

Financing sustainable forest management in developing countries: the case for a holistic approach

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SUMMARY

Financing has been one of the primary topics of ongoing discussions on sustainable forest management (SFM) for at least two decades. Yet despite a wide array of existing data and literature, attempts to understand—let alone quantify—SFM financing as a whole remain surprisingly rare. The focus of existing research on individual flows and sectors prevents us from getting the bigger picture.

This paper attempts to conceptualise SFM financing by offering a holistic approach inspired by two complementary typologies based on the source of flows and cross-sectoral interactions respectively. Together, these two typologies contribute to a better understanding of SFM financing in three ways: first, they help visualise the SFM financing landscape, composed not only of a variety of flows but also the trade-offs and synergies between them. Secondly, they help identify a set of recommendations to improve and increase SFM financing over the long term. Thirdly, they highlight the glaring data gaps that need to be filled before any attempt can be made at quantifying SFM financing in its entirety.

Keywords: sustainable forest management, financing sustainable forest management, official development assistance, private financing, cross-sectoral financing

Vers une approche holistique du financement de la gestion durable des forêts dans les pays en développement

B. SINGER

Le financement constitue l'un des principaux enjeux du débat actuel sur la gestion durable des forêts (GDF) depuis au moins deux décennies. Cependant, malgré des données et une littérature abondantes, les tentatives pour mieux comprendre (sans parler de quantifier) le financement de la GDF sont étonnamment rares. L'intérêt porté par la recherche existante à tel ou tel secteur ou flux financier spécifique empêche une vision plus globale.

Cet article tente de conceptualiser le financement de la GDF en proposant une approche holistique qui s'inspire de deux typologies complémentaires selon la source des flux et les interactions transsectorielles. Ces deux typologies aident à mieux comprendre le financement de la GDF de trois manières en permettant (i) de visualiser le paysage du financement de la GDF qui comprend non seulement l'ensemble des flux mais aussi les compromis et synergies entre ces derniers, (ii) d'élaborer des recommandations pour améliorer et accroître le financement à long terme et (iii) de souligner les lacunes flagrantes en termes de données qu'il serait nécessaire de combler avant de pouvoir quantifier le financement de la GDF dans son ensemble.

Hacia un enfoque holístico del financiamiento de la gestión sostenible de los bosques en los países en desarrollo

B. SINGER

Durante al menos dos décadas el financiamiento ha sido uno de los temas principales de los debates en curso sobre la gestión sostenible de los bosques (GSB). Sin embargo, a pesar de una amplia gama de datos y literatura existentes, los intentos por entender—y aún por cuantificar—la GSB en su conjunto siguen siendo sorprendentemente excepcionales. El foco de la investigación disponible centrada en los flujos y sectores a nivel individual nos impide entender la situación general.

En este trabajo se procura conceptualizar el financiamiento de la GSB proponiendo un enfoque holístico inspirado en dos tipologías complementarias, basadas en la fuente de los flujos e interacciones intersectoriales respectivamente. En conjunto, estas dos tipologías contribuyen de tres maneras distintas a una mejor comprensión del financiamiento de la GSB: en primer lugar, ayudan a visualizar el paisaje del financiamiento de la GSB, compuesto no solo de una gran variedad de flujos sino también de los intercambios y sinergias entre ellos. En segundo lugar, ayudan a identificar una serie de recomendaciones para mejorar y aumentar el financiamiento de la GSB a largo plazo. En tercer lugar, subrayan las brechas evidentes en los datos que deben ser subsanadas antes de llevar a cabo cualquier intento de cuantificar en su totalidad el financiamiento de la GSB.

Financing sustainable forest management (SFM) has been subject to decades of debates at intergovernmental level, with stakeholders only agreeing on one observation: SFM is both costly and severely under-financed. Yet while some relevant financial flows are reliably quantified and well documented, others remain poorly known and the interactions between these flows are largely unstudied. Despite long-term interest in the topic, as witnessed by decades-old lively debates in international fora such as the United Nations Forum on Forests (UNFF), SFM financing *as a whole* remains badly understood, both in quality and quantity. Studies of SFM financing worldwide, across all financial flows, sectors and countries remain extremely rare (see notably AGF 2012). This further complicates the task of meeting financing needs whether at national, regional or international level.

Based on the conclusion that the whole is greater than the sum of its parts, this paper calls for a holistic approach to better understand not only the variety of financial flows, but also *interactions* between them. In doing so it builds on a growing body of literature which already advocates for increased diversification and/or integration of financing for sustainable forest management (*e.g.*, AGF 2012, Asen *et al.* 2012a, 2012b, 2012c, Castrén *et al.* 2014, Falconer *et al.* 2015, FAO 2012) and financing for development more generally (United Nations 2014, 2015b).

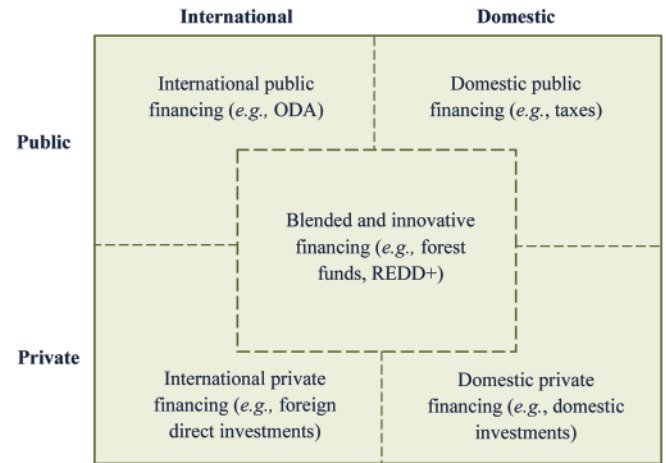
FINANCING SFM: TWO COMPLEMENTARY TYPOLOGIES

SFM financing can be broken down either by flow or by sector. The first typology is the more classic approach. It was used in the context of the means of implementation of the post-2015 development agenda of the United Nations (United Nations 2014) which proposes the following categories: international public financing, domestic public financing, international private financing, domestic public financing, and blended and innovative financing (Figure 1).

There is also emerging recognition of an alternative, cross-sectoral approach to understanding SFM financing. “Forest financing” and “SFM financing” are often used interchangeably, but upon closer inspection they differ significantly. Forest financing can be defined as all financing sources that flow into forest sector activities, including conservation, community forestry, forestry training, policies and administration, and forest-related industries, notably timber. This may include financing flows for unsustainable practices such as over-logging.

By contrast, SFM financing includes parts of, but is not limited to, forest sector financing: it can also include flows in other sectors that positively impact on SFM such as forest eco-tourism, agroforestry (often accounted as part of agriculture) and alternative energy sources (which impact on the use

FIGURE 1 *SFM financing by type of flow according to the categorisation used by the United Nations (2014). Boxes are not necessarily to scale*



of fuelwood). SFM financing can therefore be seen as a nexus between several overlapping sectors (Figure 2).¹ In addition, many other financing flows in these same sectors can have an adverse impact on SFM, intentionally or not. These flows, which also need to be taken into account when analysing SFM financing, are discussed in a separate section below.

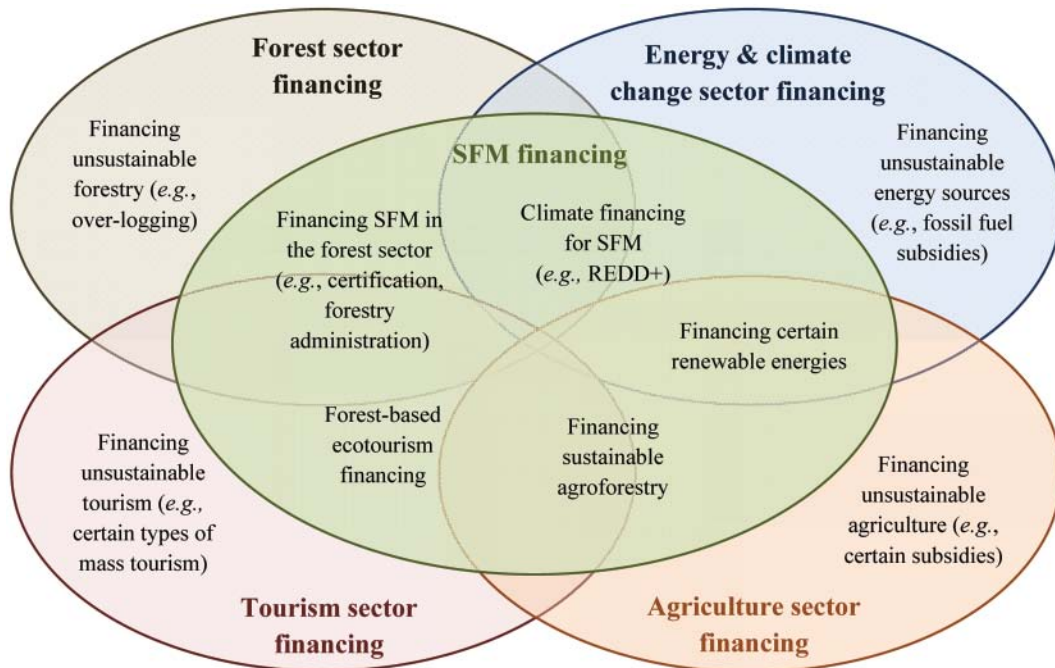
More precise operationalisation, particularly in terms of defining the borders of what constitutes a sector, and the border between sustainable and unsustainable financing is a challenge that remains beyond the scope of this paper. Definitions of different sectors (*e.g.*, forestry, agriculture, energy, tourism) vary widely between countries due to the national specificities of stakeholder networks and political and economic contexts. For instance, while one country may subsume forest conservation under “forestry”, another might include it under “environment”, while another still might see it as part of “agriculture and land management”.

In addition, defining “sustainable financing” as opposed to “unsustainable financing” boils down to establishing criteria and indicators for which, once again, there is no global consensus. In order to maintain some flexibility in its operationalisation, therefore, this paper does not attempt to define SFM financing as more than financial flows that support forms of forest management “intended to maintain and enhance the economic, social and environmental value of all types of forests, for the benefit of present and future generations” (UNFF 2007:2).

Rather than being mutually excludable, these two typologies of SFM financing can be seen as complementary. Because of the difficulty in compiling data on specific categories of SFM financing, this paper uses a blend of the “flow” and “cross-sectoral” typologies to describe the different types

¹ In this paper, SFM financing is understood as the financing of the entire set of SFM activities rather than the additional activities required to upgrade forest management from “conventional” to “sustainable”.

FIGURE 2 *SFM financing (versus unsustainable sources) as a cross-sectoral category of financing. Overlap is not necessarily to scale and sectors may vary from country to country. For the sake of simplicity, additional sectors which may also have an impact on SFM financing are not pictured here; neither is financing in other sectors that does not impact SFM either positively or negatively*



of SFM financing. The next three sections provide a rapid overview of public, private, and blended and innovative financing respectively, while the last two sections emphasise the need to analyse SFM financing as a cross-sectoral issue.²

One of the setbacks of not providing a more precise operational definition as the one above is that it makes any quantification of SFM financing a daunting task. The fact that most statistics break down financial flows into sectors rather than according to sustainability further compounds this challenge. The figures presented in this paper can only be used as a more or less reliable proxy for SFM financing.

PUBLIC SECTOR FINANCING

With current estimates placing SFM financing needs between US\$ 70 and 160 billion a year worldwide (AGF 2012:77), it is clear that public finance will not close the gap on its own and that raising additional private finance will be crucial in this respect. However, public finance can play key complementary roles, notably by fulfilling a redistributive function that natural forests in particular rely on heavily as providers of global public goods. In this sense, the public sector can

allocate financial support to aspects which private financing shies away from. This applies both to national and international public resource mobilization.

International Public Financing

This section relies primarily on data from the Organisation on Economic Cooperation and Development (OECD) on forestry-related official development assistance (ODA) which is systematically recorded in aggregate figures and on a project-by-project basis. Despite the reliability of such data, these reflect figures for the forest sector rather than SFM.³

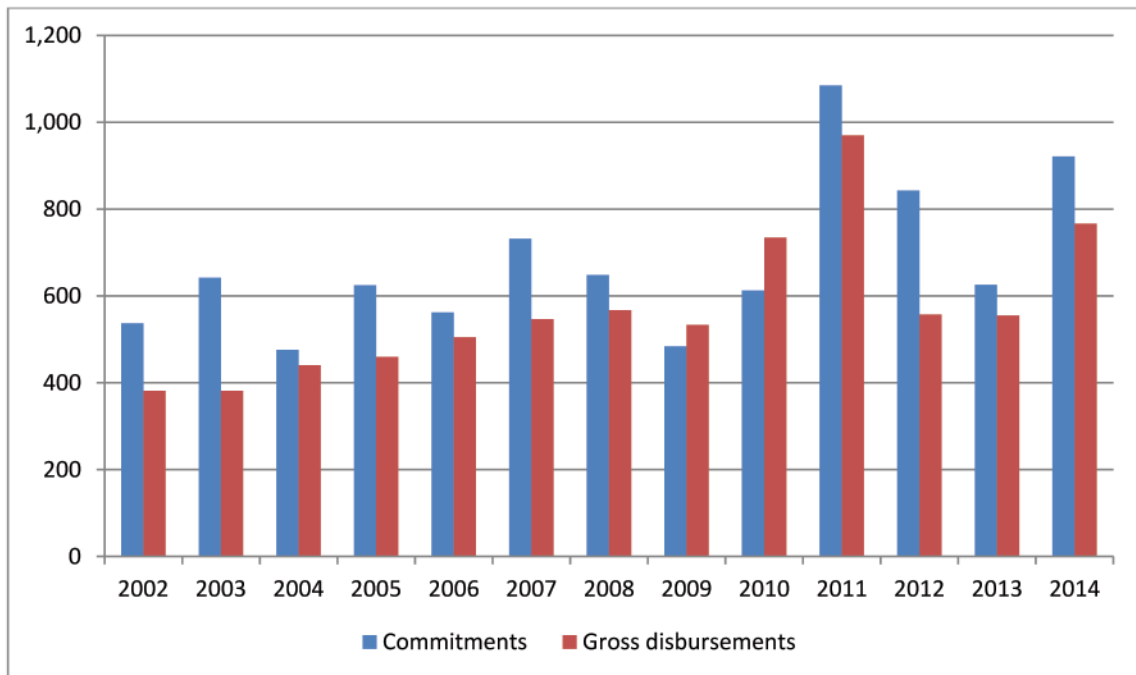
Since the emergence of SFM as an international issue in the 1980s, ODA has been perceived as the primary international pillar of its financial support. Since then, the focus of forestry ODA has fanned out in parallel with the emergence and evolution of the concept of SFM—from silviculture and biodiversity conservation in the 1980s to community forestry and good governance in the 1990s, to sustainable logging and environmental services (especially carbon sequestration projects) in the 2000s.

The importance given to ODA in the forest sector is illustrated by its prominence in international negotiations. The

² Falconer *et al.* (2015) provide a new and innovative typology based on flows but their focus on land-use climate finance limits the relevance of a comparison with the present focus on SFM as it mostly consists of flows unrelated to forests. They propose a figure of US\$ 1.2 billion in climate finance for forests in 2014.

³ One potential weakness of this methodology is that each donor uses a different definition of forestry when reporting ODA. For a discussion on the reliability of OECD data on forestry ODA, see Simula (2008:20).

FIGURE 3 Forestry ODA commitments and disbursements by year in millions of US dollars regardless of Rio markers (source: OECD 2015)



UNFF Forest Instrument⁴—the only international instrument on all types of forests to date—features the need to reverse the decline in forestry ODA as one of the four Global Objectives on Forests, alongside reducing deforestation, enhancing multiple benefits of forests and increasing protected areas.

At first, it appears that ODA has been a reliable source of financing for SFM, as shown in Figure 3, with gross disbursements ranging between just under US\$ 400 million and just over \$600 million annually with only few exceptions. If anything, OECD's latest figures show increased international commitment with ODA levels doubling between 2009 and 2011 (much of this increase coming from carbon funding).

However, when broken down, forestry ODA reveals two important pitfalls. A quick look at the largest recipients in the past 12 years (see Figure 4) shows that while official disbursements have been increasing, so has volatility, especially since 2009, which poses the question of the long-term sustainability of funds.

In most cases, sharp increases can be explained by the disbursement of a single, one-off bilateral transfer from a donor to a partner country. For instance, close to half of the forestry ODA received by China in 2011 came from the European Investment Bank as a grant for a reforestation scheme following the Sichuan Province earthquake. These

large but single disbursements contribute significantly to the volatility observed.

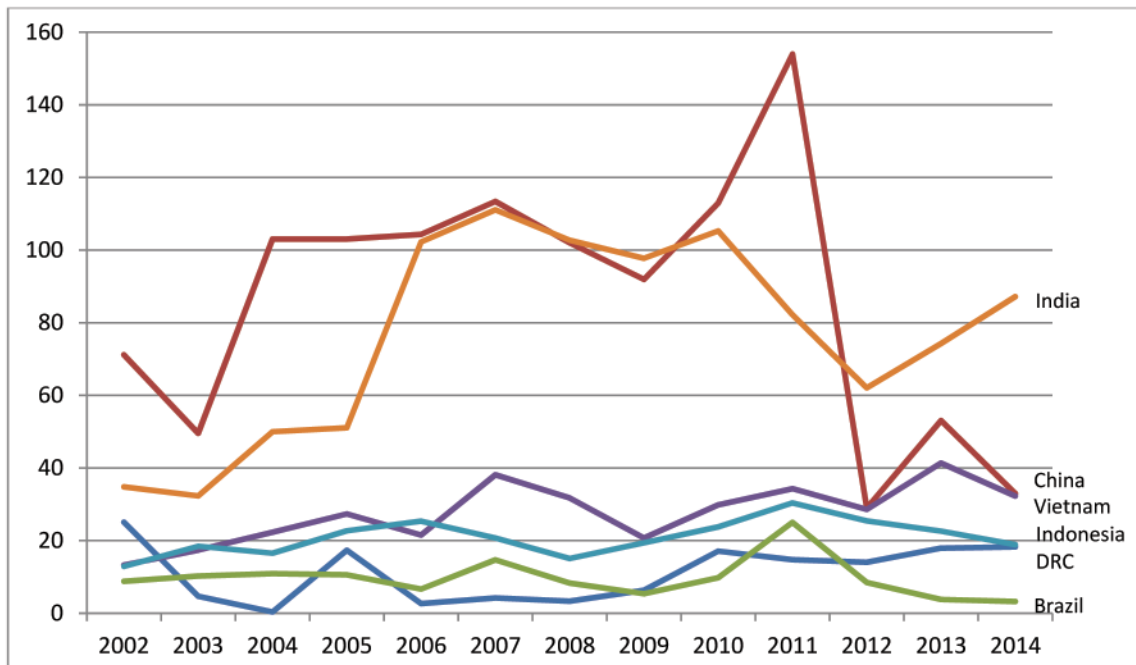
At the opposite extreme of the spectrum are the 27 countries which received no forestry ODA at all between 2002 and 2010 (AGF 2012). The majority of these are small island developing states (SIDS) and low forest cover countries (LFCCs), both of which also constitute a major gap in the existing literature on forest financing, hence their description in this paper.⁵ Put together, SIDS and LFCCs represent 40% of the world's countries but barely 4% of the world's forest cover. Despite this, forests and trees outside of forests are of crucial importance to these countries. In LFCCs, they provide clean water for people and agriculture—a vital resource in arid environments—as well as shade for livestock and a number of non-timber forest products such as shea and gum Arabic. In SIDS, they prevent erosion and mudslides in mountainous landscapes which would otherwise muddy coastal waters and deplete fish stocks which local communities crucially depend upon. Coastal forests, particularly mangrove forests, also protect against coastal erosion and thus the effects of sea-level rise, an existential threat to low-lying SIDS.

Despite this, ODA in SIDS and LFCCs either stagnated or decreased in absolute terms between 2002 and 2010. More

⁴ The UN Forest Instrument was approved by the United Nations General Assembly in 2007 (UNFF 2007). Its Global Objective 4 states that Member States agree by 2015 to “Reverse the decline in official development assistance for sustainable forest management and mobilize significantly increased, new and additional financial resources from all sources for the implementation of sustainable forest management.” In 2015, the UN Forest Instrument and its Global Objectives were renewed for another 15 years.

⁵ SIDS and LFCCs were the focus of the first project of the UNFF Facilitative Process, funded by the Global Environment Facility and UK Department for International Development, with the United Nations Environment Programme acting as implementing agency.

FIGURE 4 The “Big Six”: Evolution of forestry ODA to Brazil, China, India, Indonesia, Vietnam and the Democratic Republic of Congo in millions of US dollars. In 2013, Brazil received US\$ 670 million in forestry ODA (source: OECD 2015)



striking was the growing skew in ODA in terms of geographical allocation: the higher the global levels of ODA, the smaller the proportion was allocated to SIDS and LFCCs. The percentage of forestry ODA to LFCCs thus fell from 6.8 to 4.4 between 2002 and 2010, while the corresponding share to SIDS dropped from 4 to 1%. When one removed just 6 of the 78 countries from the statistics (Guyana, Haiti, Kenya, Mali, Mongolia and South Africa), the drop was even more dramatic: from 5.6% in 2002 to 1.1% in 2010 for LFCCs, and from 3.2% to just 0.5% of total forestry ODA for SIDS.

However, a wide range of financing opportunities exist for SFM in these countries, most of which were based on a cross-sectoral perspective of SFM financing. In most SIDS and LFCCs, there is no forest sector to speak of, either because its monetary contribution to the national economy is insignificant, or because the countries are so small that they lack the capacity to design national forest policies. Activities such as agroforestry thus represent an important source of financing for SFM. Ecotourism, especially in SIDS, also largely depends on maintaining primary forests. Finally, economic externalities, such as the importance of forests in preserving fish stocks or providing clean water, could be internalised in the form of payments for ecosystem services. Despite their small share of the world's forests, SIDS and LFCCs thus stand to play a major innovative role in financing SFM (Singer 2012).

It must be noted that forestry ODA is not necessarily indicative of SFM financing. In its credit reporting system,

OECD records ODA figures by sector, including forestry. It also uses cross-sectoral markers, notably for ODA relevant to the three Rio Conventions (biodiversity, climate and land degradation), known as “Rio markers”, but forests or SFM do not exist as a marker. This means, for instance, that climate financing for SFM is not necessarily labelled as forestry, and most REDD+ related ODA is not categorised as such. It is therefore likely that ODA figures in support of SFM (*i.e.*, inclusive of cross-sectoral interactions) are likely to be much larger than forestry ODA figures, especially in countries where most SFM financing comes from outside the forest sector (*e.g.*, SIDS and LFCCs).

Finally, very limited data is available on South-South cooperation in the forest sector. OECD for instance does not record any forestry ODA from non-DAC⁶ countries since 2002 (OECD 2016).

Domestic Public Financing

Despite the fact that domestic public financing has been identified as a “critical” source of financing for sustainable development (United Nations 2015b), it has received minimal attention from academics and decision-makers alike in the forest sector. The resolution of the tenth session of the United Nations Forum on Forests also calls for the mobilisation of “financing for all types of forests and trees outside of forests from all sources including from other sectors at the national level” (UNFF 2013:12), but it does not expand on which

⁶ Membership of the Development Assistance Committee (DAC) is generally recognized as the list of developed countries.

specific domestic sources could be tapped into; neither does it delve into the mechanisms for generating and allocating domestic funds to SFM.

The lack of attention to domestic public financing is partly due to the fact that unlike ODA, there is no systematic mechanism for collecting quantitative data on domestic resources for SFM across countries (Castrén *et al.* 2014), which include budget allocation, national funds (described in the section on blended and innovative financing) and taxation.

Some exceptions to the rule can be found, such as in Cameroon where the highly lucrative timber sector has presented an important opportunity to increase domestic public investments into the forest resource. The contribution of Cameroon's forests to the GDP excluding oil stands at some 4% but it is closer to 5.5% when all forest contributions are monetarised (Eba'a Atyi *et al.* 2013). However, unsustainable timber production is contributing to a long-term decapitalisation of the forest resource as it leads to higher returns on the short term through excessive logging but seriously compromises the long-term sustainability of these returns.

Until the 1990s, logging operations in Cameroon underwent minimal oversight while the state relied on self-declarations of timber volumes produced. As a result, natural forests were degraded, local populations lived in poverty, company profits were under-declared and channelled abroad, and the state received minimal revenue. The country's economic crisis in the late 1980s prompted the World Bank to encourage an overhaul of the concession regime as a means of increasing revenue while protecting the country's timber resource. The 1994 Forest Law brought about important changes that focused on introducing a bidding system for the allocation of concessions and reforming the sector's fiscal structure.

Figures available today show that taxes on timber production and transformation did increase by over five-fold between in the 1990s (Karsenty *et al.* 2006). Revenue dropped again to between US\$ 52 to 63 million again after 1999, but this was mainly due to a moratorium on log exports.

Among the tax reforms, an annual area fee was introduced, half of which goes to local councils and communities. Yet it quickly became obvious that the funds were not always being channelled into local development while some logging companies decided to roll back their contributions to local populations in response to additional taxes. For many, relief came instead in the form of certification which is delivered against concrete social contributions that operators make to surrounding communities.

Today, much remains to be improved as rural poverty remains rampant and the informal sector continues unabated (Lescuyer *et al.* 2012:101). However, although much still needs to be done to ensure funds are channelled effectively

into SFM, this reform highlighted the huge potential of domestic resource mobilisation for forests, particularly in countries with a lucrative timber sector.

PRIVATE SECTOR FINANCING⁷

In 2008, private investment in the forestry sector in developing countries and countries in transition was close to US\$15 billion per year (World Bank 2008), 24 times the value of forestry ODA for that year. Total private forest plantation investment alone in developing countries was estimated at US\$ 1.763 billion by Castrén *et al.* (2014:12) although 83% was directed at Latin America and only 1% at Africa (Figure 5). No data was found on private investments in tropical natural forests.

Most of the limited data presented here reflect international private financing, and little is known of private financing trends at domestic level. As indicated above, a large proportion of timber production in many developing countries comes from the informal sector, although the proportion is likely to vary significantly from country to country. For instance, Eba'a *et al.* (2013:88) indicate that the informal sale alone of Cameroonian timber produces a net annual profit of some US\$ 23 million, compared to US\$ 10.25 million from ODA in 2012 (OECD 2016).

Trends

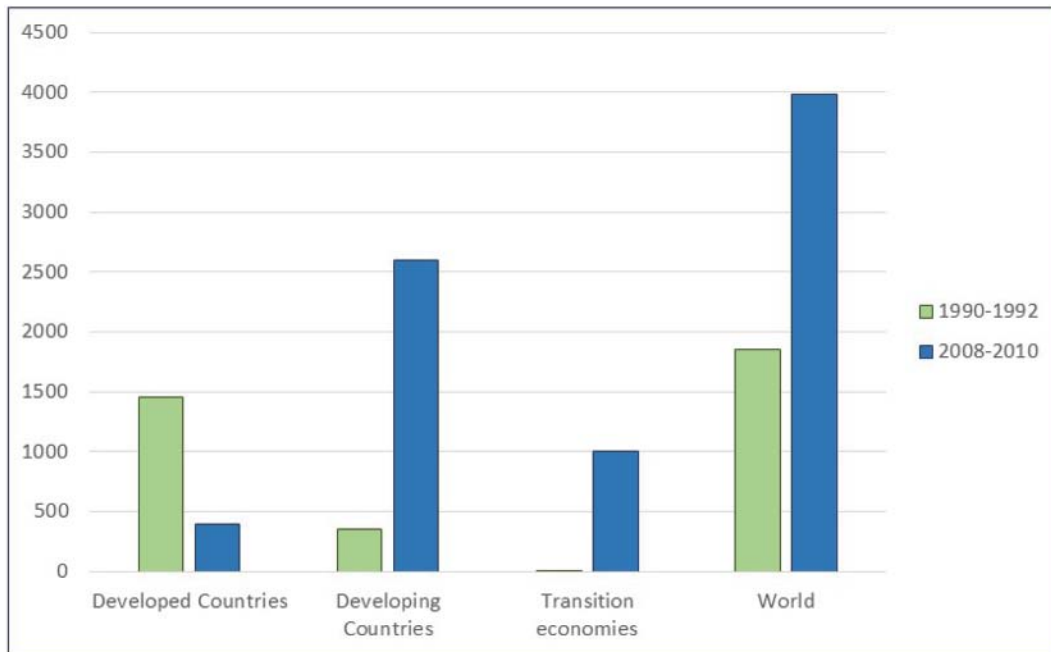
In the absence of a "sustainability marker" for private financing, this section presents figures for private financing in the forest sector as a whole, regardless of whether flows benefit sustainable or unsustainable forms of forest management.

While some figures suggest that the bulk of private investment into SFM is channelled to developed countries, with 80% directed to North America (Asen *et al.* 2012b), others seem to show that this trend has now reversed. For instance, developed economies received 81% of inward foreign direct investment (FDI) flows in 1992 but only received 10% in 2008–2010. During the same time, the proportion of global inward FDI flows to developing countries shot up from 19% to 65%. Inward FDI to transition economies also grew sharply from a negligible proportion in 1990–1992 to 25% in 2008–2010 (Figure 5).

Private financing for SFM remains a fast-growing trend with a positive outlook (FAO 2012:24). In recent years, institutional investors have grown to be the main market participants in developing countries with over 1,000 pension funds, endowments, foundations, insurance companies, families with high net worth and others (DANA 2011, Glauner 2012). From approximately US\$ 1 billion in 1983, investment in the "timberland" asset class had grown to some US\$ 50 billion

⁷ Compared to forestry ODA, the availability of quantitative data on private sources of financing for SFM is very poor (see notably AGF 2012: 30–6). This section thus focuses primarily on qualitative data provided by the latest analyses, local and global, on forest financing, and looks at both trade and investment sources of forest financing. For a more detailed and comprehensive analysis of private financing in the forest sector, see Castrén *et al.* (2014).

FIGURE 5 Global inward FDI flows to wood and wood processing in 1990–1992 and 2008–2010 in millions of US\$ (UNCTAD 2012). The source reference notes, however, that data should be interpreted with caution, as Hong Kong (China) accounted for 37% of developing economies across sectors in 2008–2010, partly because it includes data on investment holding companies. In addition, global totals are extrapolated on a basis of 79 countries in 1990–1992 and 113 countries in 2008–2010



in 2010, although most of which was in the United States (Rhinehart 2010). This growth is due to an increase in financial flows to emerging markets generally, but also to the emergence of timber investment management organisations or TIMOs (NFF 2012).

The Climate Bonds Initiative (2014) also indicated a global market of US\$ 4.2 billion in agriculture and forestry bonds, of which 95% is from sustainable paper and pulp manufacturers and SFM. The authors explain that this small figure is due to the fact that the sector does not traditionally on bonds to raise finance in the forestry sector, unlike other climate-related sectors such as transport (US\$ 358 billion in climate bonds).

Information and Partnerships

Differing perspectives on the roles and responsibilities of specific stakeholders have caused a lack of trust within the forestry community (Asen *et al.* 2012b; Whalen 2012). Some non-government stakeholders see the private sector as profit-driven to the extent that they are allegedly guilty of degrading forests, while the private sector often views forests as risky for corporate reputation rather than an investment opportunity.

This is further compounded by the different levels of information held by different stakeholders. Logging operators are often experts in forest ecology and timber growth rates but may lack knowledge about local livelihoods. Institutional investors have financial expertise but usually lack the complex technical expertise on SFM (FAO 2012:23). Civil society

and many government agencies generally have good social and ecological knowledge of forests, but are often unaware of investors' interests (FAO 2012:27).

It is often said that stakeholders in the finance and forest sectors “speak different languages”. Many have attempted to close the gap, such as the Finance Alliance for Sustainable Trade (FAST), The Forests Dialogue (TFD), the World Bank, the Programme on Forests (PROFOR) and the United Nations Environment Programme (UNEP) and, most recently, a special Global Landscapes Forum on private investment organised by the Centre for International Forestry Research (CIFOR). Such initiatives will likely need to be scaled up with the growing number of stakeholders, particularly from the financial sector.

Natural versus Planted Forests

Investors have traditionally preferred focusing on plantations rather than natural forests for at least three reasons: (i) they believe the environmental impact to be lower (FAO 2012); (ii) managing natural forests is perceived as technically more complex; and (iii) natural forests yield lower volumes and their management must carry the cost of their complex ecosystem services (Sharshar *et al.* 2012). Planted forests thus receive the lion's share of private investments in many countries. Only 1.3% of Brazil's forests are planted (FAO 2010), yet plantations received the bulk of private investments and produced 78% of the country's sawlog and veneer (Tomaselli *et al.* 2012), although admittedly, Brazil concentrates the vast majority of investment in plantations.

Within natural forests, the focus of investment in terms of forest values is highly skewed, with private investors showing a strong preference for only a small slice of the wide spectrum of values that forests have to offer. Not only do they focus on timber production but they also often practice “high-grading” (selecting a small range of species to log), leaving other valuable species under-exploited while jeopardizing the regeneration capacity of selected species. As a result, many social and ecological but also economic functions suffer from underinvestment.

However, some sustainable financing initiatives do exist in natural forests. Tomaselli *et al.* (2012) provide several examples in Brazil and argue that legality, business administration expertise and the diversification of wood products have been essential in ensuring their success. Brazil’s national development bank BNDES also contributes by providing loans to sustainable ventures. Even for BNDES, the forest sector remains a very new area, and the bank receives many requests for SFM financing. However, the lack of financial soundness of many applications still causes the bank to reject most of them, many foresters still lacking the skills to develop convincing financial plans (João Carlos Ferraz, personal communication, December 2013).

Assessing and Reducing Risk

For the vast majority of investors with no prior experience of forests, SFM—especially in developing countries—is a risky venture. Many risks are inherent to developing countries and include political instability, corruption, predictability of policies, legal and institutional infrastructure, physical infrastructure and tax policies (Haas *et al.* 2012:91). In some heavily forested countries, reactions prompted by high deforestation rates caused a flurry of legal reforms which further contributed to confusion that has driven investors away (Singer 2009).

The high level of risk in SFM is further exacerbated by the lack of clear land tenure systems. The overlap of legal and customary tenure systems makes it difficult to prove land ownership and thus legality of forest operations. In addition, given that forests remain a relatively new asset class, particularly in developing countries, the proven track record that would otherwise attract new investors is scanty at best.

Attempts to measure such risks have been poor. Many countries with high potential for investment in the forest sector are not rated by the three main credit rating agencies (Moody’s, Standard and Poor’s and Fitch). Solutions have been put forward to address this issue. Haas *et al.* (2012) suggest a risk assessment approach consisting of three consecutive standardised phases: pre-selection (screening the market to identify low-risk forest projects), due diligence (accurate risk assessment based on verified information) and monitoring (once the activity begins).

One key initiative that greatly facilitates risk assessment is certification. A certified company has verified proof not only of full legality, but also that it provides social and environmental benefits in addition to economic profits, making itself much more attractive to private investment. The company

itself is often able to offset the costs of acquiring certification by selling a product at a higher price. More importantly, certification enables to maintain or increase the company’s share of the market. To a large extent, however, certification schemes are more popular for exports and only cover a small proportion of forests in developing countries.

As a result, systemic risks need to be addressed, and the stakeholders in the forest sector cannot do this alone. Instead, a cross-sectoral and high-level political mobilisation would be needed which would involve sectors such as land management (for land tenure issues), finance (for barriers to foreign investments including tax systems and foreign exchange rates) and the top political sphere itself (for political stability and fighting corruption).

Recent trends in private financing indicate the flows to forests in developing countries have increased substantially in recent years and this trend is likely to continue in the near future. Yet two challenges remain: first, an undetermined proportion of these flows goes into unsustainable forms of forest management rather than SFM and it is difficult from existing data to infer any trends on private financing for SFM specifically. In order for flows to be re-directed to SFM, political and legal reforms would be necessary to reduce the attractiveness of unsustainable forest management and/or increase that of SFM. These could include financial incentives such as tax breaks or legal measures such as enforced prosecution for financially supporting illegal activities. Secondly, private flows could be increased significantly if systemic risks were addressed. For both types of measures to be implemented, however, stakeholders would need to reach out well beyond the forest sector to include partners in connected sectors and beyond.

BLENDED AND INNOVATIVE FINANCING

Blended and innovative financing constitutes a residual category of financing flows that do not fit in any of the four categories above—international public, domestic public, international private and domestic private financing. It is composed of flows which sit across several of these categories as well as an eclectic range of flows considered “innovative”—mostly because they are either market-based or cross-sectoral. The growing importance of environmental economics have caused forest policy-makers to be particularly inventive and innovative financing to become one of the most dynamic and promising categories of financing. Two examples of innovative financing are provided here: forest funds and REDD+.

Blended Financing: Forest Funds

National forest funds are considered a blended rather than an innovative financing instrument. Indonesia’s Reforestation Fund (*Dana Reboisasi*) originated in 1980 with the aim of providing large-scale timber concessions with the financial

means of planting trees after they had been logged out. In theory, logging operators were supposed to pay a fee to the fund that would then be returned to them for forest regeneration activities (Ngakan *et al.* 2005). In 1999, however, an audit found a number of critical flaws, including opacity, misuse of funds and numerous irregularities (Barr *et al.* 2010). Without assistance from the Reforestation Fund, many timber concessions had to be abandoned (Pirard and Cossalter 2006).

After a hiatus, national forest funds recently regained popularity. As of 2014, Matta (2015) identified 70 such funds. One example of a recently established fund is Brazil's *Fundo Amazônia* (Amazon Fund), set up in 2008 by the Brazilian National Development Bank (BNDES) to finance the conservation and sustainable management of Brazil's share of the Amazon biome. As of August 2015, close to US\$ 1 billion had been donated to the Amazon Fund, but the vast majority of funding has so far been provided by the Governments of Norway (96.4%) and Germany (2.9%), with only 0.7% coming from private sources, namely Petrobras—which is a semi-public company itself.⁸

The story is similar at the international level for the Green Climate Fund, formally established in 2010 and expected to be the centrepiece of financing for climate change with a planned US\$ 100 billion by 2020. This fund, established under the United Nations Framework Convention on Climate Change (UNFCCC) became operational in 2015 and is expected to receive financial flows from a blend of public and private finance. The role the private sector in providing funds, in particular, is still open to discussion.

To this day, forest funds have fallen short of delivering on their promises of increasing SFM financing from the private sector. Instead, they have largely acted as a different means of channelling ODA. Schmidt-Pramov and Matta (2013) and Matta (2015) correctly highlight a number of conditions to raise additional funds, including (i) increasing private sector investment, (ii) seeking innovative funding opportunities to diversify the sources of funding and therefore increase the funds' stability and sustainability, and (iii) adequate monitoring and oversight to improve governance and legitimacy.

Innovative Financing: REDD+ and Other Cross-Sectoral Sources

Reducing Emissions from Deforestation and Forest Degradation, or REDD+, first emerged as a form of payment for ecosystem services (PES) remunerating for reducing deforestation and forest degradation. It can be considered both as an innovative and a cross-sectoral form of SFM financing as it originates not from the forest sector but from intergovernmental negotiations on climate change. It was initially proposed in 2005 and embraced by donors as it aimed both at

reducing deforestation and mitigating climate change, since an estimated 8 to 25%⁹ of carbon released into the atmosphere comes from deforestation.

Subsequent negotiations on REDD+ quickly stumbled across technical complexities such as establishing baselines, additionality, leakage, the source of funds and quantifying deforestation and degradation. Yet protracted intergovernmental negotiations on the creation of a REDD+ mechanism did not dampen donors' enthusiasm. In the absence of an international agreement, some stakeholders applied the REDD+ label to a variety of financing mechanisms. In Indonesia, the government had to prevent speculators from trading REDD+ credits before any regulatory framework was even introduced (Simamora 2009), while bilateral and multilateral donors have used the REDD+ label for forest-related ODA across the world. This is not to say that REDD+ ODA has not been additional to traditional forestry ODA; if anything, donor enthusiasm for the concept has largely contributed to the recent increase in ODA (Figure 1), but there is little innovation in such financing mechanisms.

The initiatives that have been most relevant to an international REDD+ mechanism are the Forest Carbon Partnership Facility (FCPF) housed at the World Bank, and the UN-REDD Programme managed jointly by FAO, UNDP and UNEP. Both initiatives aim at preparing countries to set up the institutional and technical infrastructure necessary to the establishment of a REDD+ mechanism, including the capacity for monitoring, reporting and verification—a key condition for REDD+ since funds are contingent on results.

REDD+ has been a while in the making but after a decade of negotiations, all the main features of a REDD+ mechanism have been agreed upon. The mechanism remains open to public and private, bilateral and multilateral, and alternate sources providing funds on a voluntary basis. For the time being, the majority of funding has come from public sources, with billions of public funding already pledged, but whether such large amounts of public financing will be sustained in the future remains to be seen. The private sector is also estimated to have contributed cumulatively between US\$ 600 and 800 million (Castrén *et al.* 2014). Despite such large amounts of funding, however, REDD+ has yet to demonstrate that it can be implemented at large scale (Pirard 2013).

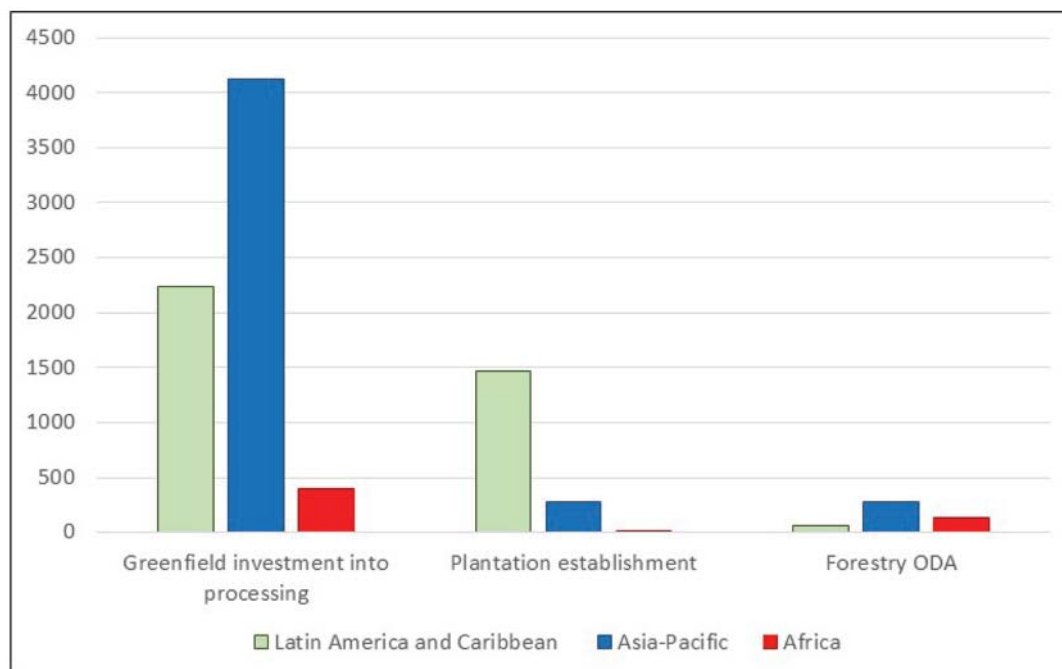
REDD+ is by far the most visible, but by no means the only source of cross-sectoral financing for SFM. Other sources of, or mechanisms for channelling, climate financing for SFM include the Clean Development Mechanism, nationally appropriate mitigation actions and low-emissions development strategies.

Agroforestry, or the practice of managing trees for productive or conservation purposes in agricultural systems is often considered a category of agriculture rather than an integral component of the forest sector, yet it is generally

⁸ Donations listed on the website of the Amazon Fund, available online at: http://www.amazonfund.gov.br/FundoAmazonia/fam/site_en/Esquerdo/doacoes/ (retrieved 21 August 2015).

⁹ Until 2013, figures varied between 17 and 25% (e.g., Environmental Protection Agency <http://www.epa.gov/climatechange/ghgemissions/global.html>) but more recent findings have lowered estimations to 8% (e.g., Global Carbon Budget 2014).

FIGURE 6 Annual average investment flows to the forest sector in developing regions in millions of US\$ between 2003 and 2012 (Castrén *et al.* 2014, OECD 2016)



included as a type of SFM (van Noordwijk *et al.* 2003). Agroforestry systems can make a significant contribution to rural and smallholder incomes as they produce a wide variety of timber and non-timber forest products such as food, medicine, cosmetics and fodder. FAO estimated the world value of non-timber forest product removals to about US\$ 18.6 billion in 2005 (FAO 2010:140), of which agroforestry systems contribute a significant (although undetermined) part.

Another significant source of cross-sectoral SFM financing is forest-based ecotourism, although again no estimate of the total value of this activity appears to exist at global level. Although ecotourism tends to be geographically localized and does not require vast swathes of forest, it is found across the developing world, from “shamanic tours” in the Peruvian Amazon to tracking wild lemurs in Madagascar and orangutans in Sabah, Malaysia. Tourists attracted to this specific niche of tourism are often willing to spend important sums to witness rare experiences such as encountering endangered flagship species or “authentic” cultural activities. Much of these funds can be perceived as SFM financing, such as entrance fees to national parks and the amounts that tourists pay local communities for hospitality.

SUSTAINABLE VERSUS UNSUSTAINABLE FINANCING

The main advantage of the “cross-sectoral” typology is that it discriminates between financial flows for sustainable and unsustainable forms of forest management—at least in theory. In practice, drawing the fine line between sustainable and unsustainable forest management is not only technically

complicated but politically controversial, which makes any quantification difficult. However, in many instances the differences are clear cut, as illustrated below.

Why analyse unsustainable financial flows when the topic is SFM financing? The answer is simple. When faced with a choice of different types of land use, including SFM, landowners and decision-makers may be driven by short-term economic considerations. If land conversion followed by large-scale agriculture is deemed more lucrative than SFM, then forests may be cleared. While they do not fall in the category of SFM financing, the financial resources fuelling decisions to convert forests to other land uses are therefore critical components of the bigger picture.

Several hypotheses can be put forward to explain why financing for unsustainable forest management was not a research topic until very recently. Many such flows are informal if not illicit, and when they are legal, operators shy away from researchers and the media for fear that they will be portrayed in a negative light. Secondly, the link between certain non-forest activities (notably agriculture) and forest cover are well known ever since Myers’ “hamburger connection” (1981), yet very few have ever applied such knowledge to reduce negative cross-sectoral impacts on SFM.

However, in the past few years there has been a flurry of activities on this topic at international level. A number of publications by think tanks recently revealed the extent of the role of large-scale agriculture on deforestation. According to Lawson *et al.* (2014:2), for instance, 71% of all tropical deforestation between 2000 and 2012 was caused by commercial agriculture. Brazil and Indonesia alone accounted for 75% of the global area of tropical forest estimated to have been illegally converted for commercial agriculture during

this period. Persson *et al.* (2014) calculated that in eight countries (Argentina, Bolivia, Brazil, Paraguay, Democratic Republic of the Congo, Indonesia, Malaysia, and Papua New Guinea) about a third of tropical deforestation between 2000 and 2009 can be attributed to just four commodities—beef, soy, palm oil and wood products, with exports playing a major role.

McFarland *et al.* (2015) went one step further and investigated subsidies to key commodities driving deforestation. The authors calculated that Brazil, for example, provides over US\$ 10.5 billion and US\$ 14.3 billion annually in subsidies for the production, processing and distribution of beef and soy respectively. Likewise, Indonesia's annual subsidies for timber and palm oil were estimated at US\$ 5.8 billion and US\$ 16.7 billion respectively. If one added private investments in these commodities, these figures would likely be considerably higher.

Not all of the Brazilian beef and soy industries, or the Indonesian palm oil and timber industries, are harmful to forests, so these financial flows should not necessarily be labelled as unsustainable in their entirety. Yet the magnitude of these figures is such that even if only a fraction of these subsidies were conducive to either deforestation or forest degradation, they would still dwarf forestry ODA in support of SFM, which in 2013 totalled a “mere” US\$ 8 million for Brazil and US\$ 23 million for Indonesia (OECD 2016).

In response to growing interest on the topic, the Global Environment Facility launched a US\$ 45 million integrated approach programme on “taking deforestation out of commodity supply chains”. This programme aims to enhance the understanding of decision-makers on the links between key commodities and deforestation, strengthening enabling environments for deforestation-free commodities, supporting the adoption of sustainable production practices and increasing investment flows to deforestation-free commodity supply chains. This programme is revolutionary in its cross-sectoral approach in that it is the first time an international donor has linked SFM with key agricultural commodities on such a scale.

TOWARDS A HOLISTIC APPROACH

This rapid overview shows that a holistic approach combining two complementary typologies not only improves the understanding of financial flows in support of SFM, but also highlights recommendations to increase and improve SFM financing:

1. The “flow” typology highlighted the insufficiency of public financing and the need to unlock private financing. Instead of perceiving both categories as substitutes for each other, they could be viewed as playing synergistic roles. In particular, public financing could play a catalytic role by creating incentive structures to attract private investment, while creating disincentive structures to minimize unsustainable investments. Public financing could focus on (i) financing activities

with low returns (*e.g.*, conservation) and/or high risk (*e.g.*, in volatile countries); (ii) guaranteeing investments; (iii) promoting forest certification; (iv) improving access to SFM-related information to potential investors and building capacity for forest-based stakeholders in financial management.

2. The “cross-sectoral” typology helps emphasise climate financing as one of the fastest-growing sources of financing for SFM. The increasing importance of climate financing, particularly REDD+, bears major implications on SFM itself as it has already shifted the focus of financing towards carbon sequestration, reflecting the general trends towards “climatization” of international discussions on forests (Singer and Giessen in preparation). REDD+ safeguards introduced at the 16th Conference of Parties of the UNFCCC in Cancún in 2010 encourage policy-makers to take into account other aspects of forests (*e.g.*, biodiversity, indigenous rights, etc.), but their voluntary nature means that additional efforts need to be made to ensure that climate financing does not compromise the multiplicity of forest values.
3. The “bigger picture” also enables a better understanding of how factors outside the forest sector, including investment risks and enabling environments, could be improved to increase levels of SFM financing, in particular from private sources. Enabling environments refer to a set of interrelated conditions that encourage private investments such as political, economic and financial stability, barriers to investment, tax systems and subsidies, laws and regulations, and access to information. While many components are specific to the forest sector (*e.g.*, taxes, laws, subsidies), others are part of the broader political and economic landscape.

In order to increase private investment in SFM, therefore, factors outside of the forest sector need to be addressed, which requires mobilising high-level political stakeholders. This constitutes a major challenge in most countries as SFM often suffers from limited political visibility compared to areas perceived as more important economically or strategically such as agriculture, education and health. In order to convince the political sphere to take action in favour of SFM financing, the profile of forests needs to be raised, notably through communication strategies that emphasise the contributions of forests to sustainable development.

4. The “cross-sectoral” typology also highlighted sources of SFM financing that are often overlooked or neglected such as agroforestry and ecotourism. While these play a minor role in larger forest-rich countries such as Brazil and Indonesia, they can represent an important potential source of financing in countries which cannot rely on larger sources of financing such as from timber production or carbon storage, including many small island developing states and low forest cover countries. Both categories of countries also

hold high potential for agroforestry. In addition, the successful tourism industry of many small island developing states suggests that this could also be a promising source of SFM financing for these countries.

5. Even if levels of SFM financing were to increase significantly, as long as they do not outweigh financing conducive to unsustainable forest management the risk remains that decision-makers may continue to exacerbate deforestation and forest degradation. Since many of these flows lie outside the forest sector, cooperation between sectors is needed. In this context, REDD+ has the advantage of being a results-based payment, which encourages decision-makers to address the drivers of deforestation at their source, even if it lies in another sector than forests. McFarland *et al.* (2014:41) give examples of how Indonesia has been reforming subsidies to support REDD+.
6. Given the complex interactions between the components of SFM financing, the whole is greater than the sum of its parts. In order to minimise trade-offs and optimise synergies between financing flows, there is a clear need for national forest financing strategies which capitalise on all potential financial flows while taking into account national specificities and placing SFM financing within a broader cross-sectoral framework. In particular, opportunities outside the forest sector need to be harnessed; negative effects of unsustainable financial flows on SFM need to be minimised; and the awareness of the political sphere needs to be increased with regards to the importance of financing SFM.
7. For any of these recommendations to be implemented, data collection needs to shift from a sector-based to a more holistic approach where it is clearly lacking. In particular, two glaring gaps will have to be filled. First, the positive and negative impacts of flows in one sector on another sector (notably forests) continue to be poorly understood and require considerable research. Secondly, quantifying SFM financing will require an operational definition of this category of flows, with specific criteria and indicators. This would enable to quantify not only SFM financing as a whole but would also help understand the interaction between sustainable and unsustainable financial flows.

The last point is all the more timely as the implementation of the new sustainable development goals and targets of the United Nations adopted in September 2015 need to be measured, including target 15b which aims to “mobilize significant resources from all sources and at all levels to finance sustainable forest management” (United Nations 2015a:21).

Despite this, several trends leave room for optimism. While it still falls far short of needs, SFM financing has been growing in recent years, both from public and private sources. Political attention to the plight of forests, particularly in the tropics, has also been on the increase, leading to a high level of dynamism in devising a diversified mix of innovative

financing mechanisms. The challenges are now to ensure (i) that these trends are sustainable over the long term, (ii) that those stakeholders who most need it can access financing, and (iii) that increased finance delivers concrete results.

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