information.

INSURANCE

RISK



FRAMEWORK



If there is a risk that an event such as a natural hazard, breach of contract or war will cause an organisation to lose money, it can take out insurance to protect itself against this loss. The provider of insurance is known as an insurer. If an eligible event occurs, the insurer will cover some or all of the financial losses. In exchange, the organisation will make a periodic payment to the insurer, called a premium.

There are two types of insurance related to forests: commercial and political risk. Commercial insurance is provided to businesses, typically covering financial losses that are a result of operational problems (e.g. natural events, such as forest fires, droughts or floods). This is pertinent because many forest-friendly activities are new and/or depend on the provision of ecosystem goods or services. Political risk insurance covers financial losses due to political decisions, such as regulatory changes, removal of concessions or asset appropriation. This offer cover for organisations working in tropical forest countries many of which have high political risk (Cranford et al, 2011).

Political risk insurance can also indirectly support an organisation's access to capital (e.g. by providing equity investors with greater surety of dividend payments).

The availability and use of insurance can support forest-friendly development in three ways. First, more extensive and greater amounts of commercial insurance can be offered to organisations that are either producing agricultural commodities in a sustainable way, or are implementing ecosystem-based projects, such as a carbon project. Second, the public sector could help private financial institutions to provide commercial insurance for forest-friendly activities. This can involve, for example, subsidising the premiums paid to private sector insurers or paying the premiums themselves. Third, public sector financial institutions could offer political risk insurance. This type of product is already offered by a number of public organisations, notably OPIC (see page 133).

POLITICAL RISK INSURANCE

Political risk insurance protects the policy-holder against acts of political or social disruption leading to loss of investment value. Political risk insurance covers two broad categories of risk: expropriation and political violence.

Expropriation coverage protects against nationalization, confiscation and creeping expropriations by the government, which results in a loss of the investment. Political risk coverage protects the investor's property against damage (e.g. a carbon producing forest incurs a politically violent act that destroys the forest).

Political risk insurance can mitigate many aspects of country risk, which is often high in countries with forest carbon investment opportunities. But there are two specific risks that concern forest carbon investors that can also be minimized with political risk insurance: 1) government repudiation acts; and 2) change of law.

Most host countries lack laws that clarify carbon ownership, a prerequisite to investment. Projects will generally secure carbon ownership through signing an agreement with the host government to confirm the project proponent's right to develop and own or use the carbon. If the government rescinds the rights granted under this agreement, the expropriation insurance would protect the insured.

Forest carbon projects are also very exposed to change of law, given the uncertainty of international and host country forest carbon regulations. As forest carbon regulations develop and are adopted by governments, they could negatively impact a project's

carbon value if: 1) the host government makes carbon a sovereign asset without a benefits distribution model that pays for verified emission reductions generated by the project; 2) the reference emission levels set by the foreign government do not reflect the actual baseline of a project area; or 3) there is no grandfathering of projects into the jurisdictional regulations. The Overseas Private Investment Corporation (OPIC) is working on an insurance product that protects investors from expropriatory changes in law.

The first REDD political risk insurance contract was underwritten by OPIC on an investment made by Terra Global Capital in a project in Cambodia in June 2011. The Multilateral Investment Guarantee Agency (MIGA) has also expressed an interest in underwriting REDD risk. Both OPIC and MIGA require that insured projects comply with their social and environmental standards.

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CERTIFICATION

RISK



FRAMEWORK



Certified goods are produced to meet a set of environmental and social standards. Certification adds value to a product, possibly including a price premium. It provides consumers that are willing to pay higher prices for certified products with information that allows them to differentiate products. For example, certification through the Forest Stewardship Council can add a price-premium to timber that is purchased by consumers interested in certified timber (FSC, 2012). Certification carries costs, but improves reputational risk and can lower operating costs for organisations by helping ensure they are in compliance with, for example, the Lacey Act in the US, and timber legislation in the EU.

Products are certified when they meet environmental criteria set by a certification body such as a commodity roundtable and validated by a third party. Commodity roundtable members include producers, traders, retailers and civil society. As standard-setting bodies mature and grow, they are aiming for certified products to capture a greater market share. The Roundtable on Sustainable Palm Oil currently certifies 11% of the world's palm oil production and the FSC currently certifies 2% of tropical forest land (UNECE/FAO, 2012).

Certification systems have been criticized for benefiting large producers. Small-scale, community and family producers typically lack the technical knowledge and finance to adhere to the standards. A number of roundtables are working to address this issue, which may require external financing. The FSC, for example, offers an advisory service that helps reach certification, tailored to each particular project.

Certification has largely been advocated by environmental NGOs, who have developed campaigns to increase the proportion of consumers that actively seek certified products. These campaigns have operated in two ways. First, by driving consumer activity, prompting companies to react. Second, by helping companies to consider certification before the risk of losing customers becomes a reality.

FOREST-FRIENDLY PROCUREMENT

RISK



FRAMEWORK



Forest-friendly procurement policies ensure that the materials or products an organisation is procuring have been harvested, manufactured or delivered in a forest-friendly way. They can reduce both the reputational risk and the operating costs of the procuring organisation (e.g. a furniture manufacturer). This can increase demand for the forest-friendly good, supporting revenue generation for forest-friendly products.

Forest-friendly procurement is most successful when accompanied by a clear public statement of the organisation's policy. By stating their policy, potential customers are able to understand the benefits of choosing that organisation's products. Retailers can communicate the forest-friendly life-cycle of goods they sell.

When organisations adopt more forest-friendly procurement practices, other companies in the industry that procure similar forest products often follow. In addition, companies that have implemented traceability systems to complement their forest-friendly procurement policies have made efficiency savings, improved supplier relations and increased market share (Bondy, 2004).

DOMESTIC TRADE LAWS AND AGREEMENTS

RISK



FRAMEWORK



Trade laws are domestic controls on goods that are traded in or out of a country. Voluntary Partnership Agreements (VPAs) are bilateral agreements to control the trade in specific goods exchanged between two countries. Trade laws and VPAs applied to forest goods and services directly restrict the supply of unsustainable, illegal or uncertified commodities reaching consumers. This can indirectly increase the demand for forest-friendly goods and services as consumers are faced with a restricted supply from the unsustainable market. Since the trade in illegal goods can suppress prices, trade laws and VPAs can also raise the price of forest-friendly commodities.

Governments can negotiate VPAs with trade partners, or they can form part of wider plans or policies to control trade in unsustainable goods. VPAs are used by the EU and its trade partners to control the trade in illegal timber. They are a core part of the EU's Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan. Countries that have signed a VPA must present a licence to verify the legality of timber they export to the EU (European Commission, 2012).

Trade laws are introduced unilaterally by a country. For example, the US Lacey Act makes it illegal to deal with or trade in timber that is produced illegally outside of the country (Union of Concerned Scientists, 2012).

Currently, trade laws and VPAs are applied only to the trade in illegal timber. Governments could increase support for forest-friendly activities by introducing trade laws and using VPAs to restrict the supply of unsustainable timber and/or agricultural commodities, such as beef and palm oil.

PRICE FLOOR

RISK



FRAMEWORK



A price floor is a minimum price for a good or a service. A price floor can be applied at many different levels, ranging from an entire market to a single transaction. Many forest-friendly activities generate revenue from markets that are either volatile (e.g. agricultural products) or new where demand is weak and/or prices low (e.g. forest carbon markets). A price floor ensures a minimum expectation of revenue. This reduces price risk, making the activity more attractive to forest-level organisations and potential investors.

There are two ways to implement a price floor. First, governments can use legislation to artificially create minimum prices for forest-friendly goods, similar to the minimum wage in many OECD countries. Depending on the country and market in which it is applied, this could cause economic inefficiency by artificially distorting price signals.

Second, governments or the private sector can promise to purchase a given quantity of a commodity if it drops to a pre-defined price. This is known as writing an *options contract*, a common type of contract used in commodities markets. The public sector could provide capital to forest-specific funds that write options contracts or write the contracts themselves. The writer of an options contract takes on no risk of a financial loss, unless they plan to resell the commodity or use it in the operations of a company (as opposed to, for example, cancelling forest carbon credits). In this case there is a risk that the buyer could purchase the commodity at a price that is above its current market price.

Options contracts are already used by the public sector in Europe. When excess produce causes a drop in prices below a given *intervention level*, government agencies buy produce – thus restricting supply – to prevent further drops in price (European Commission, 2012). In contrast to the first mechanism, this requires the government to potentially pay-out unspecified sums of money. However, the benefits of supporting a nascent market may outweigh the debt burden placed on the state.

SUBSIDIES

RISK



FRAMEWORK



A subsidy is a payment or in-kind support provided by a government to a company, typically driven by a policy. For example, governments may give money to farmers based on the amount of crop they produce, to keep farmers employed and food prices low. If a subsidy is targeted at a private company, it can subsidise the payments made to the company for its outputs – i.e. its products or services. This is referred to as subsidising production. When subsidising production, a company receives a payment based on the number of output units, and the company can generate more revenue. Production subsidies can support forest-friendly development if they are targeted at companies engaging in forest-friendly activities, or if subsidies are redirected away from industries such as unsustainable agricultural production.

Alternatively, a payment can be made to the end consumer of the company's output (the product or service). This is referred to as subsidising consumption. Consumption subsidies support forest-friendly development by lowering the price paid by consumers for forest-friendly goods, thus increasing demand for the goods.

A subsidy can also target the inputs to a company's operations – either the physical inputs or the capital inputs. Subsidies for capital inputs can be provided to financial institutions to support either the premium payments for insurance or a credit guarantee (discussed on pages 124 and 132), or the interest payments on a loan. The latter, known as subsidising credit, pays a bank an amount that partly or fully covers the interest payments of the loan. The borrower gains increased access to capital and the lender potentially receives a greater than market rate of return. Countries such as Brazil have used credit subsidies to redirect loans towards agricultural producers, developing a strong agricultural industry, but often at the expense of forests. Credit subsidies can increase access to capital for forest-friendly development if the volume of credit subsidies for forest-friendly activities is increased, or redirected from activities that support forest destruction.

TAX INCENTIVES

RISK



FRAMEWORK



Positive tax incentives are a credit or an exemption to a specific tax that would normally be levied on an enterprise. A tax credit is a reduction in the total tax payable to the government, whilst an exemption relieves the taxpayer of any payment to the government. Positive tax incentives are generally granted to either an individual or a business, and for differing purposes. Similar to subsidies (see page 138), a policy goal will be driving the use of positive tax incentives. For example, to support growth in the certified timber market, the government may grant tax incentives to landowners that produce certified timber.

A positive tax incentive can support both the profitability of a forest-friendly activity and/or an organisation's access to capital. For example, a positive tax incentive can reduce the taxes paid for both the physical inputs to (e.g. raw materials, chemicals, etc.) and the outputs from (e.g. certified timber, carbon, etc.) a forest-friendly organisation's activities. This reduces the operating costs of a forest-friendly activity, thus lowering the risk that an activity will be unprofitable. Alternatively, a tax incentive can reduce the taxes paid by investors in the project (e.g. the taxes on interest payments to a creditor offering a loan). This in turn lowers the cost of sourcing capital and reduces the risk of lower than expected returns to the investor.

CONCLUSION

CATALYSING FINANCE FOR FOREST-FRIENDLY DEVELOPMENT

This book analyses the flow of finance for forest-friendly development. Below, we summarise the key **issues** limiting that finance today, and highlight the specific **catalysts** (see fold-out inside front cover for page references) that the public and private sector can use to take it to scale.

COLLATERAL, OWNERSHIP AND DELIVERABLES

Issue: Capital for forest-friendly activities is largely in the form of grants, loans and balance sheet capital from public organisations. There is greater potential to access bonds, equity and private sector balance sheet capital, however these are dependent on providing collateral, ownership or deliverables to investors, and their perception of risk and expected return.

Catalysts: Risk can be lowered, or collateral, ownership and deliverable requirements relaxed, using the following catalysts: Co-investment, Credit Guarantees, Forward Contracts, Clarifying Property Rights, Technical Assistance, National Planning and Coordination, Subsidies and Tax Incentives.

EXPERTISE

Issue: Access for forest-friendly activities to traditional sources of large-scale capital – such as equity, loans and bonds (of the order of trillions of dollars globally) – often requires out-of-house expertise, which can be difficult to access and costly.

Catalysts: Public-sector provision of Technical Assistance can lessen the need for out-of-house expertise, and establishing forest-friendly Exchanges and Clearing Houses can make larger-scale capital easier to source.

RISK-RETURN EXPECTATIONS

Issue: Companies and Trust Funds could effectively deploy and manage forest-friendly capital at scale, but the levels of return expected by their investors limit the attractiveness of this emerging sector.

Catalysts: Risk, and therefore return expectations of private investors, can be lessened by the public sector using Co-investment, Credit Guarantees, Subsidies and Tax Incentives.

ACCOUNTABILITY AND DECISION-MAKING

Issue: Co-operatives and Community Organisations are important for forest-friendly development, but often perceived as risky by investors because of their downward accountability and decentralised decision-making.

Catalysts: Investor perceptions of decision-making and accountability risk can be lowered by the provision of particular types of specialist Insurance.

REVENUE GENERATION

Issue: Existing activities that cause deforestation or forest degradation may be more profitable than forest-friendly alternatives, making a transition unattractive for some.

Catalysts: Forest-friendly revenue generation can be improved using Forward Contracts, Technical Assistance, Insurance, Certification, Forest-friendly Procurement, Domestic Trade Laws and Agreements, Price Floors, Subsidies and Tax Incentives.

REGULATION

Issue: The development of forest-friendly regulatory frameworks is a complicated and lengthy process.

Catalysts: Forest-friendly development need not depend on regulation. Strong public-sector incentives and the right private sector actions can suffice: Forward Contracts, Insurance, Certification, Forest-friendly Procurement, Price Floors, Subsidies and Tax Incentives.

ANNEXES

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