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UNSEEN FORESTERS

An assessment of approaches for wider recognition and spread of sustainable forest management by local communities

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Member of the of the Mumbuca community Matina Tavares da Silva gathers Golden Cress in the Cerrado, Brazil. © David Bebber / WWF-UK
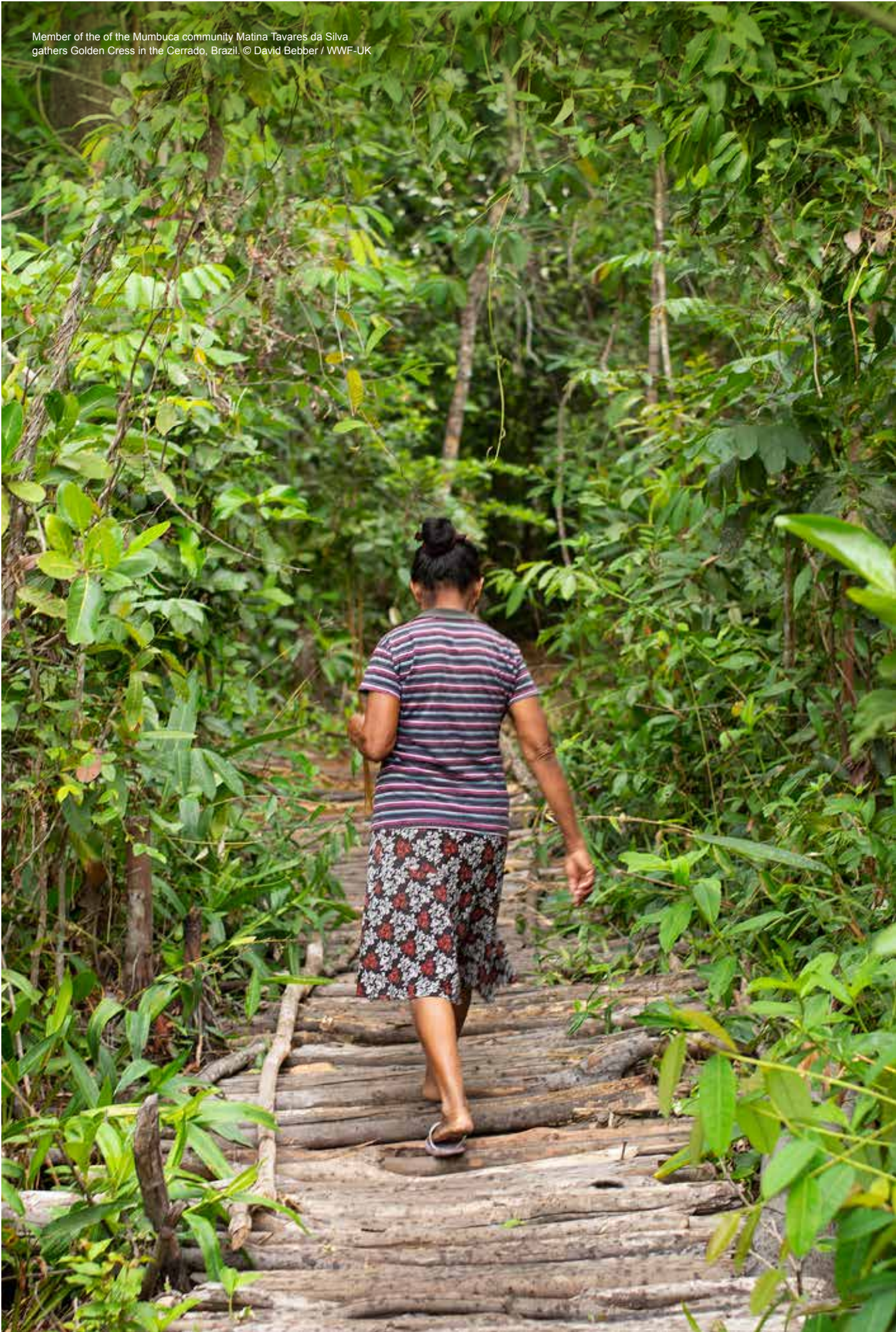
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Colourful leaves of Lophira alata, (Ochnaceae). Central African Republic. © Ola Jennersten / WWF-Sweden)

ACKNOWLEDGEMENTS

ACRONYMS

CIFOR	Center for International Forest Research
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FFF	Forest and Farm Facility
FFPO	Forest and Farm Producer Organisation
FIA	Forest Integrity Assessment
FLEGT	Forest Law Enforcement Governance and Trade
FLO	Fairtrade Labelling Organisations
FSC	Forest Stewardship Council
FRA	Forest Resource Assessment
GFW	Global Forest Watch
GIM	Geographical Indication Mark
GPS	Global Positioning System
HCV	High Conservation Value
ICCA	Indigenous and Community Conserved Area
ICT	Information and Communication Technology
IFAT	International Federation for Alternative Trade
IFOAM	International Federation of Organic Agriculture Movements
IIED	International Institute for Environment and Development
IPLC	Indigenous Peoples and Local Communities
IRR	Internal Rate of Return
IUCN	International Union for the Conservation of Nature
NTFP	Non-Timber Forest Product
NTFP-EP	Non-Timber Forest Products Exchange Programme
PEFC	Programme for the Endorsement of Forest Certification
PES	Payment for Ecosystem Services
PFES	Payments for Forest Environmental Services
PGS	Participatory Guarantee System
REDD+	Reducing Emissions for Deforestation and forest Degradation
RFUK	Rainforest Foundation of the United Kingdom
SCLO	Small and Community Label Option of Forest Stewardship Council
SDGs	Sustainable Development Goals
SFM	Sustainable Forest Management
SVLK	Sitem Verifikasi Legalitas Kayu
TLAS	Timber Legality Assurance Scheme
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VPA	Voluntary Partnership Agreement
WWF	World Wide Fund for Nature

EXECUTIVE SUMMARY

Many forests around the world are under pressure. Some are being well looked after and some of these are being looked after but 'unseen'. If these unseen forest managers were better recognised, perhaps their systems could be helped to spread sustainably over time – and unnecessary forest destruction repulsed. The rate of deforestation in the tropics has continued unchecked despite numerous corporate pledges of zero deforestation.

From a total rural population of 3.4 billion, some 1.3 billion forest-dependent people live in forests as Indigenous Peoples or local communities (IPLCs). Good evidence suggests that when granted local control, IPLCs generally protect forests better than industrial scale companies do, and even better than many protected areas have. This assessment finds and describes approaches that could achieve wider recognition and spread of sustainable forest management (SFM) by IPLCs.

IPLCs engage in community forestry in varied countries and contexts. Collectively, even conservative estimates of the gross annual value of smallholder crop, fuelwood and charcoal, timber, and non-timber forest products (NTFPs) lie between US$869 billion and US$1.29 trillion. This is substantially larger than the gross annual value of the largest companies, such as Exxon Mobil (US$265 billion in 2019) or Nestle and Unilever (US$150 billion combined). IPLC forest management and business groups span the forest core and edge, through farmland forest mosaics to urban forest-linked processing centres. Approaches to recognise and spread their SFM are likely to have both considerable value at stake and require tailoring to fit the context. Because the collective, cooperative and democratic nature of many (but not all) IPLC business groups often motivate innovations in other dimensions of prosperity – such as those captured in the Sustainable Development Goals (SDGs) – approaches which target support to those more democratic business models may meet agendas broader than SFM alone.

One of the main tools to spread knowledge of SFM in the world has been third-party forest certification for sustainable timber production. It has had considerable success. But certification is a market mechanism and can be at odds with the worldviews of many IPLCs. Moreover, the small unit scale of many community forests increases the per-unit audit costs of third-party certification and puts community groups at a comparative disadvantage with industrial-scale forestry operations. In addition, the end-markets targeted by communities do not necessarily demand certified supply (e.g. domestic timber markets for construction or furniture), and this is even more the case for NTFPs. For these reasons, this assessment focuses on approaches that are beyond, but complementary to, third-party certification in trying to achieve wider recognition and spread of SFM by IPLCs.

The indigenous community of La Chorrera in the heart of the Colombian Amazon is bringing together traditional knowledge and conservation science to survey their forest territory and to help strengthen indigenous decision making and governance, with the support of the Puerto Rastrojo Foundation. © Luis Barreto / WWF-UK
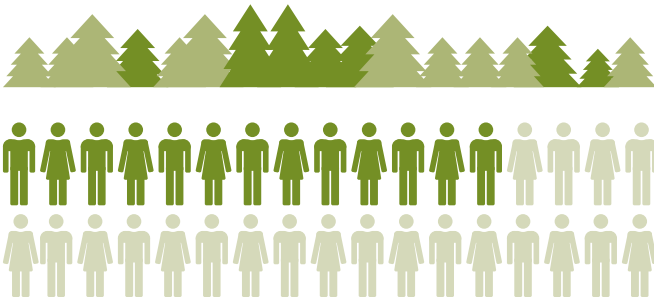
FROM A TOTAL RURAL POPULATION OF

3.4 BILLION, 1.3 BILLION

LIVE IN OR AROUND THE WORLD'S REMAINING FORESTS AS 'FOREST-DEPENDENT PEOPLE'

Communities and government officials have been working in Laos to develop a viable and sustainable management and supply chain model that ensures the forest is protected while also contributing to local livelihood. © Thippakone Thammavongsa / WWF-Laos

In developing an assessment framework, and in subsequently carrying out a literature review and interviews with a wide range of experts in this study, we found that there are several **cross-cutting approaches** that shape any of the other options beneficially. These include: first, social and institutional investments in the building of accountable local organisations. Not only is that necessary for SFM at the 'first tier', i.e. community level, but also in second-tier regional organisational structures that aggregate, process and market product, and at the third-tier national federation level to conduct effective advocacy. Second, there is a need to build credible local assessment of forest management – to empower groups to assert their forest management credentials in an 'innocent-until-proven-guilty' format rather than the reverse. Third, there is almost always the need for fairer distribution of costs and benefits of community forestry – with less onerous requirements for communities – and more beneficial support and action from government. Finally, all approaches require stronger partnerships between communities and external agencies in a progressive community of practice.

Of the approaches that seem to have potential to be further developed and spread in ways appropriate to particular contexts, we found it useful to analyse them in two broad categories: 'landscape governance' options, which are those that are focused on improving decision making associated with particular forest resources and geography; and 'supply chain' options, which are those associated with improving behaviour along chains of value derived from forest products and services. Focusing on subsets of issues within each of these categories helped us to uncover a range of useful approaches.

Table 1 presents these approaches. It summarises the degree to which each approach is applicable to different community forest contexts and summarises some of the strengths and

limitations of each – which are elaborated further below. Within each of the two categories, the list of approaches is presented in rough order of social, institutional and ultimately financial investment need – from situations where capability is relatively weak, to more advanced approaches where capability is much stronger.

The rough ordering of approaches in Table 1 is intended to imply that they could help, step by step, to provide the key building blocks for success – e.g. accountable organisations, secure tenure, locally implemented forest integrity assessments and reward mechanisms. Different contexts may have reached different stages on this trajectory – so the starting point will be to advance further from the actual current situation. It is difficult to go further and assess which approach offers the best return on investment, as contextual factors simply weigh too heavily. We do observe, however, that not all approaches work equally well across the full spectrum of community forestry contexts – from the forest core to urban forest-linked processing centres – so, again, in seeking to apply knowledge gained in one context to the different specifics of another context, flexibility and care are needed. Some approaches could be described as both landscape governance and supply chain options (notably a, d, f, and j) – we have simply placed them in Table 1 where they seem to best fit – and, for the sake of clarity in presentation, we do not here describe the obvious overlaps amongst some of the approaches, nor the productive links between approaches that might make some of them best pursued jointly.

We carried out this analysis before the COVID-19 pandemic and responses to it unfolded. Whilst at the time of writing available evidence does not allow us to credibly predict how events will further unfold, we do feel confident that at least some of the following approaches will be crucial to the abilities of communities and wider populations to heal and restore themselves.

	APPROACHES	FOREST CORE INDIGENOUS TERRITORIES	FOREST EDGE COMMUNITY FORESTS	FOREST MOSAIC SMALLHOLDER FARMERS	URBAN FOREST PROCESSING CENTRES	STRENGTHS	LIMITATIONS
Landscape governance approaches
A	Enabling investment facilities to strengthen accountable community organisation	✅	✅	✅	✅	Foundation of local control / Long-term sustainability	Field resource intensive / Specificity to SFM limited
B	Participatory GPS-enabled mapping of rights	✅	✅	❓	❌	Basis of secure tenure / Builds strong organisations	Field resource intensive / Political buy-in varies
C	Locally implemented forest integrity assessments	✅	✅	❓	❌	Builds local SFM pride / Improves local SFM capacity	Depends on tenure claims / Limited market credibility
D	Remote sensing tree cover reward mechanisms	✅	✅	✅	❌	Incentivises forest cover / Allows flexible negotiation	Extension reach required / Ability to cover costs varies
E	Public community-oriented compliance funds in timber legality / sustainability assurance systems	✅	✅	✅	✅	Prizes SFM public goods / Engages public support	Extension reach required / Ability to cover costs varies
F	Green ICT evidence-based conditional capital injection systems for community funds	✅	✅	✅	❓	Builds finance track records / Channels SFM funds flexibly	Field resource intensive / Market credibility varies
Value chain approaches
G	Fair trade certification to offset SFM certification audit costs	✅	✅	✅	✅	Existing well known system / Market-based SFM incentive	Threat to SFM certification? / Challenge of market scale
H	Payments for ecosystem services to offset SFM certification costs	✅	✅	✅	❌	Uses SFM co-benefits / Viable price premiums	Small-scale disadvantages / Metrics need upscaling
I	Participatory guarantee systems (PGS) that certify forest production systems	✅	✅	✅	✅	Incentivises local action / Flexible across product types	Export market credibility / Scale requires more systems
J	Private sector brokers of regenerative investments in community forestry	❓	✅	✅	❌	Private trader know-how / Financial sustainability	Limited trader intermediaries / Market appetite for SFM limited
K	Business incubation platforms for value added diversification in agroforestry supply chains	❓	❓	✅	✅	Contributes to resilience / Can be housed sustainably	Needs existing organisation / Takes time to deliver
L	Investor sponsored community-linked forest disclosure projects	❓	✅	✅	✅	Could reach big investors / Climate-linked pressure	Few investors fund IPLCs / Weak credibility of disclosures
M	Third-party certification of 'green' forest-linked investor funds	❌	❓	✅	✅	Climate-linked pressure / Good market distinction	Time to develop standards / Weak link to IPLC groups

KEY ✅ Directly applicable ❓ Partially applicable ❌ limited or no applicability

Table 1. The applicability of various approaches to different community forest contexts and their main strengths and limitations

LANDSCAPE GOVERNANCE APPROACHES WITH FURTHER POTENTIAL:

A. Enabling investment facilities to strengthen accountable community organisation

This approach engages at the community level to help forest and farm producers build strength in numbers through legitimate organisations around particular economic activities (including the range of timber, NTFPs and services emerging from SFM).

B. Participatory Global Positioning System (GPS)-enabled mapping of rights

This approach helps recognise the territorial existence and rights of communities acting in the capacity of forest stewards as a starting point for any subsequent recognition, realisation and strengthening of their rights and their SFM.

C. Locally implemented forest integrity assessments

This approach seeks to standardise a cost-effective way in which local community groups in different contexts can make credible claims about the integrity of their forest and thereby the sustainability of their forest management.

D. Remote sensing tree cover reward mechanisms

This approach uses remote sensing data to improve recognition of instances where forest communities have maintained forest tree cover. It links such recognition (of a community contribution to the public good) with conditional, locally agreed investments.

E. Public community-oriented compliance funds underwriting timber legality and sustainability assurance systems

This approach publicly recognises and sets up funds to mitigate the disproportionate costs per area of forest land that smallholders and communities face in ensuring that community forestry complies with these assurance systems (including the costs of certification).
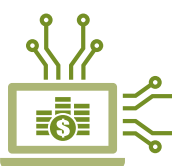
F. Green ICT evidence-based conditional capital injection systems for community funds

This approach matches social and environmental investors with mechanisms that capitalise funds at the community level or community business level and provides ICT verification of the results of those capital injections.

SUPPLY CHAIN APPROACHES WITH FURTHER POTENTIAL:

G. Commodity or trading organisation fair trade certification to offset SFM certification audit costs

This approach aims to recognise SFM, distinguish community forest products in the market and pass the cost of any third-party audits on to the buyer through some form of fair trade premium – whether in association with an existing SFM certification scheme or not.

H. Payments for ecosystem services to offset SFM certification costs

This approach also maintains the rigour of third-party certification for SFM but with the costs offset by payments for ecosystem services (PES) i.e. co-benefits accruing through conserved ecosystem services.

I. Participatory guarantee systems (PGS) that certify forest production systems

This approach builds trust between producers and buyers locally and introduces participatory second party certification of SFM into local markets that are normally ignored by international third-party SFM certification schemes.

J. Private sector brokers of regenerative investments in community forestry or agroforestry systems

This approach involves facilitation or provision of a matching function between: (i) investor needs to secure product supply or achieve social and environmental goods and; (ii) the production capabilities of specific community forest restoration businesses.

K. Business incubation platforms for value added diversification in agroforestry supply chains

This approach promotes value-added diversification in rural areas to drive on-farm production system diversification into more complex agroforestry systems that provide resilience to climate and other economic shocks.

L. Investor sponsored community-linked forest disclosure project

This approach seeks to reward companies who can trace the forest impacts of their value chains, including links to SFM by communities.

M. Third-party certification of 'green' forest-linked investor funds

This approach - to introduce rigorous certification of the forest impacts of investment portfolio funds – does not yet appear to exist, but is suggested as a development of the forest impacts disclosure approach.

Many of these approaches are complementary to one another. We conclude that there is generally less pressing need for further innovation, and more need for concerned action to upscale some of these options – especially in cases where, as yet, they exist only as pilots.

Further research and investment is also warranted in exploring: how best to differentiate accurately between community forest contexts and the approaches relevant to those contexts; how best to build locally accountable organisations especially at higher regional and national levels to accelerate the spread of SFM approaches by IPLCs; how best to combine participatory GPS-enabled mapping with remote sensing data to recognise and spread SFM by IPLCs; how best to design negotiation of rewards for good practice; how best to combine complementary ODA and climate funding streams in support of SFM by IPLCs; how best to upscale options for conditional grants and loans into credible local organisational savings and loan funds; how to introduce much more rigorous third-party certification into the larger investment portfolio funds that are currently relatively blind to forest impacts; and, finally, which of these approaches best handles intra-community power dynamics to deliver equitable outcomes.

We could never have anticipated that this report release would take place in the context of the global COVID-19 pandemic, and humanity's response to it, which bring huge challenges to urban and rural life worldwide. A tragic death-toll is accompanied by massive stresses to health, social, economic and governance systems. As weak links in complex supply chains become swiftly and painfully evident, and despite their own precarious position, smallholders and community groups in forest-farm landscapes are continuing to produce food, as well as many other products and services, vital to the survival of populations near and far. As these populations emerge from the COVID-19 crisis it will be more important than ever to recognise these unseen heroes.

We welcome reaction, contestation and ideas that can usefully take forward any of the initial conclusions in this assessment.

Women carrying wood from community forests that are managed by Community Forest Co-ordination Committees (CFCC). The CFCC's were established with the help of WWF in order to allow communities to manage their forests sustainably. Thagugwara area, Royal Bardia National Park, Western Terai, Nepal. © Simon de TREY-WHITE / WWF-UK

SECTION 1.
BACKGROUND CONTEXT

1.1 SCALE AND DIVERSITY OF FOREST-DEPENDENT LOCAL COMMUNITIES

From a total rural population of 3.4 billion, an estimated 1.3 billion formalised or informal rightsholders live in or around the world's remaining forests as 'forest-dependent people' (Chao, 2012). Forest dependent people are therefore extremely important to the future of these forests (see Box 1). These and other human populations are growing, as are their consumption patterns (Royal Society, 2012) – and growing on a planet whose resources are finite. Whilst the rate of global population growth has been slowing since 1970, global population is still rising – presenting huge challenges (White, 2016). For example, in Africa, where much of the population depends on subsistence agriculture for food, the population is set to double by 2050. There is finite land on which to grow agricultural crops, and much of what remains is currently forest.

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3.4 BILLION, 1.3 BILLION
LIVE IN OR AROUND THE WORLD'S REMAINING FORESTS AS 'FOREST-DEPENDENT PEOPLE'

Female forest workers. Kanha national park, India © Ola Jennersten / WWF-Sweden

BOX 1. THE IMPORTANCE OF INDIGENOUS PEOPLES AND LOCAL COMMUNITIES (IPLCS) FOR SUSTAINABLE FOREST MANAGEMENT (SFM)

Geospatial analysis shows that Indigenous Peoples manage or have tenure rights over at least 3.8 billion hectares (roughly quarter of the world's total land surface area) across 87 countries or politically distinct areas on all inhabited continents.

These Indigenous Peoples' lands intersect about 40% of all terrestrial protected areas and ecologically intact landscapes – mostly forests (Garnett et al., 2018). But not all of these areas are officially designated to or owned by those peoples.

In terms of global forest cover, indigenous, community and smallholder forestry regimes are now estimated to encompass more than 689 million hectares and comprise about 26% of the world's forests (Gilmour, 2016a).

In the more limited number of 41 countries with continuous data — covering 85% of the world's forests — the forest area legally recognised for Indigenous Peoples and Local Communities (IPLC) has grown from 374 million hectares (mha) in 2002 (10.9%) to at least 521 mha (15.3%) in 2017. Over 98% of these gains occurred in 33 low- and middle-income countries in Africa, Asia, and Latin America (Ginsburg and Keene, 2018).

Constantine Kusebahasa planting pine trees, Rwenzori Mountains, Uganda © WWF / Simon Rawles

As noted in Box 1, the rights of IPLCs to manage forests are not always recognised, which undermines their incentive to maintain such forests. Despite progress in IPLC forest land tenure, global forest loss is still running at between 3.3 million hectares and 29.4 million hectares per year. The former figure represents net forest loss (the balance between losses and gains in forest cover) and stems from the land classification assessments (involving land use change / forest cover change) of the Global Forest Resources Assessment (FRA) of the Food and Agriculture Organization of the United Nations (FAO). The latter figure represents gross forest loss and stems from estimates (including estimates of non-human induced changes) from satellite data of Global Forest Watch (GFW) compiled by the World Resources Institute (WRI). In terms of net forest loss, the FRA figure is probably an underestimate due to government classifications of forest land that remain as such even when losing tree cover; while the GFW figure is probably an overestimate, due to satellite systems detecting forest loss (e.g. in harvesting plantations) but not forest regrowth (Pearce, 9 October 2018). Although net forest loss is slowing, the loss of biodiverse tropical forest is hardly slowing at all. Indeed, the last three years saw the three highest rates of loss on record (Weisse and Goldman, 25 April 2019).

Using the GFW data to assess the various annual drivers of deforestation, Curtis et al., (2018) estimated that the largest and most stable driver of forest loss since 2001, accounting for 27% of the annual total, was long-term permanent conversion to commodity production (e.g. mostly industrial-scale but also some smallholder palm oil, soy, mining, etc). This percentage contribution to deforestation has remained troublingly constant despite corporate pledges towards zero deforestation.

The other annual drivers of annual land use change described by these authors included both large-scale forestry operations occurring within managed forests and plantations (26%), shifting agriculture (24%) and wildfires (23%). Importantly, these latter drivers may not cause permanent land use change and may be followed by forest regrowth that is difficult to pick up using the GFW data (Curtis et al., 2018). Furthermore, it is worth noting that the forestry of IPLCs is almost completely absent from the listing of major drivers of deforestation which may partly stem from the fact that it is difficult to recognise which forests are community lands and which are not.

This data suggests three things: first that the 450 or so organisations (mostly downstream traders and retailers) who have signed up to zero deforestation pledges have much to do to ensure that upstream producing companies help them meet their pledges, even if society is prepared to overlook their historic contribution as the biggest cause of permanent forest loss. Second, the mainstream forestry business model involving large-scale forestry operations (often in state-allocated concessions) has collectively failed to demonstrate sustainable forest management (SFM)

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COMMUNITY FORESTRY IS "ANY SITUATION THAT INTIMATELY INVOLVES LOCAL PEOPLE IN FORESTRY ACTIVITY"
(FAO, 1978)

TRANSFERS OF STATE CONTROL TO LOCAL CONTROL MUST BE MANAGED SUCH THAT SFM IS INCENTIVISED

– even if particular companies have an exemplary record of SFM. Third, the mixed forestry and agriculture of IPLCs have more to do to ensure recognition that their attempts at SFM, subsistence agriculture use, and use of fire can be sustainable (through regrowth), even if there is substantial annual felling of trees.

But in the same way that large-scale forestry operations are not all complicit in forest loss, not all IPLC forestry offers a quick route to SFM. As the potential of IPLC forestry for SFM has become increasingly recognised over the last 20 years, many studies have also pointed to its inherent challenges such as: tenure insecurity (RRI, 2012; Anderson et al., 2015); elite capture (Persha and Andersson, 2014); common resource management (Gibson et al., 2005); cost sharing and scale efficiencies (Humphries et al., 2012); access to finance (Vega and Keenan, 2016); access to markets (Scherr et al., 2003); access to infrastructure and support services (Belcher et al., 2015; Wunder et al., 2014a; 2014b); gender inequality (Agarwal, 2001); and cultural clashes with the conventional idea of the firm (Antinori and Bray, 2005).

In short, the generalised truth that the spread of SFM by IPLCs may be the quickest route to saving the world's remaining forests, is not backed up by every IPLC case. Transfers of state control over forest land to local control must be managed such that SFM is incentivised. Contextual factors and internal dynamics within IPLCs vary hugely. This diversity requires tailored approaches to different types of community forestry. It is encouraging that some governments are already recognising the need, both to transfer forest land towards control by IPLCs, and also to differentiate between different models in so doing. For example, the commitment of the Indonesian government to transfer 12.7 million hectares will be achieved across a range of five or more community forest designations: Hutan Adat (indigenous forest); Hutan Desa (village forest under village administration); Hutan Kemasyaratan (communal forest managed cooperatively); Hutan Tanaman Rakyat (private smallholder forests – sometimes managed collectively); and Kemitraan (community-government partnership). Similarly, in Brazil, the government recognises many different types of community forest designation (e.g. extractive reserves, sustainable development settlements, agroforestry settlements, indigenous lands and quilombos).

In this report we will use the terms 'forest-dependent' and 'Indigenous people and local communities' (IPLC) to describe, respectively, the relationship to forest goods and services and

the people we focus on. Both of these terms have some currency in the literature (see for example, Alam and Faruque, 2019; Newton et al., 2016; Nijnik et al., 2019; Reyes-García et al., 2018). Decadal reviews of community forestry have shown that communities differ in their temporal, ecological, social and economic relationship with the forests (Arnold, 1991; 2001). Almost 370 million people self-identify as 'Indigenous People'. Indigenous people tend to self-identify due to their long historical continuity with pre-settler societies, strong link to territories and natural resources, distinct socio-economic and political systems, distinct language, culture and beliefs and resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities (United Nations, 2000). At the other end of a notional spectrum of people-forest relationships are peri-urban and urban artisanal and industrial processing communities, distant from the forest itself, but who nevertheless depend on its provision for their livelihoods. In between these extremes lies a range of local communities who have immigrated– some more distantly and some more recently –into forest areas. These are differentiated most easily by those maintaining communal resource tenure and those divided into private farm smallholdings – although some more established communities may combine collective and individual rights (e.g. caboclos, quilombos and rubber tappers in Brazil). And as well as differentiated tenure regimes, these different community forest landscapes also have disparate systems of authority and decision making for forest resource use.

Community forestry is defined by the FAO as "any situation that intimately involves local people in forestry activity" (FAO, 1978). The range of different community forest landscapes is described in Table 2. opposite. In some ways, the progression in the left column mirrors the different conceptions of community found in the literature, from spatial conceptions of community (e.g. tightly woven indigenous communities in the forest core), through institutional conceptions of community (e.g. institutionally governed communities migrating into the forest edge), to delocalised conceptions of community (e.g. farming mosaics and peri-urban and urban settlements where individuals are embedded in wider societal networks) (see Ojha et al., 2016). The framing also aligns with the current international alliances representing these groups, such as the several Indigenous alliances: the Global Alliance for Community Forestry (GACF) and the International Family Forestry Alliance (IFFA), which have recently forged a strong mutual agenda under the title of the G3 (see G3, 2011).

TYPE OF FOREST AREA AND PRODUCTION SYSTEM	TYPE OF COMMUNITY ORGANISATIONS AND DECISION MAKING	LIVELIHOOD CHARACTERISTICS	ISSUES FOR SUSTAINABLE FOREST MANAGEMENT
FOREST CORE	Fairly homogenous indigenous peoples' organisations (mainly rights-based) with customary authorities	Low population density and subsistence use of natural forests (timber, NTFPs and fuelwood) with domesticated agrarian patches	Challenge of maintaining differentiated cultural forest use and protection, valid over millennia but now under new external and internal pressures.
FOREST EDGE	Diverse competing community forest organisations (rights- and business-based) with customary and political decision making	Rapid population and agrarian expansion in (still mostly natural) forests with mixed subsistence and commercial use of timber, NTFPs and fuelwood	Challenges of sustainably and verifiably managing diverse natural forests
FOREST MOSAIC	Product oriented Forest and Farm Producer Organisations (mainly business- based) usually with elected business decision makers	High populations and co-existence of people and (mostly planted) forests with mostly commercial use of planted trees for timber and NTFPs	Challenges of differentiating farm grown products from those sourced from natural forests
URBAN FOREST-LINKED PROCESSING CENTRES	Urban and peri-urban processing groups in contexts who use forest inputs usually with elected decision makers	Very high populations in non-forest settlements with commercial use of timber and NTFPs	Challenges of sustainable sourcing and traceability from diverse forest contexts

Table 2. *Contexts of community forestry within which sustainable forest management might be recognised*
Source: *Adapted from Macqueen et al., 2018a*

An alternative approach to differentiating groups based on 'peopled-landscapes' is to distinguish different types of community forestry on a spectrum of local control, from passive participation in government schemes at one extreme to full private smallholdings on the other (Gilmour, 2016a). Focusing on the degree of local control (i.e. autonomy) rather than the result of forest management (i.e. sustainability) that ensues is an approach that some have argued deserves greater attention (see Macqueen et al., 2018b). The argument is as follows. As the degree of autonomy increases, the felt impacts of sustainability (or lack of it) increase. In most cases, therefore, greater local control should motivate greater attention to sustainability, including SFM.

But there are also many cases where valid local reasons for not pursuing SFM exist (i.e. better economic alternatives). In those instances, local autonomy could and perhaps should trump external insistence that SFM be pursued, uncompensated, against local wishes. So, the pursuit of local control both increases the felt impacts of sustainability and requires the means to subsidise the public goods it generates. Generation of public goods should not simply be imposed against local wishes. Methodologies that advocate certification of the degree of local control (rather than the sustainability exercised through it) could usefully be developed to improve the way in which this important dimension of community forestry could be tracked.

1.2 IMPORTANCE OF SUSTAINABLE FOREST MANAGEMENT BY IPLCS

There is good evidence that secure community forest tenure enhances the quality of forest condition (i.e. SFM) with particularly positive outcomes cited from countries with a long history of secure community forest tenure and other enabling conditions, such as Mexico, Nepal and Tanzania (Seymour et al., 2014; Oldekop et al., 2019), or for indigenous peoples' land titling in Peru and the Amazon more generally (Blackman et al., 2017; Schleicher, 2018; Walker et al., 2020). External government support and secure property rights are two of five success factors for community forestry advanced by Baynes et al. (2015). In that analysis, the other three success factors relate to intra-community issues such as: socio-economic and gender equality (community cohesion); intra-community-forest-group governance; and benefits (the degree to which rewards are shared).

Marisela Silva Para, local community leader and 'environmental promoter' conducting environmental survey of the forest found on a local farm, Chiribiquete National Park, Colombia © Luis Barreto / WWF-UK

In many ways the link between successful community forestry and the quality of forest condition (i.e. SFM) is to be expected. For example, when communities who have to live with the consequences of land-use decisions are put in charge of such land use – they have strong reasons for maintaining the natural resource heritage on which their livelihoods, and their children's livelihoods, might be based. Exceptions can of course be found, especially when there are contextual factors relating to developments in infrastructure, markets and other external threats that overwhelm their capacity, motivation or social cohesion to defend their heritage. But while exceptions are to be expected across the very wide range of community forest contexts and types, in general, community forest tenure has been shown to be at least as effective as state-enforced protected areas in protecting forests (Porter-Bolland et al., 2012), and generally has positive effects on the condition of the forest (Bowler et al., 2010; Fa et al., 2020).

In addition to evidence of generally positive impacts of secure community forestry tenure on the condition of the forest, there is also evidence that community forest enterprises have had stronger impacts on, and present

COMMUNITY FOREST TENURE IS EFFECTIVE IN PROTECTING FORESTS AND HAS POSITIVE EFFECTS ON THE CONDITION OF THE FOREST

(Porter-Bolland et al., 2012)

better prospects for, reducing poverty than industrial-scale forestry (Mayers, 2006; Oldekop et al., 2019; Rasolofoson et al., 2016). The collective, cooperative and democratic nature of many (but not all) community forest business models also offers considerable innovation towards achieving broader dimensions of prosperity as envisaged within the Sustainable Development Goals (SDGs). For example, an analysis of 50 case studies from 24 countries (see Macqueen et al., 2018c) showed how organisational innovations that are not commonly found in industrial-scale businesses but are often found in community forest enterprises, were progressing six main dimensions of prosperity. The innovation is followed by the dimension of prosperity (shown in bold), each of which has substantial backing in human rights legislation:

Dimensions of prosperity

- Democratic enterprise oversight bodies to progress **environmental and cultural stewardship** (including SFM)

- Negotiated benefit distribution and financial vigilance mechanisms to progress **material health and wellbeing**

- Networks for better access to markets and decision making to progress **affirmative social relationships**

- Processes for conflict resolution and justice to progress **justice and security**

- Processes of entrepreneurial training and empowerment for both men and women to progress **personal and reproductive fulfilment**

- Branding that reinforces local visions of prosperity to progresses **cognitive identity and purpose**.

The challenge of documenting the collective scale of community-based forest-linked economies is considerable (see Mayers et al., 2016). But even conservative estimates of the collective gross annual value of smallholder crop, fuelwood and charcoal, timber and non-wood forest products production is between US$869 billion and US$1.29 trillion in 2017 US dollars (Verdonne, 2018). Finding ways to marshal that collective value through the organisation of productive capacity into sustainability-oriented entrepreneurial groups, associations, cooperatives, federations and the like, has increasingly been seen as a vital approach to avoiding deforestation, spreading SFM, and indeed delivering the full spectrum of SDGs (FAO and Agricord, 2016). The ecological impacts that will occur if such agency is not marshalled towards sustainability are likely to be extreme.

Within an otherwise gloomy global overview of limited progress being made to improve global forest governance, some improvements towards socially beneficial SFM made through community and smallholder organisation

and empowerment were described (Conway et al., 2018). Good evidence was presented on how the empowerment of communities can make change happen – through collective organisation that engages their strength in numbers to achieve effective policy advocacy (Mayers and Macqueen, 2019).

Because the world's remaining forests are inhabited by such a large number and such a high diversity of IPLCs (e.g. 36% of intact forest landscapes overlap with Indigenous Lands – Fa et al., 2020), their agency in helping to deliver SFM is clearly something that must be engaged. And it is here that some differentiation between the types of IPLCs is needed, as described in Table 1. For some Indigenous Peoples, for example, customary practices do not follow – and indeed may be hostile to – market-oriented strategies for development. So, recognising and indeed spreading legalised control by such groups are a priority. For other local communities, market-oriented strategies to generate income are preferred. And for these, mechanisms are needed that both spread knowledge of how to undertake SFM (including for commercial purposes), and also incentivise SFM in practice.

One of the main tools that has been used to spread knowledge about SFM in the world's forests, and to try and create such incentives to further spread SFM, has been forest certification – which helps channel demand from responsible timber markets towards verifiably sustainable timber production. Credible forest certification covers much more than just logging practices – it also accounts for the social and economic wellbeing of workers and local communities and ensures transparency and inclusiveness in decision making. Yet, despite work to spread and deepen its use over the past 20 years or so, forest certification still covers only a relatively small share of the global market for forest goods and producers serving those markets. Additionally, forest certification is a market-oriented mechanism – and therefore at odds with substantial numbers of Indigenous Peoples groups who maintain forest sustainably with little interest in market interaction.

Progress in certified sustainable forest management has mainly occurred in verified sustainability of specific forest management units in developed economies. The evidence of its wider benefit to an inclusive economy, nature conservation and to reversing the decline of biodiversity is not extensive, but what evidence there is points in a positive direction (e.g. Romero et al., 2013; Campos-Cerqueira et al., 2019; Tritsch et al., 2019). Nevertheless, not much certification is happening in the tropical forests where large-scale uncertified forestry operations are listed as a major driver of deforestation. Particular concerns have been raised over the way in which forest certification gives market advantage to the industrial-scale operators who are arguably the most problematic for sustainability, rather than the community forestry operators who are arguably the least. For large-scale operators, the necessary third-party audit costs are a relatively small component of overall turnover. For community forestry enterprises, the audit costs form a substantially larger percentage of turnover (Cashore et al., 2006; Burivalova et al., 2016; Hoang et al., 2019).

1.3 CHALLENGES OF RECOGNISING SFM BY IPLCS THROUGH FOREST CERTIFICATION

Forest certification is a recent phenomenon that has emerged against a backdrop of concern over deforestation – especially of tropical rainforests (Nussbaum and Simula, 2005). So, while the American Tree Farm System (ATFS) dates back to 1941, the pre-eminent global schemes started much later, such as the Forest Stewardship Council (FSC) in 1993 and the Programme for the Endorsement of Certification (PEFC) in 1999. Forest certification, in common with other eco-labelling schemes, is founded on four main elements (Nussbaum et al., 2002):

STANDARDS
The documents which set out the requirements against which certification assessments are made.

CERTIFICATION
The process of establishing whether those standards are met.

ACCREDITATION
The mechanism for ensuring that the organisations which undertake the certification are competent and credible.

LABELLING/TRACING
A set of rules that govern how a product may be tracked through different processing activities and how it may be labelled.

The inherent bias against small scale can be found in the second of these elements (i.e. certification), in the relatively fixed audit costs that must be paid to third-party accredited certifiers. The practical impact of such fixed audit costs is to discourage smaller scales of enterprise, such as community forestry, from getting certified (Hajjar, 2013). This has been a persistent complaint against certification since its emergence that has continued to be asserted, despite many efforts on the part of certification schemes to improve prospects for smaller operators (Markopoulos, 1998; 1999; Bass et al., 2001; Higman and Nussbaum, 2002; Molnar et al., 2003; Nussbaum and Simula, 2004; Cashore et al., 2006; Burivalova

et al., 2016; Hoang et al., 2019). When efforts to support SFM by IPLCs emphasise the need for forest certification, they often exclude the efforts of IPLCs who manage forests in ways that may be sustainable yet cannot affordably be proved. There may also be biases towards industrial players in how certification standards

PEFC CERTIFICATION BY REGION
(Total 326 million ha)

FSC CERTIFICATION BY REGION
(Total 200 million ha)

- Africa
- Asia
- Oceania
- C & S America
- N America
- Europe

Figure 1. Area covered by forest certification schemes by region as of December 2019

are set, because of differential resources to participate in those processes. Community forest experts have long concluded that the current structure of forest certification schemes would preclude the entry of many communities even if there were to be a simplification of the rules and procedures (Molnar et al., 2004). Some argue that it is simply inappropriate to impose certification on smallholder systems that are based on farmer tree planting or forest restoration (Flanagan et al., 2019).

Additionally, the complexity of SFM in tropical forests mitigates against certification there. The issues are not solely ones of poor governance, but also the simple fact that large-dimension commercial timbers must be extracted from among thousands of non-commercial tree species without damaging the long-term prospects of either. This is both technically complex and expensive to achieve. Accordingly, both of the major global schemes, FSC and PEFC, have very low coverage in the tropical regions (Lewin et al., 2019). Figure 1 illustrates the global coverage of the total 200,192,244 hectares of forest certified by FSC – and the deficit of certification in tropical regions.

There are several reasons to look at new and possible approaches and means of verification that could help recognise, in ways which then help spread sustainable forest management within the collectively huge, smaller-scale forest users undertaking forest management under collective or individual operations. But finding alternatives to installing, recognising and verifying SFM by IPLCs is not simple, especially in tropical countries, for six main reasons:

VALUE CHAIN DIVERSITY
First, local communities, smallholders and small-scale forest users (including, for example, chainsaw millers) serve diverse mainly local markets with a range of products including: biomass energy, industrial round wood, primary and secondary processed products, Non-timber forest products and services (see Table 3). The dynamics of those value chains and the different community contexts in which they originate will have different implications for SFM. For example, unchecked market demand for a particular timber species from an Indigenous territory may cause overharvesting and depletion of stock. The same unchecked demand served by farmers who have established on-farm plantations may drive an increase in tree cover as it inspires on-farm tree planting by neighbouring farmers.

Finished, processed certified wood stacked and labelled with details of species and final destination. © Edward Parker / WWF

SUBSECTORS	SECONDARY DIVISIONS	EXAMPLES
1 BIOMASS ENERGY	Fuel wood	Firewood branches and chopped logs
	Charcoal	Rough charcoal or compacted charcoal briquettes
	Wood pellets*	Chipped wood that may be dried to differing degrees
2 INDUSTRIAL ROUND WOOD	Logs	Sawn logs that may or may not be debarked
	Pulpwood	Sawn logs (including smaller dimension stems and branches)
3 PRIMARY PROCESSED PRODUCTS	Sawn wood	Planks and posts
	Pulp for paper*	Pulp feedstock
	Paper products*	Paper and paper board
4 SECONDARY PROCESSED PRODUCTS	Furniture and parts	Wooden chairs, office, kitchen or bedroom items
	Builder's joinery or carpentry*	Wood panels, parquet panels, shingles and shakes
	Shaped wood*	Unassembled parquet, strips, friezes, tongued, grooved, beaded, moulded and rounded wood
5 NON-TIMBER FOREST PRODUCTS	Food products	Fruits, nuts, seeds, including coffee and honey
	Oils and resins	Woodworking oils, cosmetic and medicinal oils, resins and gums
	Fibre products	Thatch, wickerwork furniture, craft
	Ornamental plants	Flowers, houseplants, garden and urban amenity planting
	Medicinal plants	Various remedies for internal and external application
6 SERVICES	Tourism	Parks, recreational sites (hiking, biking, canopy adventures, etc)
	Biodiversity conservation	Forest protection and management
	Watershed protection	Riparian strips, cover and steep slopes, etc
	Carbon sequestration	Forest management and restoration
	Hunting and gathering	Licensed harvesting

Table 3. Typology of possible community forest product and service subsectors
* = rarely produced by community forestry operations due to the high cost and complexity of the technology and product processing actions required.

VARIABLE FORMALITY

Second, communities engage these markets, often in sporadic ways, through local supply chains that are relatively complex – with diverse producers, intermediaries, and consumers – and with a low demand on sustainability. Either through lack of knowledge over correct procedures, or to avoid discretionary administrative costs and bureaucracy, or deliberately to avoid legal procedures and costs, many community forests business have a degree of informality. As result it is difficult for the market to distinguish between timber from well-managed forests in locally controlled systems and that associated with more unsustainable practices. Moreover, for some buyers it may be difficult to take the long view and cover the full costs of well-managed production schemes.

COST OF PROVING CLAIMS

Third, many uncertified forest owners and managers argue that they manage forests sustainably – and in turn arguably should be trusted so to do – but it is costly to assess the veracity of their claims. In the case of IPLCs, forest management may be part of wider efforts to manage and control access to territory and natural resources. Clearer working monitoring systems for assessing such management are often needed before these claims are in practice recognised by the market, by governments or by civil society actors. Perversely, lack of market access and recognition often robs those same people of the incentive to invest time and labour in sustainable management. This spiral of doubt undermines opportunity for more positive outcomes in many places.

CHALLENGE OF COLLECTIVE ACTION

Fourth, the collective scale of locally controlled sustainable forest management is already hugely significant. Small, but many, is big. Yet much more work is required to build collective organisations through which that collective scale can make decisive contributions to SFM. It takes to time to agree shared agendas, develop organisational structures, and ensure fair benefit distribution. More collective action by those smallholders who own, control and manage forest, seems both possible and beneficial – to prevent forest loss and degradation, and to secure benefits that forests provide in generating income streams and livelihoods. Some local groups have shown how external threats can be reversed and how forests can recover for long-term resilience – and further action could develop and spread these successes. Forest certification has yet to provide much of a stimulant to the spread of locally controlled forest management. Despite

many attempts to establish forest certification amongst small-scale forest managers and owners, its spread has been limited because the high costs involved in practice outweigh the tangible benefits secured. These local groups, however, may need to show their good performance to other actors, such as, for example, to secure tenure rights.

PRIVATE SECTOR DEMAND

Fifth, in global trade of forest goods, many companies are seeking to prove that they are meeting major sustainability and deforestation-free commitments made in response to public pressure. Some also face local pressure from growing concerns for social inclusion and protection of local tenure rights. As part of their efforts to `clean their supply chains', such companies are looking at the implications of their operations for third-party suppliers and others linked to or affected by company operations in the wider landscape – including local communities and forest users. Some companies are looking at routes other than certification or listening to calls to `go beyond' certification, to prove that they are meeting their commitments. However, if they work alone, this could lead to a proliferation of proprietary standards that become unnavigable in terms of identifying their effects on people and ecosystem services. And this can also create confusion amongst IPLCs with whom they want to engage.

PUBLIC CLIMATE IMPERATIVE

Sixth, there is the question of who should pay to avert the climate crisis, and therefore contribute to the costs of timber legality (e.g. under the EU Forest Law Enforcement Governance and Trade [FLEGT] Programmes) or SFM (e.g. under Reducing Emissions for Deforestation and Forest Degradation [REDD+] programmes). In the same way that Common but Differentiated Responsibilities and Respective Capabilities (CBDR–RC) have become a principle within the United Nations Framework Convention on Climate Change (UNFCCC), so we need to acknowledge at local level the different capabilities and differing responsibilities of individual actors in addressing climate change – and afford preferential support towards those most affected by climate change and least able to adapt to it, namely poor forest dependent communities.

This context suggests an urgent need to assess what more could be done to support IPLCs to engage in SFM, give them recognition for their efforts, and thereby help to spread good practice across the very significant forest areas in which forest-dependent communities of different sorts live.

SECTION 2.
PURPOSE AND
METHODOLOGY OF
THIS ASSESSMENT

Chela Elena Umir, from the La Chorrera indigenous community and member of the Ecosystem Services Assessment
(ESA) Technical Team, makes notes, as the team conducts an ecosystem service assessment of the forest surrounding
La Chorrera, Predio Putumayo Indigenous Reserve, Department of Amazonas, Colombia © Luis Barreto / WWF-UK

2.1 RATIONALE FOR THIS ASSESSMENT

CREDIBLE VERIFICATION OF SUSTAINABLE FOREST MANAGEMENT (SFM)

This report comprises an investigation of the possible ways in which approaches could be established – or existing ones better used – to engage with IPLCs, including smallholders and other users of natural and planted small-scale forest), in credible verification of sustainable forest management (SFM), as complements to certification.

Commissioned by WWF, the report attempts to look for possible breakthroughs, new or better ways of using existing approaches, or wholly novel yet credible means of verifying SFM, and the potential of potential of new technologies, and monitoring tools. As part of the review of its forest sector engagement work and the platforms it has used for nearly 20 years, primarily the Global Forest and Trade Network, and others, WWF is looking for ways to bring about better outcomes for forests by fostering impacts at scale.

THIS REPORT WILL HELP INFORM FURTHER DESIGN OF PROGRAMMES, PARTNERSHIPS AND COLLABORATIONS

This assessment was carried out before the COVID-19 pandemic and responses to it unfolded. At the time of writing, it is difficult to predict from available evidence how events will further unfold. However, we remain confident that the objectives of this work, and the conclusions derived, will be more not less worthy of scrutiny and further exploration after the crisis than before.

The intention is that this report will help inform further design of programmes, partnerships and collaborations with a view to accelerate increased uptake of SFM at the local scale, by multiple local forest users, at across different economic

and institutional contexts. This work has the potential to engage and inform the different perspectives embraced by WWF projects when dealing with local communities and natural resources management, specifically right-based approaches, landscape sustainability, and voluntary standard systems.

This investigation is not starting from scratch. It draws on years of work globally related to the experience and challenges of SFM, community and smallholder forestry, forest and biodiversity monitoring, local institutions for forest management, and engagement of smallholders and farmer organisations. While we endeavour to cite the most recent literature, we are not shy of referring to older texts where these make points that remain valid.

In each section, existing experiences and challenges are identified, with a view to possible pilot activities, to trial in the field, or in the market. An abiding concern, in assessing those options for greater recognition and spread of SFM by IPLCs, has been the need to ensure adequate assessment of changes in biodiversity and forest ecosystems services and on the ground benefits to people. Additionally, consideration is given to the practical potential and synergies between different options – for example, through participatory mapping at the local level and connecting traditional sources of knowledge with tools and techniques using digital technologies and platforms.

Members of Lakehlaaii community forest, measuring the tree during collecting the data in the forest in Tayatchaung township, Tanintharyi division, Myanmar. © Hkun Lat / WWF-US

The seedling nursery at Tien Phong Forestry Company, Huong Thuy Town, Vietnam. © James Morgan / WWF

2.2 OBJECTIVES AND METHODOLOGY

We have four main objectives in making this assessment:

1) Appraise approaches from within forestry and other sectors, that could alleviate the currently prevailing burden of verifying sustainable forest management by local communities and provide credible means for this verification to be recognised and rewarded. Provide examples of such approaches, with any pros and cons from experience and lessons learned.

2) Suggest how these approaches could work, proposing key elements and necessary enabling factors in these new or modified approaches, potentially at different scales, with a focus on tropical timber cost-effectively managed by local communities to the clearly evidenced benefit of local people, biodiversity and ecosystem services.

3) Describe the necessary links with, and likely effects on, existing approaches (notably certification) in the potential development of approaches, with consideration of specific contextual factors and options for mitigation to ensure that new approaches do not undermine existing initiatives.
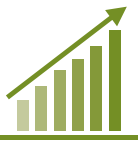
4) Recommend next steps in terms of additional research, dialogue and piloting of ideas or approaches by WWF.

The methodology for pursuing these objectives involved a work plan that included the following actions:

- Identifying potential approaches for analysis, in the forest sector and other sectors, and key issues that affect them or need to be considered

- Developing a framework for analysis involving: the main areas within which to select approaches for consideration; criteria against which to assess these approaches (i.e. what could be recognised, practical potential of those options, examples of verification mechanisms and issues of buy-in); and parameters for assessing possible options to take forward (including potential costs, benefits, risks, long-term robustness and credibility)

- Developing, communicating with, and interviewing a list of experts internationally, covering each of the main areas in the framework for analysis, and reviewing literature and available information in these areas

- Preparing a first draft of the analysis, inviting some key experts and practitioners to provide inputs in response to the first draft, conducting further analysis of options previously missed, fine-tuning assessment of risks, credibility and robustness, preparing a near-final draft and getting it independently peer reviewed before finalising it as this report.

2.3 FRAMEWORK FOR ASSESSMENT OF ALTERNATIVE APPROACHES TO RECOGNISE AND SPREAD SFM BY IPLCS

IIED developed several iterations of a framework for analysis of approaches that could be established, or existing ones better used, to engage IPLCs in credible verification and spread of SFM (see Table 4). The framework was designed around areas of promise for IPLCs where interventions could incentivise SFM in some way. The framework was developed from a body of work looking at governance options for improving the practice of forest enterprises (see Macqueen and Falcão, 2017).

Four key cross-cutting areas deserve direct attention and would seem to be integral to each of the other possible approaches. Drawing on recent private sector work on supply chains (Proforest, 2019), these other approaches can be divided into two further broad categories: (i) 'landscape governance' approaches, which are those that are focused on improving decision making associated with particular forest resources and geography; and (ii) 'supply chain' approaches, which are those associated with improving behaviour along chains of value derived from forest products and services. While both categories require partnerships between community forest groups and outside agencies, the first category also pertains to actions that could be taken if outside agencies make particular efforts to support community forestry, while the second category consists of actions that require the particular leadership of the communities themselves.

AREA OF PROMISE	HOW IT MIGHT HELP IPLCS	HOW IT MIGHT BE DONE
CROSS-CUTTING APPROACHES		
i **ACCOUNTABLE COMMUNITY ORGANISATIONS**	IPLC agency depends on the strength of accountable community organisations	■ Strengthen the emergence of legitimate locally-accountable community forest organisations (i.e. with some form of democratic decision making that also respects customary authorities), including higher levels of subnational and national federation – all of which needs resourcing for consulting with their constituencies
ii **CREDIBLE LOCAL ASSESSMENT**	IPLC agency depends partly on self-assessment and advocacy of its results	■ Develop mechanisms of assessment of forest management and enterprise practice appropriate for the objectives of IPLCs, but also credible to external actors
iii **FAIR SHOULDERING OF COSTS BY GOVERNMENT**	IPLC agency depends on a fair distribution of community forest costs and benefits	■ Work with government to increase the security of IPLC forest rights and decrease the bureaucratic requirements and costs for the formal registration and operation of IPLC forest businesses
iv **SUPPORTIVE PARTNERSHIPS**	IPLC agency depends partly on contacts or knowledge from outsiders	■ Foster partnerships that build political connectedness, forest management and other technical competence, business incubation and access to finance

Table 4. Some possible approaches for wider recognition and spread of SFM by IPLCs
The categorisation of approaches in the above table implies more separation than is likely to be useful in practice. SFM by IPLCs would likely benefit from a combination of some of the above approaches.

AREA OF PROMISE	HOW IT MIGHT HELP IPLCS	HOW IT MIGHT BE DONE
LANDSCAPE GOVERNANCE APPROACHES		
A **RESOURCE AND TENURE DATA AND MAPPING**	IPLCs need effective resource data, secure tenure and forest access – fundamental for guaranteed benefits flows and sustainable long-term planning	■ Earth observation technology – declining costs of satellite imagery, drone use and associated technology- related data development and the outcomes of improved earth observation may make land-use decisions more visible and help further tenure security and help channel economic incentives ■ Participatory mapping and simpler/cheaper/quicker on-the-ground resource assessment methods, including use of proxies - may present increasingly appropriate options for credible monitoring / verification of forest quality and maintenance by communities
B **B. LEGALITY ASSURANCE**	IPLCs need justly enforced laws without multiple discretionary payments in order to compete with industrial counterparts	■ Governments could provide incentives or compensations in recognition of demonstrated compliance of legality requirements ■ Local traders, intermediaries and processors in domestic markets could be made co-responsible with producers for compliance
C **C. FINANCIAL AGENCY IN LANDSCAPES**	IPLCs need access to finance for seasonal cash flow and technology upgrades that add value to (and thereby incentivise) sustainable use	■ Financial registries of tree-based assets, suitably insured or assured, could act as collateral for different types of green loans backed by collective guarantee schemes to reduce risk to those underwriting capital. ■ Loans based on assessed future compliance with ecologically beneficial changes (e.g. contour tree planting, conservation areas and other measures which could act as proxies for SFM) ■ Certification of financial investment portfolios that impact community forests could be audited by international environmental agencies to greatly improve the current wide spectrum of so-called 'green investments'
SUPPLY CHAIN APPROACHES		
D **BUSINESS RELATIONSHIPS – SUPPLY CHAIN VERIFICATION**	IPLCs need diverse stable trusting business partners (especially buyers) in order to negotiate fair prices for products and access more lucrative markets	■ Participatory guarantee ssystems (PGS) for verification of sustainable supply could be developed, learning lessons from experience with specific agricultural commodities involving high levels of participation of smallholders for cotton, cocoa and coffee ■ Trader platforms based on sustainable forestry (e.g. BV Rio Sustainable Timber) or organisations to represent community forestry, promote its products and develop standards and brands that align with community forestry could be further strengthened or developed
E **BRAND RECOGNITION – PAYING MORE FOR VERIFIED PRODUCTS**	IPLC need to be visible and compensated for the socio-environmental benefits they provide (and costs they incur)	■ Instead of producers carrying the uncompensated burden of certification, perhaps a model could be developed based on financial recognition for supporting improved environmental and social outcomes (i.e. fair trade) ■ FSC certification could be reworked in such a way that it provides a more level playing field for community forestry and offers a means of distinguishing the more complex and socially beneficial impacts that good community forestry can provide
F **TECHNOLOGICAL CAPACITY – BETTER CONFIDENCE IN TRACEABILITY**	IPLC need qualified staff to take advantage of regular business and finance management but also technological trade innovations	■ Businesses could pay forest producers, as soon as they provide evidence of sustaining forest related values, using improved information and communication technologies (ICTs), including perhaps blockchain applications, thus losing less tangible value in the supply chain or accruing it only downstream by those gaining market recognition and trust as sustainable ■ Ecosystem services of forests sustained by IPLCs may be well recognised through simple ICT developments and e-banking

2.4 CROSS-CUTTING APPROACHES TO IMPROVE RECOGNITION AND SPREAD OF SFM BY IPLCS

A literature review substantiated the findings of interviews in the drafting of this report in emphasising the centrality of four vital elements of any combined approach:

ACCOUNTABLE ORGANISATIONS

First, the need to support the development of **accountable organisations** at the level of the community which can oversee efforts towards SFM that are profitable for the community as a whole (i.e. are capable of generating and spreading benefits transparently and fairly within the community). The legitimacy of local organisations rests on their cultural-embeddedness and accountability (Brown and Lassoie, 2010; Rantala et al., 2012). Promoting gender equality within these organisations is a critical part of accountability. At least half of the 1.5 billion people globally who depend on forest

At least half of the 1.5 billion people globally who depend on forest landscapes are women. In Thaveng Village, Bolikhamxay Province, women and girls basket weave rattan products that are sold in Laos. © Thippakone Thammavongsa / WWF-Laos

landscapes are women. And of the 1.4 billion who live on less than US$1.25 per day, it is estimated that 829 million are women and girls (522 million men and boys) with most living in forest landscapes (Poschen, 2015). Even when women own land, socio-cultural norms institutionalised through organisational policies and practice often view men as household heads. This can hinder women's ability to influence decision making in community organisations, make business use of forests and access extension and other services, such as subsidies (Djurfeldt, et al., 2018).

This need to inaugurate and strengthen **accountable organisation** applies (albeit differently) across the various potential types of community forestry – from indigenous territories, through to communal forests, to the collective actions of private forest smallholders or processing groups, and is the subject of much recent emphasis (see FAO and Agricord, 2012; Macqueen et al., 2014; Baynes et al., 2015; Pasiecznik et al., 2015; IUCN, 2017). Innovative ways of improving women's leadership and gender accountability in such organisations include building critical mass of women's membership, defining quotas for leadership, peer-to-peer mentoring by women leaders, and setting up tailored capacity-building processes for women (Bolin, 2018).

The accountability of organisations at community level relates not only to running SFM businesses but also generating and maintaining social cohesion in so doing. In many communities, even communal land 'belongs' to clans or families (mostly traditional management right as opposed to alienation right). As such,

the idea of community forest enterprise must think through how to engage and reward different clans for their involvement in ways that are fair but still give collective advantage from working together. This introduces real challenges in selecting who does what within these organisations, balancing family and also gender considerations, but also accommodating customary authorities in at least an 'advisory board' arrangement. It is certainly the case that some cultures are more prone to specific models of collective action – and that new business structures may take a considerable period of accommodation between the needs of commerce and the traditional structures that have protected forests in non-market settings. New forms of accountability need to emerge that are acceptable in particular socio-cultural contexts and are deemed 'trustworthy'. Trust is particularly important because no community enterprise may comprise all community members – and so there needs to be clarity over responsibilities and rewards that takes time to develop, plus a good deal of basic education on how to run businesses and collective organisations.

CREDIBLE LOCAL ASSESSMENT

Second, the need for **credible local assessment** of forest management and enterprise practice appropriate for the objectives of IPLCs. Third-party certification – with its 'guilty until proven innocent' modality – might be appropriate for profit-driven corporates operating in foreign jurisdictions and trading internationally. But for community forestry, mainly serving local markets, a different modality is needed (in part because few local markets know or care about FSC or PEFC certification). Additionally, in autonomous Indigenous territories, or in legally decentralised and democratically controlled community forest areas, or in areas of smallholder on-farm tree planting, the appropriateness of third-party certification is much more questionable. Requiring paid proof that such groups are delivering SFM seems absurd in contexts where forests sustained by them for generations are now coming under external pressure, or where they have legal autonomy to sustain forest cover or not, or where they have clearly restored forest cover. Indeed, a vital step in any assessment of alternative options is to recognise the different contexts and types of community forest (see Table 1) and the different risks to sustainability of sourcing goods or services from them, and then the scope and depth of assessments and how reliable, independent and transparent they can be. A key question then is how to develop less intensive and more effective on-the-ground resource and enterprise practice assessment methods that are locally credible and legitimate – and developments with Information and Communication Technologies (ICTs) are likely to be a key part of the answer. Again, this raises the issue that developments in these areas may require considerable investments in basic education on information technology and assessment methods.

FAIRER DISTRIBUTION OF COSTS/ BENEFITS

Third, the general need for a much **fairer distribution of costs/benefits** between (and within) IPLCs and government authorities in the setting up and administration of community forestry (i.e. addressing the generally elevated costs of compliance with government policies and laws for community forestry). Co-management systems are attractive to both communities and governments because they open avenues for local participation in forest governance while maintaining some degree of state protection. However, they often place a burden on community-level actors without providing the corresponding benefits (Cronkleton et al., 2012; Chomba et al., 2015; Larson et al; 2015; De Royer et al., 2018), and this may in part be explained by real tensions in community forestry policies deriving from power struggles between communities and national, provincial and district bureaucracies (Sahide et al., 2016; Moeliono et al., 2017). Furthermore, in many cases research focuses on the environmental outcomes of community forestry without giving adequate attention to the socioeconomic benefits of those outcomes (Hajjar et al., 2016).

PARTNERSHIPS

Fourth, the general need for **partnerships** between communities and external agencies in developing profitable SFM by IPLCs (both government and non-governmental organisations [NGOs] and companies). The mixed outcomes from community forestry to date can be explained at least in part by the existence or not of a community of practice that links local people to external forest professionals for mutual learning, based on respect and trust (Arts and Koning, 2017; Pujo et al., 2018; Minang et al., 2019). Such a community of practice generally makes a positive difference in terms of both livelihoods and forest conditions.

> **These four vital elements for the successful recognition and spread of SFM by IPLCs are integral to each of the options explored in the following sections. These options are grouped into the two broad categories defined above – 'landscape governance' approaches, and 'supply chain' approaches.**

Forest Management Area within the Kubaan Puak Project Site © WWF-Malaysia / Mazidi Abd Ghani

SECTION 3.
LANDSCAPE GOVERNANCE OPTIONS FOR RECOGNISING AND SPREADING SFM BY IPLCs

3.1 FOREST RESOURCE AND TENURE DATA AND MAPPING

3.1.1 HOW MIGHT BETTER TENURE AND FOREST RESOURCE DATA HELP RECOGNITION AND SPREAD OF IPLC SFM?

DURATION

rights must last long enough to make investing in sustainable forest business worthwhile

ASSURANCE

rights must guarantee that forest and farm producers benefit from the returns or their investment free from interference

ROBUSTNESS

rights must be enforced and easy to defend in a court of law

EXCLUSIVITY

rights must in no way overlap with the rights of external investors or government agencies

SIMPLICITY

rights must be simple to acquire and free of excessive bureaucracy or costly registration.

It is not just the allocation of tenure rights that is important. It also matters how those rights (and associated obligations) are prescribed, administered, supported and enforced – i.e. good forest governance. It is this good forest governance that enables community forest business based on SFM to flourish. In many cases communities are given formal forest management rights but their utility is limited by associated obligations or by other state rules and regulations (Larson and Dahal, 2013). Tenure delimitation may not alone avoid community land expropriation and degradation by external parties without supporting institutions that enforce exclusion rights (Gebara, 2018). In countries such as China where enforcement is practiced, evidence has shown that tenure reforms in favour of collective groups have had a very positive impact on the efficiency of farmers managing timber forests and bamboo forests (Liu and Sun, 2019).

A compelling body of evidence points to secure forest tenure as

A ground map completed by a community in the Central African Republic. © RF UK

foundational for the recognition and spread of SFM by IPLCs (White and Martin, 2002; Pagdee et al., 2006; Lawry et al., 2011; Persha et al., 2011; Robinson et al., 2011; Macqueen, 2013; Yin, 2016). The culmination of the work of the Rights and Resources Initiative in establishing 'The Tenure Facility' as a funding mechanism for securing community forest tenure is a case in point (The Tenure Facility, 2018). Forest communities can hardly be expected to shoulder the significant and long-term costs of SFM unless they have some degree of confidence that they will benefit from the proceeds of sustainable extraction. So there needs to be some matching of tenure, and the geospatial data records of it, and enforcement of it to the forest users – in this case forest communities.

Tenure is in part a geospatial concept. Participatory field-based mapping can help to facilitate and thereby help secure tenure. Such participatory mapping using Geographic Information Systems (GIS) has been shown to contribute positively to good governance. It improves dialogue, redistributes resource access and control rights – though not always equitably. It also legitimises and uses local knowledge, exposes local stakeholders to geospatial analysis, and creates some actor empowerment through training (McCall and Minang, 2005). More recently, participatory mapping has been used as a means of establishing areas of community forest use in order to make or contest tenure, often in the face of powerful claims by agribusiness (RFUK, 2019a). GIS systems can now routinely function on mobile phones or tablets to generate spatial data files that can be used to produce tenure maps. Provided trust can be built during the process and use of resultant maps, participatory mapping seems to offer a route towards greater recognition of the actual use of community forests (Brown and Kyttä, 2018).

Satellite-based remote sensing can now add to the tenure information contained in geospatial maps information about forest cover, including degradation. Fusion of complementary optical and radar data available from remote sensing missions can hugely aid efforts towards accurately determining land use and quantifying subtle changes in land use management or intensity – including forest condition (Joshi et al., 2016). In other words, new remote sensing data can help improve the recognition of SFM by IPLCs that can further secure their tenure claims and help advocate for further devolution of tenure rights to communities. However, at present, the higher resolution data that are needed for assessments of forest condition are not freely available, and so tracking activities such as illegal logging is not yet easy or financially viable. And of course, it is not possible to track the extraction of specific timber species from a diverse natural forest.

What is now routinely possible is to track forest cover changes that result in complete clearance, with more limited possibility to assess biomass maintenance (giving some indication of degradation) (Carreiras

and Rodriguez-Veiga, 2019). This is easiest in tropical high forests. It is much more difficult in the remaining two thirds of forest cover types – such as African dry woodland. Nevertheless, in those tropical high forests such tracking and endorsement could provide IPLCs with recognition for efforts to maintain forest cover. Although this does not equate to an assertion of SFM – an assertion of 'no forest cover change' might be a sufficient measure of sustainability for most of the markets that communities sell into. If those claims could be made without additional cost to IPLCs, uptake might be widespread. These developments open up the opportunity that remote sensing, if combined with information on community forestry tenure at national level, could provide a means of recognising community forest groups within which forest cover is maintained.

3.1.2 EXPERIENCE AND CHALLENGES OF DEVELOPING BETTER DATA TO VERIFY IPLC SFM

Programmes to develop community capacity to use GIS to map tenure and monitor forest use are now widespread. For example, the Forest Compass programme of the Global Canopy Programme (GCP) charts numerous community organisations across tropical forest regions that are engaged in that process. Most of them are based around strongly accountable organisations such as: the Aliansi Masyarakat Adat Nusantara (AMAN) in Indonesia; the Federation of Community Forest Users Nepal (FECOFUN) in Nepal; the Apiwtxa Association of the Ashaninka and Metareilá Association of the Suruí Indigenous People in Brazil; the North Rupununi District Development Board (NRDDB) in Guyana; the Centre for the Autonomy and Development of Indigenous Peoples (CADPI) in Nicaragua; the Executor of the Administrative Contract of the Amarakaeri Communal Reserve (ECA-RCA) in Peru; the Indigenous Peoples' International Centre for Policy Research and Education (Tebtebba) in Kenya, Cameroon and elsewhere; Mjumita in Tanzania; and so on. Many examples have been usefully supported by REDD+ finance.

In a summary of progress in Guyana linked to the national REDD+ strategy, it was found that well-organised community groups could readily undertake many of the steps of credible local assessment. For example, they could map community tenure and resources, identify drivers of deforestation, ground-truth remote sensing data from satellites, assess above-ground biomass and agree and monitor indicators for assessing natural resources and community wellbeing (Global Canopy Programme, 2014). Indeed, using REDD+ funding to both define communities' territorial claims and help them contribute to monitoring, reporting and verification (MRV) has been a priority for at least a decade (Skutsch et al., 2009). Yet a much more concerted upscaling of such efforts would be necessary to recognise and spread SFM by IPLC groups.
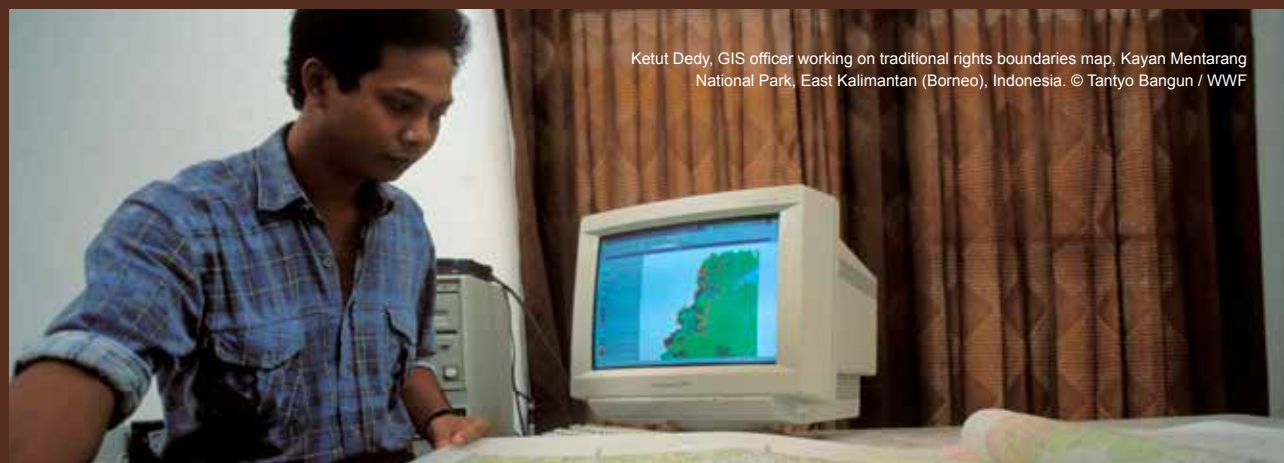
Ketut Dedy, GIS officer working on traditional rights boundaries map, Kayan Mentarang National Park, East Kalimantan (Borneo), Indonesia. © Tantyo Bangun / WWF

BOX 2. USING PORTABLE GEOGRAPHIC INFORMATION SYSTEMS (GIS) ON SMARTPHONES OR TABLETS TO HELP COMMUNITIES IN 'MAPPING FOR RIGHTS' IN CONGO BASIN FORESTS

The 'Mapping for Rights' approach builds on traditional participatory mapping approaches – combining participatory methods (such as semi-structured interviews, diagrams and visualisations) with modern cartographic tools (i.e. smartphones or tablets that have Global Positioning Systems [GPS] enabled). Facilitation is a core component in enabling the entire process to be community driven.

Using GPS-enabled tablets, motorbikes, laptops and projectors, video cameras and portable generators, field teams in, say the Democratic Republic of Congo (DRC), spend between US$780-930 on all the work leading up to the production of a community map. Information is collected in eight data categories: village characteristics; cultural and livelihood activities; natural features; roads and rivers; traditional tenure; education; and health.

The 'Mapping for Rights' process is carried out in eight consecutive stages:

- **Stage 1:** Identification and information – at which community is located, the process, and information necessary for Free Prior and Informed Consent (FPIC) shared and basic information on the community collected.

- **Stage 2:** Scoping – at which FPIC is agreed, conditions necessary for the mapping discussed, criteria for selecting mappers agreed, and purpose of the whole exercise defined.

- **Stage 3:** Training of community mappers – at which the basics of mapping and its production, including the use of equipment is explained, and logistics planned.

- **Stage 4:** Data collection – at which symbols defining elements are chosen, a paper-based ground map prepared, and then GPS data based on that map collected.

- **Stage 5:** Data transfer and verification – at which all georeferenced data are transferred onto a computer, merging streams from different tablets, and then checked with the community

- **Stage 6:** Production and full draft of community map – at which the verified data is transferred onto official baseline maps and checked with QGIS software to check for accuracy – plus work with local community mappers to improve representation.

- **Stage 7:** Validation – at which the map is shown and compared with the ground map, circulated, commented on, revised and then finally validated.

- **Stage 8:** Supporting communities in the use of their map – at which facilitators identify with the community the problems faced and the objectives that maps could help them achieve, with legal analysis, advocacy resourcing plans, responsibilities, representation, and so on.

Communities living in and around the Congo Basin's many designated protected areas and national parks have used this approach to map traditional lands and resources and to promote their rights. For example, in 2010, around 20 indigenous and Bantu communities around the Mbaéré-Bodingué National Park in Central African Republic (CAR) used their maps to influence the management plan for the area. In 2014, representatives from more than 50 communities around the controversial Tumba-Lediima Reserve in Western DRC proved their ancestral claims to the area in landmark meetings with local and national authorities, resulting in a reduction of heavy-handed policing by eco-guards and a commitment by local and national authorities to review the boundaries and management of the area.

More recently in the DRC, eight communities have developed land use plans and six community concessions have been granted with four more in the pipeline in Equateur and North Kivu, benefitting 25,000 people and bringing more than 100,000 hectares under community management. With community concessions now allowed up to 50,000 hectares and 75 million hectares available (three times the size of the UK) – much more is needed to take advantage of recent legislative possibilities (RFUK, 2019b).

FIELD-BASED GIS DATA HAVE HELPED TO RECOGNISE COMMUNITY TENURE AND RIGHTS
(RFUK, 2015)

Even in the most politically challenging of situations, such as in the forests of the Congo Basin, participatory mapping methods using field-based GIS data have helped to recognise community tenure and rights (RFUK, 2015). For many of the Indigenous Peoples' groups using these techniques, traditional territories involve seasonal and mobile activities covering large areas, and often overlapping with activities from other communities – so the 'Mapping for Rights' approach has evolved to accommodate such realities in a flexible manner (see Box 2).

As the possibilities of satellite-based remote sensing have advanced, a range of forest monitoring products, including 'rapid detection' or 'early warning' products have been developed (see Herold et al., 2018). These include, for example, the US-based Global Forest Watch (GFW) platform using mostly Landsat 8 satellite data (and MODIS satellite data for fires) that are co-managed by the United States Geological Survey (USGS) and the National Aeronautics and Space Administration (NASA) with associated alerts on tree cover loss from the Global Land Analysis and Discovery (GLAD) lab at the University of Maryland (Hansen et al., 2016). The Japan-based JICA-JAXA Forest Early Warning System in the Tropics (JJ-FAST) service uses JAXA's Advanced Land Observing Satellite-2 (ALOS-2), while European systems draw on the European Space Agency (ESA) twin Sentinel-2A (in 2015) and Sentinel-2B (in 2017) satellites as part of the EU's Copernicus programme.

The Brazilian PRODES programme also monitors and creates alerts for tree cover loss using Landsat 5 images, but now also imagery from Landsat 7 and 8, CBERS-2, CBERS-2B, Resourcesat-1, and UK2-DMC. The system covers the Amazon and is operated by the National Institute of Space Research (INPE) in collaboration with the Ministry of the Environment (MMA) and the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA). Brazil has also developed the DEGRAD system now managed as DETER (the rapid response programme of the Brazilian government) to monitor forest degradation, also using Landsat and CBERS satellite data.

The wealth of complementary data available from remote sensing sources can hugely aid efforts towards accurately determining land use and quantifying subtle changes in land use management or intensity (Joshi et al., 2016). Remote sensing's greatest asset is to provide data for areas where ground observations are costly and difficult or impossible. Yet it is only very recently that work to improve algorithms and data inputs has matured sufficiently to be implemented within operational monitoring programmes (Hansen et al., 2016).

REMOTE SENSING DATA ARE PARTICULARLY USEFUL WHEN COMBINED WITH GIS DATA ON COMMUNITY TENURE

Remote sensing data are particularly useful when combined with GIS data on community tenure – that would ideally come from accurate ground mapping into GIS data files using handheld smartphones or tablets. Claims can then be made by communities about their retention of forest cover. Even when only the general area of community rights is known, precise mapped details of tenure may be unnecessary provided that the monitoring of forest cover change picks up no instances of unexpected forest cover change in the vicinity of community occupation. For example, the Dryad programme in Cameroon makes staged payments for enterprise support available to communities that are conditional both on particular agreed business improvement actions and on not detecting any unexpected forest cover change in the communities' vicinity (Piabuo et al., 2019).

Similarly, the Bolsa Floresta Programme in the Brazilian Amazon makes payments to communities that are conditional on the absence of forest cover change in the GIS-mapped community areas (see Box 3). This means of assessing community forest protection (in the sense of observing no forest cover change through remote sensing) is one way in which programmes can improve recognition of IPLCs in forest protection. It is relatively inexpensive to develop models using, for example GFW data to generate month by month breakdowns of IPLC forest cover monitoring. At the same time, the costs of higher resolution data and the lack of robust and widely agreed techniques of fusion to map the intricacies of land uses and changes are clearly ongoing barriers – and currently mitigate against confident assertions that IPLCs are abiding by stricter rules of SFM, i.e. doing more than just keeping forest cover intact. With time, however, many of these technological costs may diminish, opening up real possibilities for such conditional payments based on SFM performance by IPLCs.

ASSESSING COMMUNITY FOREST PROTECTION IS ONE WAY IN WHICH PROGRAMMES CAN IMPROVE RECOGNITION OF IPLCS IN FOREST PROTECTION.

Children at the local school in the community of New York, a small town living alongside the Tiger river, a tributary of the Amazon river, Loreto region, Peru. © Brent Stirton / Getty Images / WWF

BOX 3. USING FOREST COVER MAINTENANCE, ASSURED BY REMOTE SENSING DATA, AS A CONDITIONALITY FOR BOLSA FLORESTA'S PAYMENTS FOR ECOSYSTEM SERVICES

The Bolsa Floresta Programme (BFP) was created in 2007 and is an Amazonas state-level public policy that represents a hybrid of conditional transfers and payments for ecosystem services (PES). To join the programme, communities had to be sited in Protected Areas and agree not to deforest pristine forest in riverine communities, send their children to school, and have lived at the reserve for at least two years. Initially administered by the State Secretary of Environment, with the support of Idesam, a non-governmental organisation (NGO) from the Amazon, BFP has been implemented by the Sustainable Amazonas Foundation (FAS) since 2008. FAS, an NGO, was created through a partnership of Bradesco Bank and the Amazonas State government.

BFP involves a mix of four categories of direct cash rewards and community-based investments including: (i) BF Familia - short-term cash payments to women in households of participating communities (44% of total); (ii) BF Social - investment in community infrastructure (26% of total); (iii) BF Associaçao – payments for the empowerment of community associations (4% of total); and (iv) BF Renda – investments to kick-start sustainable community businesses. The programme successfully combines multiple streams of funding from the public and private sector who wish to protect the Amazon forest. It makes transfers at household and community level.

BFP is one of the oldest and largest programmes aimed at promoting environmental conservation and poverty alleviation in the world (Börner et al., 2013). It began with a few communities in two protected areas and now involves an area of 10.9 million hectares, 583 communities and 16 protected areas.

The BFP funding source was initially designed to come from REDD+. But as Copenhagen COP 15, and others afterwards, failed to deliver international funding for REDD+ a change in the funding strategy was initiated. Instead of REDD+, donations from government and business were used as a bridge to larger REDD+ funding. Most funding for BFP (a total in excess of US$38 million) has come from donations without relationships with REDD+, except those from Marriott Hotels (US$2 million) and the government of Norway through the Amazon Fund (US$4.5 million plus US$7.4 million). All management costs, including staff salaries, participatory planning workshops, logistics and other costs accounted for 24% of costs.

In terms of economic impacts, the substantial family (cash) component paid through a Bradesco Bank debit card has directly raised incomes in individual families. The social component of BFP has included investment in the construction and reconstruction of 67 schools, installation of 160 radio communication stations, 91 river ambulances, water supply, energy generation, boats and internet access, among others. Environmental impacts are monitored through satellite assessments of tree cover loss and fires in the protected areas. Assessments point to a reduction in deforestation, which, relative to an average five years before the beginning of the programme (2003–2007), was reduced by 28% in the first five-year period (2008–2012) and another 37% in the following period (2013–2015), totalling 54% compared to the baseline. Forest fires have also reduced, for example falling to 775 fires in 2016, down from 1,473 in 2015 in all BFP areas.

One important lessons from the BFP is that having one broad objective for the scheme (`standing forest'), rather than more complicated notions of SFM, provides a common denominator at all levels and helps to amalgamate resources from various scheme investors into a single budget with a common objective, avoiding duplication of efforts, double counting, and negative spill-overs.

Source: Viana and Salviati, 2018

An important cautionary point to make is that high technology remote sensing solutions may often lack local legitimacy and be less accurate than alternative more participatory methods. Especially where community forest groups are to be rewarded or paid for maintaining ecosystem services – monitoring provides the basis for such payments for ecosystem services (PES). This was particularly found to be true in smallholder carbon PES systems – where five monitoring approaches were assessed (two remote sensing, and three field-based approaches) in two well established projects in Uganda and Mexico. Participatory field-based approaches were found to outperform remote sensing data in all four areas of: accuracy, cost, local legitimacy and local equity. These benefits arising from the applied field-based approaches, especially regarding local legitimacy and equity, involve substantial 'co-benefit' that may not be as readily provided in remote 'monitor and pay' models (see Wells et al., 2017).

The use of simple assessment techniques to cut costs, that are comprehensible at the community level, is also at the core of PES schemes such as the voluntary carbon scheme Plan Vivo. In that scheme, assessment of maintenance of a level of biomass, costing only a few tens of dollars per year, is achieved through simple ways showing the maintenance of forest area. This is done rather than pursuing more complex on-site carbon calculations – and can include scraps of woodland around farms. Measuring quality of forest area requires on the ground survey and may benefit from the use of drones. This brings a cost hike, but many argue that the local legitimacy described above relies on this and, with improving mobile connections and technical innovations, can in the coming years put previously complex ecosystem analysis in the hands of local non-specialists cost-effectively (Wells et al., 2017). An example of a potentially cost-effective and credible local forest biodiversity assessment approach is Forest Integrity Assessment – see Box 4.

PARTICIPATORY FIELD-BASED APPROACHES OUTPERFORM REMOTE SENSING DATA IN ALL FOUR AREAS

WWF Myanmar Staff Ko Zin having meeting with members of Lakehlaaii community forest after collecting the data in the forest in Tayatchaung township, Myanmar.© Hkun Lat / WWF-US

Community members conducting a biodiversity assessment in a community forest in Koh Kong province in Cambodia. © Shruti Suresh / WWF-Cambodia

BOX 4. FOREST INTEGRITY ASSESSMENT – A POTENTIALLY COST-EFFECTIVE AND LOCALLY LEGITIMATE APPROACH TO FOREST BIODIVERSITY ASSESSMENT

Forest Integrity Assessment (FIA) is a simple and user-friendly checklist approach designed to allow land managers and other non-biologists to carry out quick and effective estimates of forest biodiversity levels (HCV Resource Network, 2018). It compares the site in question with an 'undisturbed' natural reference forest. FIA uses a checklist – a set of proxies - which is adapted for the forest type where it will be used, so that the indicators are appropriate and relevant. Checklists have been developed and adapted for a various forest types including some in southeast Africa and Southeast Asia. This has to date been done typically by a small team including a forester or forest ecologist, a botanist and a zoologist over 3–4 days in the field.

The checklist fits on a single sheet of paper and covers: (i) structure and composition – number of large trees known to be important for biodiversity, presence of regeneration, presence of coarse woody debris, other elements specific to that forest type such as the presence of lichen or anthills; (ii) impacts and threats - presence of trees of high commercial or local value, visibility below the canopy and lack of undergrowth (which is favoured by disturbance), presence of invasive species, evidence of fires, illegal hunting, poisoning, capturing or collecting, logging and forest clearance for permanent agriculture, and accessibility by vehicles, motorbikes and boats; (iii) focal habitats - such as wetlands, springs, lakes, streams and rivers, bogs, peatlands, marshes and fens, steep slopes, cliff and ravines, open heath and meadows mixed

with forest; and (iv) focal species – usually a subset of national protected or IUCN-classified Rare, Threatened or Endangered species.

After 1–2 days of training, local assessors work in pairs or small teams, using the checklists to evaluate one or more sample plots and come up with an integrity score. Typically, a 100m stretch of transect in a plot might take 30 minutes, so a number of plots can be assessed and the average score used. Assessments can be repeated and integrity scores from different years can be compared to monitor change over time (Proforest, 2018). Proponents of FIA have described how paired assessors have worked competitively, which has strengthened its viability over time. These proponents have even had the confidence to claim that it is fun to do!

The FIA approach has been developed over almost 30 years and assessments have been done in Mozambique, Laos, Cambodia, Malaysia, Panama, Indonesia, Chile, Portugal, USA, Brazil and Guyana. It has been adopted by a SE Asian community forest network and has also begun to be proven useful linked to companies involved in the Roundtable for Sustainable Palm Oil with their commitments to social outreach programmes and participatory approaches in the set aside remnant forest patches amongst the oil palm (these big companies will be expected to do rigorous scientific monitoring in these patches too). A smartphone application of the approach is currently being developed - field data will be uploaded to a dashboard which may further improve its usefulness and agility.

To date, practical application of Forest Integrity Assessment seems to be developing faster amongst corporations aiming to manage forest remnants in plantation developments than amongst community forestry protagonists (HCV Resource

Network, 15 March 2019). However, experience with pilots in community forestry settings lead some to suggest that, with the development of a smartphone application, its use might spread in such settings quite quickly.

3.1.3 PRACTICAL POTENTIAL AND SYNERGIES

In the introduction to this section we noted the importance of secure tenure as a basis for SFM by IPLCs – and how this needed to involve both geospatial recognition of community forestry, but also good governance to enforce any tenure claims. As evidence has increased that ceding control over forests to IPLCs often improves both local livelihoods and forest protection, there has been a steady devolution of control towards IPLCs. In most cases this devolution has included embedded conditionalities – such that control is devolved in return for planned SFM of some sort. There are therefore three interlinked options whereby better data can help this process of recognition and spread of SFM by IPLCs: better geospatial mapping of community territories; better remote sensing of the land use changes within those community territories; and better options to capture and distribute benefits arising from SFM within community territories.

First, new approaches to participatory mapping that combine local involvement with modern field-based GIS capability can quickly and cheaply generate credible maps of community land use, as a means of: strengthening tenure claims; discussing and reaching consensus on community land use plans; and concretising geospatial responsibilities for SFM within those plans. Participatory mapping has become a regular component of REDD+ and landscape restoration planning – as it paves the way towards quantifiable forest-related targets, negotiated community management interventions and clearly defined responsibilities and conditionalities against which payments for the resulting ecosystem services can be made. There are obvious synergies here with calls, which we describe in the next section, for setting up specific 'funds' to cover costs associated with community 'legalisation', 'certification audits' or 'enabling investment programmes for community organisations' (such as the Forest and Farm Facility). Certainly, there is a need to accelerate participatory mapping to formalise rights at a much greater scale than is currently the case. Several networking initiatives amongst Indigenous and Community Conserved Areas (ICCAs) offer analysis and guidance for such upscaling (see ICCA Consortium, 2020 and ICCA Registry, 2020).

Second, new more affordable approaches to use remote sensing data from many different space agencies is making it much easier to assess forest cover status within community forest territories. It is easily possible to track the complete loss of forest cover in tropical high forest, although less easy to do the same in drier more open woodlands.

Assessing forest degradation (and indeed more problematic practices such as illegal logging) is increasingly feasible but not yet routinely affordable because it does not rely on publicly available free data. Thus, it is not generally possible to detect forest degradation until the forest is very fragmented which presents problems for quick verification of SFM remotely. While remote sensing data can help to verify that large-scale clearance is not taking place, local checks are also needed to prevent degradation.

Third, new ICT options for reporting and financial transfer open up possibilities to reward communities for observable progress in protecting forest cover. Money can now be sent to either joint accounts or individual accounts remotely. Systems to capture finance from different sources and then redistribute it in prescribed ways to communities involved in SFM can be negotiated so as to incentivise individual and collective action and avoid individual abuses of the system. There are options, and existing systems, that have been developed to reward communities for maintaining forest cover using the readily available remote sensing data. Examples include the Bolsa Floresta Programme described in Box 2 – and also the Health in Harmony approach described in Box 14. The use of such data is most effective when such programmes are highly participatory and span large or national areas such that assessment costs (including analysis and interpretation) do not have to be repeated endlessly by each community on a project-by-project basis.

On a more cautionary note, using remote sensing data to aggressively enforce forest protection without prior community engagement, and without offering livelihood alternatives, is unjust and to be resisted. Approaches that involve securitisation of conservation (part of a colonial history outlawing hunting for local communities and taking over biodiversity-rich lands for the enjoyment of the colonial elite) have rarely proved effective (Duffy, 2014; 2016) So while rapid assessment alerts have been developed by specific national governments and agencies to identify infractions, these need to be used judiciously. Instead, more could be done to use remote sensing data to recognise forest cover protection by communities and establish participatory payment systems for the ecosystem services this protects.

Initiatives which improve useful information and data appear to be on the cusp of driving collectively large-scale empowerment of IPLCs in their forest management. The following sections and case material in our report explore the constraints, as well as the opportunities, to other forms of initiative which highlight some of the embedded policy and economic blockages to such data-driven empowerment.

3.2 LEGALITY ASSURANCE – OPTIONS EMERGING THROUGH LEGALITY ASSURANCE SCHEMES AND INCENTIVES

3.2.1 HOW MIGHT LEGALITY ASSURANCE AND INCENTIVES HELP THE RECOGNITION AND SPREAD OF IPLC SFM

Controlled directional felling in FSC-certified tropical rainforest producing Meranti timber for use in garden furniture. Northern Malaysia © Thippakone Thammavongsa / WWF-Laos

IN MANY COUNTRIES WHERE GOOD FOREST GOVERNANCE EXISTS IT IS THE LEGAL REQUIREMENTS TO REPLANT AFTER FELLING

MORE THAN 190 ORGANISATIONS ENDORSED THE NEW YORK DECLARATION ON FORESTS (NYDF)

As already noted in Section 3.1.1 in the discussion of tenure, good forest governance is a foundation on which long-term SFM rests. In 2014, more than 190 governments, corporations, non-governmental and indigenous peoples' organisations endorsed the New York Declaration on Forests (NYDF) which commits endorsers to ten goals, the last of them (Goal 10) focused on good forest governance. But in the most recent NYDF assessment report, the conclusion was that, notwithstanding some gains in transparency, community empowerment and demand-side measures to address illegal logging, improvements in forest governance remain too slow to have a measurable impact on reducing deforestation (Conway et al., 2018). So, while it is obviously useful to have an enabling environment for SFM by IPLC, the question is: how might this work in practice?

Forest governance has traditionally worked by dividing forest into different use categories, from protected forest areas at one extreme, through production forests (sometimes with specific provision for communities) to conversion forests at the other extreme – with lists of what can or cannot be done in each category and some form of forest law enforcement. Recent experimentalism in forest governance has involved two main 'market based' approaches over the last decade (at least in so far as the allocation of international finance):

AS COMMUNITIES BECOME FAMILIAR WITH LEGALITY ASSURANCE, SUCH SYSTEMS HELP RECOGNISE SFM BY COMMUNITY GROUPS

(i) [The market carrot] Attempts to monetise and thereby incentivise sustainability by developing market PES (such as carbon sequestration) within programmes such as Reducing Emissions from Deforestation and Degradation (REDD+). Decadal reviews of such programmes lament the tardy development of a functional carbon market and find a general lack of engagement with forest communities and a range of often disruptive impacts on their livelihoods in designing REDD+ interventions (see Bayrak and Marafa, 2016). We note some opportunities, however, in the emerging options for paying for participatory mapping [Section 3.1], paying for certification costs [Section 4.1], or channelling money for forest restoration more directly through new information technology [Section 4.3]);

(ii) [The market stick] attempts to negotiate and enforce sustainability through legality assurance systems. Decadal reviews of such legality assurance programmes note that the negotiation process enables multiple actors to highlight real challenges to SFM. Such processes can also increase the capacity of those actors to hold governments to account in trying to tackle them (see Overdevest and Zeitlin, 2017). While we assess the former governance options largely in Section 4.1, we treat the resultant Timber Legality Assurance Schemes (TLAS) here.

TLAS have recently emerged in response to concerns in major markets over the purchase of products originating from illegal logging – such as the USA (i.e. the Lacey Act of 2007), the EU (i.e. the EU Timber Regulation [EUTR] of 2010) and Australia (i.e. the Illegal Logging Prohibition Act [ILPA] of 2012). Illegal logging covers a wide range of potential legal infractions, from the illegal allocation or occupation of forest land, the illegal conversion of forest land to other land uses, to the illegal extraction and trade of particular species, volumes or dimensions of timber (Kleinschmit et al., 2016). Support from the European FLEGT Action Plan has financed multi-actor participation to develop new Voluntary Partnership Agreements (VPAs) within which legality is clarified and negotiated – and legality assurance systems designed.

Questions have been raised over whether the emphasis on TLAS is another development

'fad' like certification or REDD+ (see Rutt et al., 2018; Fletcher et al., 2016) and whether it merely exacerbates inequalities through the complexities of compliance for community forests (Wiersum et al., 2013; Setyowati and McDermott, 2016). Troublingly, more than 15 years since the launch of such market-based systems, only Indonesia has a functioning system of TLAS known locally as Sitem Verifikasi Legalitas Kayu (SVLK). Several other countries have systems under development. Box 5 describes the nature of legality assurance in Indonesia and its impacts on community forestry.

While legality does not necessarily mean sustainability, the aim of most legality systems is to promote SFM, and the SVLK system is no exception. As these systems develop and communities become familiar with the requirements and practice of legality assurance, such systems could help recognise and spread SFM by community groups. After all, in many countries where good forest governance exists it is the legal requirements to replant after felling, adopt specific management practices, and to maintain particular types of environmental value, that drives SFM by both communities and commercial actors. So, there is no reason a priori to discard the necessary process of improved governance that is certainly brought into focus by VPAs and TLAS, and this could potentially help community forestry access markets.

Perhaps the central focus of TLAS aimed at SFM within community forestry ought to be the simplification of administrative requirements needed to assert claims for commercial forest use. It is frequently the case that the sheer number of administrative steps that IPLCs have to go through to operate legally is prohibitive, both in terms of cost and time. For example, in Cameroon, longstanding community forest legislation remains almost inoperable because of the disproportionate costs and time that are incurred to operate legally compared with informal chainsaw lumbering – a reality also in the Democratic Republic of Congo (Lescuyer et al., 2016; 2019; Mbile and Macqueen, 2019).
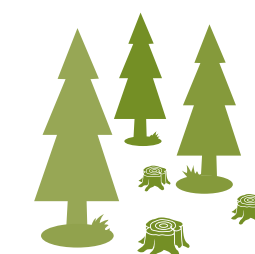
3.2.2 EXPERIENCE AND CHALLENGES OF USING LEGALITY ASSURANCE TO SPREAD SFM BY IPLCS

Those involved in the development of the SVLK system in Indonesia see its potential to tackle corruption and illegality if accompanied by independent third-party monitoring (Obidzinski and Kusters, 2015). However, recent reviews of the actual practice of involving smallholders in SVLK compliance for blockboard and plywood value chains discovered a series of operational complexities, and that no distinction was made at this final production stage between SVLK-compliant and non-compliant wood (i.e. none was fully SVLK-compliant despite claims to that effect) (Susilawati et al., 2019). While SVLK could potentially link community forest or smallholder groups directly with exporters (and thereby cut costs), in reality there was strong resistance from the National Association of Small Furniture and Handicraft Manufacturers (AMKRI) due to the higher relative cost implications for small producers (Maryudi and Myers, 2018) and this led for a time to SVLK concession that, for SMEs only, a self-declaration alone (Deklarasi Ekspor/ DE) was needed to meet full legal requirements.

What have emerged from these tense exchanges between representative associations of SMEs and government are formal community forest support programmes to cover the costs of 'legality certification' for smaller players (see Box 5). There are regular complaints that VPA processes impose disproportionate costs on smallholders (Obidzinski et al., 2014), but also some evidence that VPA processes encourage smallholder enterprises to organise and, in some cases achieve, improved policy support (see Cerutti et al., 2020). While not yet meeting the full demand for costs relating to legality certification, such support programmes have encouraged many community groups to opt for legality certification, such as SVLK (which includes requirements for sustainability), even more than for the much higher market recognition of schemes such as FSC (Wibono et al., 2018).

Bar code applied to FSC certified PT. Masterwood's wood products in Tangerang, Banten. © WWF-Indonesia / Rizal Bukhari

BOX 5. THE SVLK LEGALITY ASSURANCE SYSTEM IN INDONESIA, SUBSIDY SUPPORT SCHEME, COMPETITORS, AND POTENTIAL TO IMPROVE RECOGNITION AND SPREAD OF SFM BY IPLC

The Sitem Verifikasi Legalitas Kayu (SVLK) came into force in November 2016 as the first operational Timber Legality Assurance System (TLAS). SVLK was built through multi-stakeholder national consensus as part of the Voluntary Partnership Agreement (VPA) with the European Union Forest Law Enforcement, Governance and Trade (EU FLEGT) Action Plan. Under Indonesian law, SVLK certificates and export licences, called V-Legal documents, constitute proof of legality for timber exported to Europe. But SVLK also requires SFM in that its mandatory application for logging concessions involves compliance with the Sustainable Production Forest Management (PHPL) certification scheme – and it is also mandatory through the PHPL group scheme for any community forest groups needing SVLK status for export.

In recognition of the disproportionately high audit costs for communities and smallholders, the government, through the Ministry of Forests (MoFor), has set up budgetary mechanisms to pay the first costs of certification and surveillance (re-auditing) and provide necessary Supplier Conformity Declarations (DKP) for smallholder and group certification. Unfortunately, funds have not been sufficient to cover all SVLK needs, nor do they cover the prior costs of legal land ownership registration, registering a formal farmers' group, administrative and transport documents, and training for the SVLK system. Regional governments could allocate costs for the latter items but would have to do so in local budgets for which there are more appealing voter priorities (Nurrochmat et al., 2016). So, the SVLK subsidy scheme for community forest groups exists, but needs further development.

Two sets of competition exist to SVLK (and its PHPL certification scheme). First there are competing international certification schemes for SFM such as the Forest Stewardship Council (FSC), the Indonesian Forestry Certification Cooperation (IFCC) belonging to the

Programme for the Endorsement of Certification Schemes (PEFC), and the Indonesian EcoLabelling Institute (LEI) – all offering group certification to reduce community costs – and many subsidised through NGO programmes. Each offers advantage in certain markets. Of these international schemes, while FSC is widely regarded as the best system for improving business practice, operators generally prefer to be certified under the SVLK scheme due to its mandatory nature for EU exports, and the more substantial subsidy programme in place for community groups (Wibono et al., 2018).

Another set of competition for SVLK (and its PHPL certification scheme for private logging concessions) comes from the existing national legal documents that are required by Indonesia's Forestry Law 41 – such as the SKAU (document recognising community forest origin of timber), SKSKB (document recognising state forest origin) and FAKO (document recognising processed origin). With many community forest groups having only national markets in view, the SKAU documentation is preferred. In addition to the cost disadvantages of SVLK, many smallholders only grow and sell timber as a secondary 'cash-fund' and do not wish to be tied to a group where the timing of timber sale is more prescribed. An answer lies in farmer cooperatives with cash funds that can buy immature trees from famers to sell at a later date when the trees mature, while meeting the immediate cash needs of the farmer. More investment is needed, however, to spread the knowledge and practice of such savings and loan practices.

In summary, legality schemes such as SVLK stand to benefit community groups most when they drive smallholder support programmes and the coalescence of smallholder groups into functional associations or cooperatives. But more concerted effort and finance is needed to upscale that potential.

THE INTRODUCTION OF TIMBER LEGALITY ASSURANCE HAS CREATED A GREATER RATE OF COMMUNITY FOREST AND SMALLHOLDER FOREST GROUP FORMATION

Another effect of the introduction of mandatory timber legality assurance in Indonesia has been a much greater rate of community forest and smallholder forest group formation (e.g. timber grower cooperatives) to reduce the costs of legal compliance while also offering other market benefits. Some of these community forest groups have begun to develop rotating loan funds from which transactions can be offered to farmers in need as a way of discouraging premature 'out-of-farmer-necessity' tree felling that would otherwise invalidate SFM systems (Nurrochmat et al., 2016).

A less encouraging consequence of the introduction of legality assurance schemes is that the disproportionately high costs for smaller players, if unresolved by government, can consolidate market power in the hands of larger industrial players. So, in Indonesia, for example, the tighter legality assurance measures are documented to have resulted in the rental of V-legal licences to smaller groups with more occasional export transactions – which obviously puts those groups at a price disadvantage (Maryudi and Myers, 2018). Similarly, in the Congo Basin, community groups in general lack the technical and financial resources even to initiate the registration process, let alone implement a TLAS. While in some countries, such as Cameroon, initiatives have been put in place to support communities in meeting these costs – for example the SAILD legality and traceability support system for the timber from community forests (Fomou et al., 2017) – such external support tends to be time-bound and insufficient to support all cases.

LEGALITY ASSURANCE, ESPECIALLY IN THE CASE OF PRIVATE SMALLHOLDERS, CAN REDUCE THE COSTS OF LEGAL REGISTRATION

3.2.3 PRACTICAL POTENTIAL AND SYNERGIES

As noted in the introduction to this section, good forest governance is widely acknowledged to be critical for the recognition and spread of SFM by IPLCs. When narrowly construed, the introduction of legality assurance schemes introduces disproportionately high compliance costs for community forest groups (whether applied to indigenous territories, community forests, private smallholders, or small processors). These have the same effect as sustainability certification in marginalising smaller players – to the advantage of large companies. If viewed as part of a broader 'good forest governance' package, however, legality assurance schemes can catalyse three

positive developments from the perspective of recognising and spreading SFM by IPLCs.

First, in the process of negotiating legality definitions within processes such as those linked to the EU FLEGT Action Plan, rights can be brought to the fore (including formal recognition of community forest tenure of different types). In other words, the process opens space to contest what types of management system, including customary ones, are appropriated into the legal framework. This presents an opportunity to map and fight for community forest tenure – and indeed to help shape targets for the transfer of forest land rights back to the communities where they have been historically appropriated by the state (e.g. the 12.7 million hectares destined for transfer back to forest communities in Indonesia under Jakowi's government – see Astuti et al., 2019).

Second, formal processes of legality assurance can catalyse the development of specific funding for the legal registration of community forest groups – as in the case of Indonesia's SVLK subsidy programme. The challenge is that, in many countries, the resources for developing such legal registration funds are not available and national land cadastres are often poorly managed, often in non-digital formats, with many overlapping claims even post registration. So there is a twofold need, both to subsidise the registration process, and to invest in improvements to digital land cadastres that can resolve future disputes. Since legal tenure and registration are key elements of SFM, and the legality assurance schemes themselves are usually designed to promote SFM, these community forest funding mechanisms (CFFMs) could be an excellent catalyst for the greater recognition and spread of SFM by IPLCs.

Third, formal processes of legality assurance, especially in the case of private smallholders, can drive association in order to reduce the costs of legal registration. This prompt towards collective action can have significant additional business advantages that can improve prospects for spreading SFM within such groups. In Java, for example, the area of private smallholder forests (locally known as Hutan Rakyat) increased from 1.9 million hectares in 1993 to 2.7 million hectares in 2009 and generated income in excess of US$360 million (Royo and Wells, 2012). This was primarily a response to high timber demand plus falling supply from natural forest concessions, but the legality assurance process has helped to consolidate and formalise some of these actors.

3.3 FINANCIAL AGENCY – OPTIONS EMERGING THROUGH REGISTRIES OF TREE-BASED COLLATERAL OR LOAN CONDITIONALITIES

3.3.1 HOW MIGHT FINANCIAL AGENCY HELP RECOGNITION AND SPREAD OF IPLC SFM

A Semerantihan community gathering in Tebo District, Jambi Province, Sumatra, Indonesia. © Neil Ever Osborne / WWF-US

FINANCE INSTITUTIONS CURRENTLY ONLY MEET AN ESTIMATED US$50 BILLION OF THE MORE THAN US$200 BILLION SMALLHOLDER FINANCE NEEDS

Inaccessible finance is often listed as a malady afflicting community forestry (Molnar et al., 2007; Donovan et al., 2006; Kozak, 2007; Gilmour, 2016b; Badini et al., 2018), yet it has been sometimes rated less the disease and more the symptom of other more fundamental problems (Arnold et al., 1987). Those more fundamental problems include a poor value proposition, informality, and the lack of financial or managerial competence. Perhaps a better way to put it is that there is an overabundance of bad finance parcelled up in large investment lots that is seeking quick returns through industrial-scale investments with minimal transaction costs that directly compete with community forestry land use or foster elite capture within it. For this reason, recent overviews of access to finance for forest and farm producer organisations (FFPOs) have talked of the need to upscale more appropriate

finance through a two-way dialogue or 'dance' between community organisations and financial service providers (Macqueen et al., 2018a). Good guides exist as to how to improve the relationship between community organisation and potential investor (Elson, 2012). Both stand to gain from tightening up the terms on which a financial offer can be made. But there is no avoiding the fact that finance institutions currently only meet an estimated US$50 billion of the more than US$200 billion smallholder finance needs across sub-Saharan Africa, Latin America, and South and Southeast Asia (Dalberg, 2016).

In a series of 11 international dialogues on investing in locally controlled forestry (see Macqueen et al., 2012), it was broadly agreed that enabling investments (i.e. grant funding that does not expect a financial return) are

THE CREATION OF FINANCIAL LITERACY IN PRODUCER ORGANISATIONS, SPANNING MORE THAN 30 VALUE CHAINS WAS INSTRUMENTAL TO SUCCESS

MANY REPORTS MAP ALTERNATIVE DELIVERY CHANNELS TO REACH SPECIFIC UNDERSERVED CLIENT CATEGORIES

invariably a prerequisite to help smallholders and community forest groups develop the financial literacy they would require to attract asset investment (i.e. debt funding that does expect a financial return). One outcome of that dialogue series was the establishment of the Forest and Farm Facility (FFF), whose early success is in part attributable to the direct enabling investments made to community forest groups (rather than through intermediary organisations), backed by training in organisational management, business and finance, risk management and business incubation (FAO, 2018). The creation of financial literacy in producer organisations, spanning more than 30 value chains (involving both forest and farm products), was instrumental to that success. It should be noted that forest-dependent communities are usually farmers (with some rare hunter-gatherer exceptions), and that financial and business literacy is quickly applied to both forest-related and agricultural value chains.

Now it is undoubtedly true that limited financial track records for community organisations increase perceptions of risk and thereby lower the credit rating of community organisations or increase the cost of credit. Membership of local credit unions (e.g. village savings and loan associations – VSLAs) increases access and improves financial terms (Angelini et al., 1998). With potential immediate savings of US$116 billion per year for

the two billion currently unbanked people (Allan et al., 2016) – there is no shortage of effort to reach such groups. Many reports map alternative delivery channels to reach specific underserved client categories with financial instruments (savings, loans, insurance, guarantees, remittances, etc), such as for rural community groups overall, youth and women (see for example: Pagura, 2004; IFC, 2014; Abrams et al., 2016; Rita, 23 January 2018). Engaging national banks to develop products specific to community forest groups can prove rewarding. However, this is an approach that arguably works best for smallholder farmer groups planting trees (where returns can be guaranteed by mixes of annual intercrops) rather than for communities in the forest core and edge working to generate income from standing forests – although there are many exceptions in the NTFP business sectors. Nevertheless, for more remote communities in the forest core or edge (see Table 2), it is much more important to develop internal investment funds from products sold, and then approach buyers for co-finance where they might have a vested interest in securing supply.

Recent experiences in trying to improve access to finance indicate that it is important to stress to IPLCs the multiple sources of finance that can be accessed once their own financial track record has been strengthened (Macqueen et al., 2018b). Figure 2 below demonstrates the various types of financial institution or source from which IPLCs can access finance, but with a particular emphasis initially on: (1) producer and friend finance; and (2) buyers and trade finance.

A manager inspects wood to be shipped at the FSC-certified Agroindustrial Victoria sawmill in Iñapari, Peru. © WWF / Dado Galdieri

SEMI-FORMAL FINANCE

Asset investments through:
Microfinance / moneylenders / crowd-finance

FORMAL BANKING FINANCE

Asset investments through:
Blended finance / loans / equity / bonds / overdrafts

3

4

3/4

PRODUCER & FRIEND FINANCE

1

COMMUNITY ORGANISATION

2

BUYERS & TRADE FINANCE

• **Trade credit**
• **Leasing**
• **Factoring**
• **Warehouse receipts**

5/6

5

6

NATIONAL PUBLIC FINANCE

Enabling investment / grants for:
Tenure and technical, business, organisational support

CLIMATE & ODA FINANCE

Concessional loans, grants and guarantee funds for:
NDC, NAP climate action / SDGs / risk management

Figure 2. Sources of finance for IPLCs and their organisations
Source: Macqueen et al., 2019

As financial competence and track record grow, the possibilities of (3) micro-finance or (4) formal bank finance increase. And of course, at any stage, organised groups can attract support from (5) national public finance or (6) climate and ODA finance where these are available. Box 6 describes some recent innovations by Equity Bank in Kenya to spread sustainable forest management through the integration of trees on farm.

Kenyan tree growers belonging to Farm Forest Smallholder Producer Association of Kenya (FFSPAK) © Duncan Macqueen
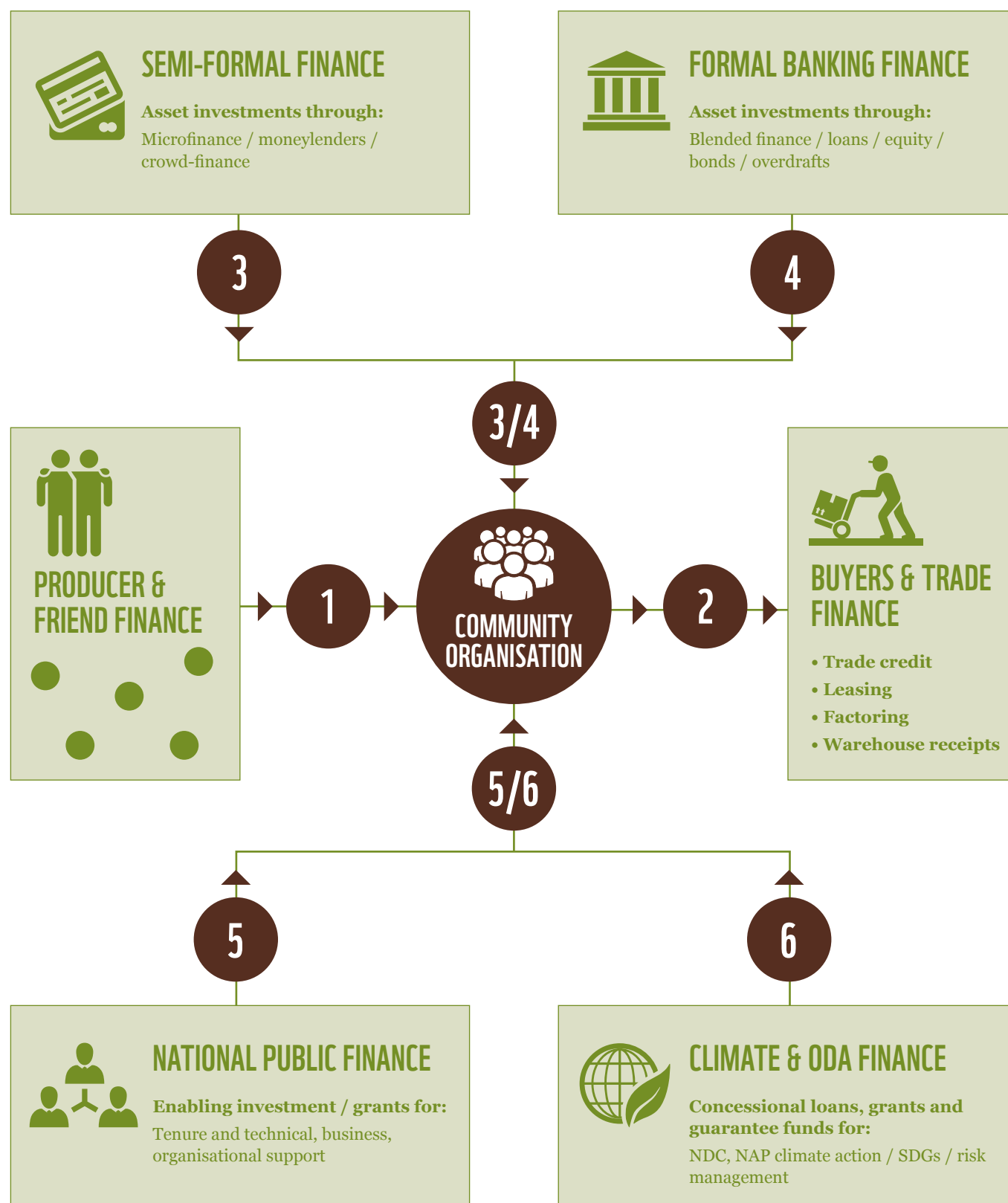
BOX 6. WORKING WITH EQUITY BANK IN KENYA TO IMPROVE THE OFFER OF FINANCE TO SMALLHOLDER FARMERS WHO WISH TO ENGAGE IN ON-FARM TREE PLANTING

Equity Bank's key purpose is to financially empower and elevate communities at grassroots level throughout Africa. Equity Bank was founded as Equity Building Society (EBS) in October 1984 and was originally a provider of mortgage financing for the majority of customers who fell into the low-income population. The society's logo, a modest house with a brown roof, resonates with its target market and their determination to make small but steady gains toward a better life, seeking security and advancement of their dreams. The bank has a particular vision to improve access to finance for the vast majority of Africans who have historically been excluded. Although declared technically insolvent in 1993, Equity's transformation into a rapidly growing microfinance and then a commercial bank is widely considered to be an inspirational success story. Currently, Equity Bank has more than nine million customers making it the largest bank in terms of customer base in Africa and having nearly half of bank accounts in Kenya. The company's vision is "to be the champion of the socio-economic prosperity of the people of Africa".

One important innovation was that, in 2010, Equity Bank established the Equity Group Foundation. Equity Group Foundation makes social investments towards the socio-economic transformation of the people of Africa through six cluster thematic areas: education and leadership development; financial literacy and access; entrepreneurship; agriculture; health; innovations and environment. By investing in such areas with local smallholder farmers, equity bank has been able to greatly improve the appreciation of the opportunity and challenges of taking and repaying bank loans. Equity Bank provides the infrastructure of delivery for the Foundation, hence

reducing its operational costs and increasing the rate of return on any social investment.

Through its Foundation and the Bank's engagements with smallholders and more structured Forest and Farm Producer Organisations (FFPOs), Equity Bank has realised that farms benefit from a wide range of tree planting options – including for timber, firewood, fruit, fodder, windbreaks, soil fertility maintenance and so on. Fruit trees have historically been a particularly lucrative option (e.g. mangos and macadamia nuts), but the supply deficit for construction timber and poles is now motivating widespread timber tree woodlots. Equity Bank is aware that such trees must make a profit if the smallholders are to invest in their establishment and management – but often the profits come after ten years or more due to the long production cycle for trees.

With that opportunity in mind, Equity Bank has been developing a range of products to assist farmers who want to grow trees. Financial literacy training has enabled smallholders and FFPOs to assess likely returns and cash flow projections. New loan products have been developed for smallholders that accommodate both tree components and quick return cash crops that can guarantee loan repayments as the trees mature. Financing has been rolled out to tree nurseries to improve the diversity of planting stock across a range of planting aims (from timber trees to pure ornamentals). Loan products have been developed for livestock that include the establishment of fodder banks to improve feed and hence yields and so on. The main lesson is that many creative options, including for the more sustainable management of existing forest resources, can be developed through a direct engagement with smallholders.

Despite efforts to work with local banks, there is often still a huge finance gap, in that more than 90% of smallholder producers globally do not have access to formal financial services and commercial debt (Dalberg Global

Development Advisors, 2016). To address that issue, new efforts to merge solutions to this finance gap with solutions to forest conservation efforts seem to offer some promise – see Box 7.

Kenyan tree nursery producer belonging to the Community Tree Nurseries Growers Association of Kenya (CTNGAK) © Duncan Macqueen

BOX 7. GREENFI SCALING UP COMMUNITY ECO-CREDIT SYSTEMS IN AFRICA THAT COULD POTENTIALLY HELP RECOGNISE AND SPREAD SFM BY IPLC

GreenFi Systems Limited is an Irish fintech start-up, based on an approach developed by the GreenFi team members which won the UN prize for climate change finance innovation. GreenFi is dedicated to tackling the issue that more than 90% of forest and farm producers globally cannot access commercial loans. GreenFi hopes to scale up a community eco-credit movement using a mobile-money integrated management information system.

Eco-credit is credit that is conditional on borrowers restoring defined environmental resources (that can include SFM or on-farm tree planting). The system ensures that environmental values are contractually linked to the financial value associated with loans. Community eco-credit is a term applied specifically to community-managed revolving credit facilities (such as a village savings and loan association – VSLA) in which members need financial services to increase productivity and build climate resilience while participating in environmental restoration activities which enhance ecosystem productivity and climate resilience.

Community eco-credit groups generally lack a transparent and robust system for the tracking of loans and environmental improvements together. This lack of financial and environmental monitoring and track record limits their credit ratings and access to loans. By putting in place a management information system which allows community eco-credit groups to robustly and transparently track loan disbursement and repayment, plus environmental compliance and environmental restoration, GreenFi is laying the foundation for the massive upscaling of eco-credit groups.

GreenFi provides an IT savings and loans tracking tool designed for smartphones and tablets, together with photo and GIS-based environmental tracking interfaces appropriate to the capacities of groups who use its tools. It also provides eco-credit fund set-up training materials. But it does not charge communities for those services. Instead it works with those wishing to channel finance towards sustainable resource management and environmental restoration (e.g. company clients, NGOs and aid agencies such as, potentially, the Global Climate Fund). By charging these organisations for the training and support provided, it provides global environmental finance a way to capitalise on communities revolving credit facilities to achieve environmental aims, such as SFM.

GreenFi tools are used to set up community eco-credit groups that define their restoration or sustainable management objectives (for example in forest communities) and establish revolving loan facilities. Groups record loans on the GreenFI smartphone app (or on paper) and can take photos to demonstrate remotely their environmental compliance. Over time the eco-credit grows and communities prosper as they grow their natural, financial and social capital.

GreenFi's operations in Kenya currently involve a close partnership with the IUCN East Africa office, Mwambao Coastal Community Network and Fauna Flora International in tool development, with a further five organisations likely to deploy the approach and tools in the near future. It has also developed a pilot marine eco-credit group in Pemba, Tanzania – and have graduated from Climate KIC's Accelerator Programme in Ireland.

Source: GreenFi, 2019
🔗 http://greenfi.org/

A further challenge for community forest projects is that many communities are only granted rights once forests have been logged by commercial operators. In such circumstances, community forestry must invariably fund 'forest restoration' either through natural regeneration (with opportunity costs only) or through replanting (direct planting costs). Private companies wishing to invest in this space have to marshal patient capital that is willing to live with acceptable returns but over extended time periods – and in competition with higher and more immediate internal rates of return (IRR) – see Box 8.

Community forestry pine nursery © Duncan Macqueen

BOX 8. EJIDO VERDE AS A MEXICAN EXAMPLE OF A SOCIAL INVESTOR TRYING TO MATCH CONSERVATION-RELATED IMPACT INVESTMENT WITH COMMUNITY FORESTRY PRACTICE

Ejido Verde is the newest addition to Pinosa Group, Mexico's largest pine chemicals company. With a 90-year legacy as a family-owned business, Pinosa Group represents 50% of the Mexican pine resin market. The pine chemical industry serves a growing 10 billion USD global market, in which Mexico is in the top five producers of oleoresin (after China, Brazil, Indonesia and Vietnam). Mexico's production potential is expanding as the leading producer, China, has suffered from increasing labour costs, overly aggressive pine tree tapping and deforestation leaving it a net importer.

Mexico had also experienced the effects of deforestation in a dramatic loss of annual production, so the Pinosa Group launched Ejido Verde in 2009 based around a more sustainable experimental social reforestation initiative, formalised as a business in 2016. As a strong social and environmental mission-driven company, Ejido Verde uses a regenerative agroforestry model that restores patches of degraded lands with high-quality pine resin producing forest stands resulting in a mixed forest landscape mosaic. It establishes investment agreements with land-owning rural and indigenous communities as well as private smallholder property owners with the primary purpose of tapping trees for pine resin.

The four pillars of Ejido Verde's business model include: (1) community building around strong reciprocal arrangements with the company; (2) zero-interest community lending for quality seedlings, technical assistance and forest restoration and monitoring labour; (3) commercial agroforestry plantation design that maximises pine resin yields while conserving soils and biodiversity; and (4) guaranteed demand in purchase contracts that are for 30 years with fair market pricing and 12% commission.

The model works, but a key challenge for Ejido Verde is to attract the capital for expansion. But with a 20-year return period, how do companies such as Ejido Verde attract the capital for such long-term investments? The answer lies in some innovative financing approaches. First, Ejido Verde

have managed to engage and secure investment from pine resin buyers with more than US$10 million committed to date. Such businesses understand the market and want to capture long-term market share – and have been the anchor investors. Second, Ejido Verde have managed to secure a concessional loan from the InterAmerican Development Bank with an extended grace period – but backed by an industry guarantee secured against the companies' pine resin inventory. Third, they have secured almost US$0.5 million in crowdfunding with zero interest loans over ten years from 10,000 individuals in 78 countries. Finally, they have attracted a state subsidy for the social and environmental nature of their work. The perception at Ejido Verde is that there is plenty of capital searching for social and environmental impacts – but at an acceptable financial risk / return ratio. The challenge has been to match the specific nature of their project to the specific tolerances of those with capital to invest. That flexible, decentralised, brokering or matching function is what is needed to make conservation-related impact investment work.

A further challenge is to convince community implementers to take a longer view. For example, the need to persuade communities and individuals with land parcels within it to plant pine agroforestry at an internal rate of return (IRR) of 25-30% over 20 years rather than alternative crops. Within Michoacan, Mexico, the centre of Ejido Verde's operations, the main competitor crop is avocado which offers an IRR of a reported 40-90% over 7 years. Although the outcome seems a forgone conclusion, there is a formidable appetite for planting pine, especially among the elderly who are leaving a pine resin tapping inheritance for their children. These individuals prefer pine so as not to resort to environmental degradation from chemical heavy inputs and excessive water consumption for avocados or face the money-laundering pressures that quick profits attract from narcotraffickers.

Source: Ejido Verde, 2019
🔗 www.ejidoverde.com

Marshalling the funds necessary for such restoration is a real challenge. It has been estimated (on admittedly flimsy data) that as much as US$300 to US$400 billion is needed each year to preserve and restore ecosystems, but that public conservation projects receive just US$52 billion (Credit Suisse, 2014). This logic asserts a 'conservation finance gap' that requires a move beyond donors towards an impact investor-driven approach. Some consultants suggest that impact investment could close half that gap by profitably funding sustainable food, fuel and fibre enterprises or habitat and water conservation projects – but others note that can take decades to realise, verify, and capitalise on restoration or conservation benefits; only the most patient investors will wait that long. Key challenges include a lack of widely accepted standards for measuring conservation impacts of different sorts – or accounting for impacts on natural capital (defined as the components of the natural environment that can be used to generate income, goods or services – Barbier, 2012), a shortage of financial-management experience among conservation project developers, the high transaction costs of investing in small projects, and an abundance of early-stage project concepts that are too speculative to interest all but the most risk-tolerant investors (Davies et al., 2016). Partnership between the private sector, established environmental NGOs and donors prepared to offer guarantees for environmental outcomes are clearly vital for brokering better risk mitigating deals.

A critical gap in the investor approach is the lack of any guidance or certification system for conservation-related impact investment or natural capital accounting. At the moment there are a raft of 'green' 'ethical' and 'conservation' impact investment vehicles (NatureVest and EKO Asset Management Partners, 2014). Some use internal, proprietary standards. Others use industry-specific standards like the Verified Carbon Standard (VCS) or FSC/PEFC. Yet others are trying to develop emerging impact investing industry standards such as the Impact Reporting and Investment Standards (IRIS), which investors employ to report on the impact of their own portfolios – but there is little third-party scrutiny of such developments.

Given that two thirds of existing conservation-related impact investment is in food and fibre production (agriculture and forestry), criteria are needed for claims such as 'zero deforestation' or indeed 'increasing recognition

and spread of SFM by IPLCs – which we might call a forest+ investment'. Criteria are needed to differentiate in what categories of IPLCs such impacts might be felt (e.g. distinguishing between the conservation of biodiverse natural forests of Indigenous People or the collective smallholder plantations of fast-growing pulp trees). And who would credibly certify that particular impact investments had had particular impacts? By what criteria and indicators might a forest+ investment be judged? Surely if the individual management interventions of a firm deserve scrutiny through forest certification, the outlays of tens of billions of dollars from conservation-related impact investment deserve a little scrutiny. Indeed, tightening the indicators regarding what the conservation community might want to see from this kind of investment would also address the first major challenge of such investors – the lack of accepted standards for measuring conservation impacts. Such indicators would then help to screen what types of project have potential for delivering not only financial benefits, but also conservation outcomes.

3.3.2 EXPERIENCE AND CHALLENGES OF USING FINANCIAL AGENCY TO VERIFY IPLC SFM

To tackle the difficulty of getting finance to communities, innovative new systems have been designed involving conditional loan finance that might help to achieve two ends simultaneously (i) improving the financial track record and risk profile of individual farmers and thereby access to finance of recipients, through (ii) smartphone GIS-referenced photos of sustainable management practices that serve to improve confidence of the lender that the loan will be repaid, such as that provided by technology company, Sustainifi, which transforms evidence of environmental resilience into data which financial institutions can use to inform credit scores. A link could be made here with the preceding approaches of locally controlled forest integrity assessments (see Box 4). One such scheme by F3Life involves a practical toolkit whereby project developers wish to enhance SFM (F3Life, 2019). F3 Life provides its tools to commercial lenders, and has also spun out into a start-up – GreenFi – which operates out of East Africa and is described in Box 7 above.

Because in many country contexts governments only grant communities secure title to forest

Settler from Andean highland with Coca saplings (Erythroxylum coca) at his plantation on the lower Andean foothills. Madre de Dios, Peru © André Bärtschi / WWF

land when it has already been degraded through extractive logging concessions, community forestry often contends with the issue of how to finance forest restoration. Where there is market demand, companies have demonstrated some interest in working with communities to achieve such restoration. Both the companies and the community members involved in such restoration approaches have to contend with reasonable IRR, but long timeframes. For example, in the Ejido Verde example of Box 8, the Ejido Verde company, and the community members planting mixed pine agroforestry for future resin tapping, had to put in substantial cash up front with returns only 20 years down the line. Innovative financing strategies emerge under such circumstances, but they are always context specific – and the time-consuming role of matching abundant conservation-related impact investment capital with the specific risk and return profiles of multiple (and often half-baked) projects is rarely covered by such finance. As a result, and despite private sector interest, the hope that impact investment finance would step in to fill the conservation finance gap has proved somewhat illusory. Community forests, especially biodiverse natural ones, are rarely able to sustain a sufficient flow of revenue from one particular ecological element at large enough scale to meet investors' risk and return thresholds. Where they can, it is usually when most of the less valuable elements of biodiversity have been sacrificed to allow scale efficiencies within the productive system – or when some support initiative has pumped in significant enabling investment to organise, professionalise and aggregate product between groups.

The problem appears to be threefold. First there is a lack of a large enough pipeline of investment-ready community forest conservation proposals of the sort described for Ejido Verde above – with acceptable risk/return profiles.

Broadening this pipeline is very much the aim of recent programmes such as the Forest and Farm Facility (see Box 9) – which has shown great potential for upscaling but is often based around capital mobilised from within producer organisations rather than secured from without them. Second, there are too few financial intermediaries with the capability of matching impact investment capital to specific community forestry projects. Third, there is too little public accountability around social or environmental impact to force mainstream businesses to rethink what acceptable risk/return ratios might be and to engage with and develop long-term relationships with local community forestry businesses.

Addressing this third shortcoming (the lack of standard certified systems to assess the impact of conservation-related impact investment) could be a game-changer for community forestry. Reducing the gap between business performance metrics and business social and environmental impact metrics could help to squeeze investment into riskier portfolios in which economic returns are balanced by stronger social and environmental returns – with local control over those returns a firm part of the metrics (see Macqueen et al., 2018b). Alternatively, there is now also increasing momentum behind the potential benefits of 'natural capital accounting' (Ruijs and Vardon, 2018), although standardised mechanisms to account for business impacts on conservation or natural capital are still nascent. While there have been improvements to natural capital accounting oriented towards the informational needs of shareholders (whose concern might be to support a transition towards environmentally sustainable business models), there has been little progress in insisting on more regulatory reporting that accurately assesses impacts on conservation of natural capital as an end in itself (Barker, 2019).

New community-owned FSC-certified sawmill affiliated with the Viet Nam Famers Union supported by FFF © Duncan Macqueen

BOX 9. THE FOREST AND FARM FACILITY AS AN EXAMPLE OF AN ENABLING INVESTMENT PLATFORM THAT RECOGNISES AND BUILDS A PIPELINE OF SFM BUSINESSES

The Forest and Farm Facility (FFF) was established in 2012 as a partnership between FAO, IUCN, IIED and Agricord to deliver climate-resilient landscapes and improved livelihoods. FFF involves a multi-donor trust fund that channels finance directly to forest and farm producer groups to strengthen their organisations, political representation, businesses, climate resilience and social and cultural services. In addition to most of its disbursement directly through enabling investment grants – with strong gender guidelines, FFF also provides training in market analysis and development, risk management and business incubation – alongside peer-to-peer exchanges to spread best practice.

FFF emerged from a prior 'Growing Forest Partnerships' programme (also involving FAO, IUCN and IIED) that financed an 11-country dialogue series on 'Investing in Locally Controlled Forestry', bringing together investors with representatives of the International Family Forest Alliance (IFFA), the Global Alliance on Community Forestry (GACF) and the International Alliance of the Indigenous and Tribal Peoples of the Tropical Forests (IAITPTF) (the self-styled G3). The lessons from those interactions were incorporated into the design of FFF, including representation of the G3 as a majority grouping in the FFF steering committee.

In its first phase of operation (from 2012 to 2017), having expended about US$16 million in this period, the partnership exceeded all expectations as FFPOs themselves leveraged more than US$100 million in additional finance, pressed through 51 policy changes (including long-stalled handovers of forest land rights), and attracted 158 new financial investments in the 262 businesses which diversified or added value through FFF support. In FFF

Phase II, a new outcome on climate-resilient landscapes has been introduced which also seeks to measure the forest outcomes of these business interventions.

Key to the success of the FFF has been the direct financial investment in organisation building. At local level this has involved financing and training first-tier producer organisations to become bankable businesses. At the regional level, this has involved facilitating second-tier producer organisations (associations or cooperatives that link local groups). Finance and training have helped these aggregate product, add value through processing, improve marketing, and provide technical, business and financial services to members. At the national level, this has involved strengthening third-tier producer organisations (national federations or unions) to represent multiple producer interests with different government agencies and policy processes. And at regional or global level, FFF finances regional alliances of forest and farmer organisations to press home local agendas in global processes.

What has emerged is a pipeline of investable businesses. But through its work on access to finance directly with producer organisations, it has become clear that the most useful finance often comes first from members' own funds, then from buyers who wish to secure their product, and only more rarely from mainstream banks, national subsidies, climate finance and ODA. Strong social and environmental agendas among such producer organisations lead them often to resist the loss of control that comes from commercial debt or equity finance – where profit is put above other values.

Source: FFF, 2019

Many see an opportunity for decisive action in the current rush towards corporate sustainability reporting (Kareiva et al., 2015) and zero deforestation pledges (Lambin et al., 2018). Yet, in a global survey of 449 publicly listed companies in the food, textile, and wood-products sectors, while 52% of companies used at least one sustainable-sourcing practice, these practices were found to be limited in scope - 71% relating to only one or a few input materials and 60.5% to only first-tier suppliers (Thorlakson et al., 2018). With specific regard to zero-deforestation pledges, these were deemed to be insufficient to achieve broader impact on their own due to leakage, lack of transparency and traceability, selective adoption and smallholder marginalisation (Lambin et al., 2018).

That financial agency might be used to encourage greater corporate disclosure and tighten internal natural capital accounting has become the aim of the CDP Forest Programme (formerly the Forest Footprint Disclosure Project – see Box 10). But the latest reports show that both corporate disclosure and transparency on the issue of deforestation from the largest brands are poor – with 70% of invited companies failing to report critical forest-related information requested by investor shareholders or purchasing organisations in 2018 (CDP, 2018).

Stocks of FSC certified timber at one of Sweden's largest finished wood suppliers. Stockholm, Sweden. © Edward Parker / WWF

Acacia plantation seen from above, Phu Loc district, Vietnam. © James Morgan / WWF

BOX10. DEVELOPING PROGRAMMES SUCH AS CLIMETRICS WITHIN CDP WORLDWIDE TO ENCOURAGE TIGHTER CORPORATE DISCLOSURE ON FOREST AND IPLC IMPACTS OF THEIR OPERATIONS

CDP Forest Programme (formerly the Forest Footprint Disclosure Project – and the Carbon Disclosure Project) is an international environmental impact non-profit organisation, founded in 2000 and headquartered in London. It provides a platform for companies and cities to report information on their climate, water and deforestation impacts. CDP uses investor concern to encourage better private sector practice and reporting. When CDP launched the concept of environmental disclosure in 2002, it had just 35 investors signing its request for climate information, and 245 companies responding. By July 2018, 650+ investors with US$87 trillion in assets had used CDP to request information on climate change, water security or forests. Some 6,300+ companies had responded to CDP's climate change, water security and forests questionnaires, representing over 55% of global market value.

Despite these advances, 70% of invited companies failed to report critical forest-related information in 2018. Of those that included forest-related issues in their risk assessments, the vast majority (92%) identified substantial risks. In terms of execution, almost 90% of downstream retailers and manufacturers were beginning to take action to address those risks, but only 28% of those closest to the forest – upstream suppliers – were taking any action. Actions that are taken rarely involve IPLCs.

Nevertheless, CDP is part of a number of initiatives that could be used to improve the recognition and spread of community forestry engagements that involve SFM. One of these, Climetrics, independently monitors all available funds in the finance universe. It was set up to enable investors to consider and compare the impact of their investments on climate change, with free-to-search ratings for thousands of funds. To date the impact assessment is rather generic. The scoring system is based on three quantitative layers of analysis: each fund's portfolio holdings, its investment policy, and the asset

manager's governance. A top Climetrics rating (4- or 5-leaf rating) indicates that, on average, the companies in a fund's portfolio are more carbon efficient, better at publicly disclosing and managing climate-related risks and opportunities, and more likely to use key technologies supporting the energy transition.

Could an initiative like Climetrics be developed to look at more specific forest-related impacts – including engagements with community forestry? More detailed information on actions to increase the recognition and spread of SFM by IPLCs – which we term forest+ investments – is urgently needed. For while 92% of companies that do integrate forests into their risk assessments, only 30% of the total go on to identify substantial deforestation risks, and the capacity to distinguish elements pertinent to community forestry is almost non-existent. Indeed, many of the companies in view are large multi-nationals with little interest in sourcing from IPLCs. More work is clearly needed to develop corporate accounting metrics that might include greater detail on the impact of investments on community forestry.

Additionally, CDP is part of the Climate Disclosure Standards Board (CDSB) whose aim is to offer companies a framework for reporting environmental information with the same rigour as financial information. Since CDSB's inception in 2007, CDP has been providing its global secretariat, leading the strategy delivery and managing the day-to-day work programme on behalf of the consortium of business and environment NGOs that make up the Board. There is ample scope to improve the granularity with which impacts on community forestry can be reported by companies – although the limited market links between such companies and community forestry probably diminish the utility of the approach.

Source: CDM, 2019

Yet beyond the focus on corporate disclosure and transparency around forest impacts, it is also worth exploring options to develop a certification scheme for large investment portfolios – that goes beyond voluntary disclosure for corporate investments, and assures investor shareholders of strict compliance with criteria and indicators of sustainable forestry – including engagements with community forestry. An example of this potential is given in Box 10 where CDP has engaged with Climetrics to screen investment funds for their broad impacts on climate change (CDP, 2019). At present, the degree of discrimination between funds seems to lack some detail, but with further engagement, an equivalent more detailed module for forest impacts might be possible.

3.3.3 PRACTICAL POTENTIAL AND SYNERGIES

As noted in the introduction to this section, poor access to finance is frequently mentioned as a constraint to the sustainability of community forest businesses, but it is often a symptom of more fundamental problems to do with a poor value proposition, informality, and the lack of financial or managerial competence. The fact that 70% of smallholder producers globally cannot access commercial debt suggests there is considerable need for innovative new finance mechanisms that build community groups' capacity to manage savings and loans facilities and develop a financial track record as they do so. Making such support conditional on smart-phone environmental performance monitoring for SFM is an idea that deserves major investment to upscale. In the preceding section (Section 3.2), additional options for supporting SFM by IPLCs included national subsidy systems for legal compliance of community forest businesses, and the general tendency for collective action by smallholders to facilitate such compliance. Innovative finance tools, such as those provided by F3Life and GreenFi, could readily be used by such subsidy programmes to reach and strengthen community forest groups in that legalisation process.

There is no shortage of finance looking for social and environmental impacts within acceptable risk/return ratios. What is in short

supply are capable financial intermediaries that can either create a pipeline of investible community forest projects, and/or can match the right community forest projects with the right impact investors (i.e. meeting the expectations of risk and return over particular timeframes). There are some examples of enabling investment programmes such as the FFF (Box 9), and some examples of companies or financial intermediaries who work to perform that tricky matching function, such as Ejido Verde (Box 8) or Earthworm (Box 16). But these types of institutions are thin on the ground and poorly financed. Increasing finance flows to and through such intermediaries – with a specific aim of strengthening the organisations and the associations between community forest groups – appears to be a good way of better recognising and spreading SFM by IPLCs.

At the global level, where the actions of several hundred investment funds oversee trillions of dollars of financial assets, mostly invested into a few thousand large corporations, the level of environmental scrutiny in general, and community forestry scrutiny in particular, seems unaccountably thin. Most reporting is voluntary, and most criteria and indicators of impact generic and vague. There is a lot of scope for developing better metrics for reporting in partnership with CDP, and indeed with a whole range of monitoring frameworks that are being established, such as LandScale (LandScale, 2020) and EcoAgriculture (Shames et al., 2017). These can tighten the pressure to report, perhaps through certifying investment funds against their expected forest impacts (as has been done at a generic level for climate impacts through Climetrics).

INCREASING FINANCE FLOWS TO AND THROUGH SUCH INTERMEDIARIES APPEARS TO BE A GOOD WAY OF BETTER RECOGNISING AND SPREADING SFM BY IPLCS

SECTION 4.
SUPPLY-CHAIN OPTIONS FOR RECOGNISING AND SPREADING SFM BY IPLCs

Fence posts. Quebracho Blanco (Aspidosperma sp.) and Quebracho Colorado (Schinopsis lorentzii) are two of the main trees in the dry Gran Chaco forest, Argentina and also valuable wood for the lumber industry © Jason Houston / WWF-US

4.1 COVERING HIGH COSTS OF EXISTING THIRD-PARTY CERTIFICATION FOR SFM BY IPLCS

4.1.1 HOW MIGHT COVERING THE HIGH COSTS OF THIRD-PARTY CERTIFICATION HELP RECOGNISE AND SPREAD IPLC SFM

Family eating lunch in the village of Nueva York in Peru.
© J.J. Huckin / WWF-US

PEFC INTRODUCED THEIR SMALLHOLDER GROUP CERTIFICATION SCHEME IN 2010

In response to the cost bias against third-party SFM certification of IPLCs that was described in Chapter 1, certification schemes such as PEFC and FSC have taken a series of steps to offer smallholders and community forestry groups certification (to share audit costs), simplified assessment processes (to reduce audit costs), and step-wise approaches (to spread audit costs) – all geared to reduce costs for smallholders, including community forestry operators (Santos, 2019). For example, PEFC introduced their smallholder group certification scheme in 2010 and have organised biannual field dialogues for smallholder group certification, the last two in Finland in 2017 and Germany in 2019. Meanwhile, FSC launched in 2004 new policies for Small or Low-Intensity Managed Forest (SLIMF); then the 2009 FSC standard for group entities in forest management groups; the 2011 smallholder support programme with its Small and Community Label Option (SCLO); the 2014 smallholder market strategy and forest certification standard for Indigenous Peoples

and traditional forest communities; the 2016 launch of the 'New approaches for smallholders and communities certification' programme and SCLO revision. Despite these efforts, challenges for communities in getting certified remain acute, especially where governance is so poor as to make legal registration almost impossible unaided (Lewin et al., 2019). Especially for smallholder tree growers, some commentators assert that the imposition of additional compliance and verification systems, such as forest certification, is inappropriate given that risk profile assessments demonstrate low risk (Flanagan et al., 2019). And there is also a lack of resources to help them move along that pathway within certification schemes and support NGOs.

Given the challenges of reducing the costs of certification for community forest groups, reasonable alternatives might be: (i) to shift the onus of payment onto the buyer – through some scheme that recognises the inherent social and environmental benefits of SFM by IPLCs and is

prepared to offer long-term stable contracts on better terms; or (ii) to offset the cost through linkage with PES, such as for carbon sequestration, or biodiversity conservation, or watershed management; or (iii) to shift the onus of payment of certification costs to the government in view of the social and environmental benefits of community forest certification.

SHIFTING THE COST OF CERTIFICATION ONTO THE BUYER IS A TACTIC OF THE FAIR TRADE MOVEMENT

Shifting the cost of certification onto the buyer has long been the tactic of the fair trade movement. That movement has two main approaches that include either: (i) product certification against product specific standards developed by the Fairtrade Labelling Organisations (FLO) that specify how a 'fair price' for that product will be set; or (ii) organisation's certification that provides assurance that all the products traded by that organisation fit with organisational Fairtrade standards developed by the World Fair Trade Organization (WFTO). From 2005 onwards a concerted effort was made to develop the first of these options, with a fair-trade product-specific standard developed for timber (see Box 11). Branding and labelling options predominantly rely on there being a market for these and a market study certainly showed strong interest in fair trade timber (Macqueen et al., 2008). However, the complexity and cost of administering dual certification audits was in part responsible for its downfall (FSC, 2015). As noted in Box 11, there are good reasons for revisiting this idea – but with far more concerted efforts to harmonise a single simplified audit process.

If a single forest commodity approach to fair trade labelling (e.g. timber) proves difficult, an alternative strategy might be to develop a 'fair trade community forest product trading organisation' – to act as an aggregator and marketing point for fair trade timber and other products. For wooden craft and even small furniture items there are already numerous WFTO member organisations set up such as Bio Fair Trade of Brazil, Asha Handicrafts of India, Berrocal of Peru, or COPADE of Spain. The problem with that idea is that community forest groups are frequently set up to market product locally or nationally and rarely international. When people have tried to establish trading organisations specifically for more substantial orders of timber or furniture – the ability to deliver quality and manage challenging logistics have proved difficult as evidenced by the continuing lack of new offers onto international markets (see Leonardi, 2018). There is such a diversity of types of timber and timber products (e.g. timber species for say flooring, or furniture designs), fragmentation of markets across multiple sectors, and changeability in consumer tastes for such products, that securing stable trading arrangements is challenging. This makes such approaches potentially less scalable for the future.

A second approach might be to try and offset some of the costs of certification for SFM with some form of PES. In terms of market share, forest carbon standards might be an obvious target, with the Verified Carbon Standard (VCS) dominating the field with 82% share in 2017 (Hamrick and Gallant, 2017). Areas of dual-certified FSC-VCS already exist and there are projections of the positive financial impacts of dual certification, particularly in tree planting or

Loggers hands on the stump of a recently felled Ayous tree, East province Cameroon
© Brent Stirton / Getty Images / WWF-UK

SFM ALSO
PRESERVES
A RANGE OF
ECOSYSTEM
SERVICES THAT
HAVE ESTIMATED
GLOBAL MARKET
VALUES IN 2020:

BIODIVERSITY
>US$280 BILLION

WATER
>US$31.5 BILLION

CARBON
>US$7 BILLION
(FSC, 2017)

restoration projects (see Brûlez et al., 2018). But as yet there are few published examples of benefits to IPLCs. The most common issuance of VCS was for REDD+ but there were also projects including tree planting, agro-forestry, and, importantly, SFM (often through the use of Reduced Impact Logging – RIL). In terms of IPLC preferences, recent choice experiments in the community concessions of the Mayan Biosphere reserve in Guatemala show that households would prefer contracts that focus on carbon storage (regular immediate payments) rather than sustainable timber harvesting (longer-term irregular payments), but also demand access to forests so individuals can participate in non-timber forest product harvesting and tourism that are critical in the area (Bocci et al., 2020).

In a recent USA assessment of whether smallholder projects could use carbon certification to offset the costs of FSC, the answer was tentatively yes, but only for landowners whose forests are at least 1,020 ha in size, and only if the carbon price is US$11.50 or higher (double the current price) (Zwick, 2019). Nonetheless, if the carbon prices rise this may become possible, depending also on the type of forests, and how much carbon emissions forest owners are able to avoid or sequester. Already 73% of VCS certified offsets are also certified by the Climate, Community, and Biodiversity (CCB) Standards (which certify those co-benefits rather than carbon). But while such joint certification products have often sold at higher prices, that had become less evident towards 2016 (Ibid.).

Carbon standards that focus in on developmental co-benefits include Gold Standard and Plan Vivo, which account for 4% and 2% of the market volume (Pra and Brotto, 2018). While there are buyers interested in these 'premium community forest' carbon projects, project developers note identical difficulties that small-scale carbon projects experience as small-scale certification projects as a result of their size (NEPCon, 2012). Yet, even if carbon standards might not offer an immediate way forward for covering the costs of certification – potentially larger markets for other forms of ecosystem services might be explored through the description of the FSC ForCES project in Box 12 (FSC, 2017).

A final strategy might be to develop a special 'audit fund' to cover the costs of community forest certification. This could be aligned with funding to ensure legal compliance for community groups linked to TLAS (as in the Indonesian case described in Section 3.2). Or it could form part of ODA or climate finance (e.g. part of REDD+ finance), justified on the grounds of the social and environmental benefits of community forestry.

However, a key consideration is that the markets into which IPLCs sell are rarely concerned about certified SFM – and much more concerned on issues such as quality, availability and price. So there may be need to focus instead on building local market awareness of sustainability issues and developing more locally tailored systems, such as participatory guarantee systems described in Section 4.2.

4.1.2 EXPERIENCE AND CHALLENGES OF COVERING THE HIGH COSTS OF THIRD-PARTY CERTIFICATION HELP RECOGNISE AND SPREAD IPLC SFM

An attempt to cover the costs of certification through linking community forest producers to the Fairtrade movement has already been tried (see Box 10). From 2005, IIED engaged a range of stakeholders to explore options for fair trade timber – but not initially contemplating dual FSC-Fairtrade certification – and keeping the option of moving either through a product-specific fair trade label with the Fairtrade Labelling Organisations (FLO) or a fair trade organisation standard with the World Fair Trade Organization (WFTO) (Macqueen et al., 2006). In 2005, the FSC council passed a motion in favour of an FSC-Fairtrade dual certification pilot – explored further by WWF (Vallejo and Hauselmann, 2006). The IIED and WWF initiatives converged through an International Cocoa Organization (ICCO)-funded market survey which showed strong demand for a mechanism that could distinguish community forest products in the market (Macqueen et al., 2008). This in turn led to a series of dual-certified FSC-Fairtrade pilots (Leonardi, 2018). Box 11 provides more details of those pilots which deserve reinvestment in a more simplified audit procedure.

Turning now to experiences of offsetting the cost of certification through the assessment, management and sale of ecosystem services, it was found that stakeholder interest and capability was high for biodiversity conservation, carbon storage, and provision of non-timber forest products (NTFPs), medium for watershed protection services, and low for ecotourism and agricultural products (Jaung et al., 2016). It is clearly costly for community forestry groups to get certified – and if they are only remunerated for the sale of timber or NTFPs, certification may not seem viable. But their SFM also preserves a range of ecosystem services that have significant estimated global market values in 2020, not least biodiversity (>US$280 billion), water (>US$31.5 billion), carbon (>US$7 billion) (FSC, 2017). Box 12 describes a recent project to assess this potential.

Forest community in Bolivian rainforest. © Duncan Macqueen

BOX 11. FAIRTRADE TIMBER PILOTS TO COVER CERTIFICATION COSTS SO AS TO IMPROVE RECOGNITION AND SPREAD OF SFM BY IPLC

In 2009, in the wake of analyses of the relatively higher per unit costs of smallholders pursuing FSC certification, the Fairtrade Labelling Organisation (FLO) developed a timber standard to complement the FSC Principles and Criteria with Fairtrade compliance criteria based on a gap analysis of the two normative frameworks. This standard was first used to certify a community forestry operation in Honduras, and small and low-intensity producer groups in Bolivia and Chile.

In early 2012, the first dual-certified furniture products, made by Bolivian smallholder producers, were showcased by the German furniture company Quadrato – with a range of tables, chairs and benches. Soon afterwards, Swedish floor company Kährs launched a flooring line sourced from smallholder producers in Chile with dual certification.

The pilots began to have social impacts and restore economic hope. For example, in the Curacautin Valley of Chile, depleted timber stocks recovered and on the initiative of SSC Forestry Group of Sweden, a new sawmill was built in Curacautin. Having both FSC and Fairtrade certification provided market access, fair pricing and the Fairtrade premium, which in turn provided additional funds to invest in social, economic and development projects, benefitting local farmers, workers in the forest and sawmills, as well as local communities.

But when the pilot testing closed in 2014 through lack of funding, over-dependence on a single buyer and changes to the Fairtrade process of evaluating and approving new product lines, caused the pilot to stall. Among the lessons learned was that the technical complexity and time to implement a dual certification pilot needed to be reduced. Further research was felt to be needed into how to develop a single streamlined auditing procedure, affordable to smallholders, how to set up a comprehensive community support mechanisms for smallholders to facilitate certification, business planning and marketing, and how to develop an integrated market approach that stimulates market interest and demand by engaging directly with companies, designers and architects.

In the wake of that collapse, the only remaining fair trade timber products are those sold by the 400+ members of the World Fair Trade Organisation (WFTO) spread across 76 countries. This alternative fair-trade approach certifies social businesses that adopt fair-trade practices for all products sold rather than specific product lines. To date, the WFTO has focused primarily on craft – rather than timber or processed domestic furniture. But it might be worth exploring whether a social business in the latter sector might be established to offer markets to the increasing numbers of community forest groups – including associations of smallholder timber growers and processing clusters.

Mahogany tree seedlings. Rondonia, Pimenta Bueno vicinity, Amazonas, Brazil. © Mark Edwards / WWF

BOX 12. THE FSC FORCES PROJECT AND ITS ATTEMPT TO EXPLORE HOW CERTIFICATION COSTS COULD BE MORE THAN OFFSET BY PAYMENTS FOR ECOSYSTEM SERVICES

The ForCES project began in 2011 (and ended in 2017) as a partnership between the FSC, the Center for International Forestry Research (CIFOR), the United Nations Environment Programme (UNEP) and national partners in Chile, Indonesia, Nepal and Vietnam. The project's aim was to pilot test expanded and enhanced global and national environmental standards applied to emerging markets for biodiversity conservation and ecosystem services as an initial step for upgrading of successful models of FSC certification. The project was to advance on the one hand the standards through which ecosystem services could be credibly measured and, on the other, verify viable business models for the marketing of those ecosystem services.

The idea was simple – standard certification criteria for sustainable forest management already cover assessments of all the functions of the forest: water supply, erosion control, recreation and even carbon. Ten pilot sites were to be selected and then activities undertaken to enhance ecosystem services, measure impacts and work to develop business models for payment for those services. In addition to global concerns over ecosystem degradation, and a growing market opportunity for selling ecosystem services, an important motivation for the project was to generate new revenue for communities and smallholder certificates to improve the recognition and spread of their vital efforts to protect forests.

Market research was conducted to assess the supply and demand of the major ecosystem services. This found that on the supply side, FSC certificate holders were most interested in systems that verified biodiversity conservation, carbon sequestration and watershed services (Bennet et al., 2016). They narrowly preferred forest product sales with additional ecosystem service benefits (compared with add-ons) and definitely preferred receiving a higher price

for products with ecosystem service claim – followed by moderate preference for direct payments for ecosystem service impacts. On the demand side, a global survey of buyers found 38% unconditionally interested in a system to verify ecosystem services and an additional 29% interested conditional on there being marginal transaction costs and market development (Peters-Stanley et al., 2015). But buyers were also most interested in biodiversity, carbon and water – providing good synergy with land holders.

Of note is the fact that demand research demonstrated 45% willingness to pay for FSC-verified claims on ecosystem services – with an average premium of 8% for biodiversity services and 6.8% for carbon services. But the same buyers were only willing to pay 0.5-2% extra for verified benefits to local communities. In other words, community forestry groups can more readily sell things of international market interest rather than more localised social and economic benefits. Both the market research and the pilot testing confirmed the theory that buyers want evidence of outcomes or impacts for their payments and vary in what they want. Finding the right balance between credible evidence and practicality for forest managers, including smallholders, is crucial.

FSC has now finalised four ecosystem service tools that include: (i) Measurement: A common methodology that FSC certificate holders can use to demonstrate the impact of their forest management activities on ecosystem services; (ii) Transparency: third-party audit procedures recorded in a publicly available Ecosystem Services Certification Document; (iii) Ecosystem Services Claims; and (iv) Adding value to saleable assets. Sellers and buyers of environmental assets (e.g. carbon credits) from FSC-certified forests will also be able to increase the value of these assets by adding information about other verified ecosystem services impacts (see FSC, 2018 for more details).

In particular market segments, progress is already advancing. For example, pioneering carbon finance specialists such as Althelia are already using carbon credits

to collateralise investment loans to allow the development of FSC-certified SFM by communities in, for example, Peru (see Box 13).

Aerial shot of the Amazon in the Loreto region of Peru. © Brent Stirton / Getty Images

BOX 13. ALTHELIA CLIMATE FUND'S INNOVATIVE INVESTMENT COLLATERALISED BY THE SALE OF CARBON CREDITS FOR FSC-CERTIFIED SFM, AGROFORESTRY AND PLANTATION IN THE UCAYALI REGION IN PERU

In September 2017, Althelia Climate Fund publicly announced its investment to finance the scaling up of a 120,000 ha community forest management and REDD+ initiative in the Peruvian Amazon. The project involved seven indigenous communities settled in the Ucayali region in Peru and belonging to two indigenous ethnic groups, Shipibo Conibo and Cacataibo. Poverty-driven extensive agriculture, land invasions and illegal forest harvesting are causing deforestation in the region. The goal was to avoid deforestation in their lands through socially inclusive timber and cacao businesses, under the name of the Ni Kaniti project, which means `forest and development' in the local language.

For this investment, Althelia partnered with AIDER (a Peruvian NGO project developer), Cite-indigena (a community company, and commercial aggregator), ACICOB (an association of the seven native communities for REDD+), ORAU (an indigenous organisation representing indigenous peoples of the Ucayali region), USAID (a credit guarantor) and Ecosphere+ (a route-to-market broker for carbon). Up to US$6.5 million was to be invested in: (1) low impact FSC-certified selective logging; (2) cacao agroforestry; and (3) native forest plantations. The seven communities operate under a business aggregator company called Cite-indigena that was to be strengthened to be the sole commercial company in charge of purchasing the products from their communities, and the agent for the commercialisation and route to better markets.

The investment transaction uses an innovative model developed by the Althelia Climate Fund. Future sales of carbon credits are used to collateralise a US$6.5 million financing package for a holistic sustainable land use programme; backed by a USAID Credit Guarantee. The carbon credits are then sold by Althelia Climate Fund's subsidiary, Ecosphere+, whose global customers purchase

carbon credits (which finance these forest protection projects) to rebalance and offset their emissions and align their actions with global climate and development goals.

The additional innovative feature of the Ni Kaniti deal lies in its phased approach to the development of the programme. Phase 1 (financed by Althelia's spot purchase of US$300,000 of carbon credit) prepares a comprehensive investment plan with the seven communities to address the most urgent challenges for avoiding deforestation and forest degradation, assess different business alternatives, update control and surveillance strategies and pay for urgent actions related to pending land boundary conflicts with invaders. Phase 2 (financed through a zero-coupon carbon-asset backed loan, collateralised by the carbon stock in the communities' forest and REDD+ project, and guaranteed by USAID) will enable the seven communities to:

(1) improve land governance and sustainable land management in 120 000 hectares;

(2) organise and implement sustainable business structures linked to forests;

(3) install native forest plantations and native cocoa-based agroforestry plots;

(4) improve efficiency of certified FSC selective logging; and

(5) establish route-to-market and sustainability mechanisms.

Althelia is providing the investment within an innovative social inclusive partnership model where the profits of the venture will be shared in a transparent and equitable structure fully compliant with Peruvian regulations and with Fairtrade and FSC standards.

As yet there have been few examples of national 'audit funds' to help local communities get certified. But the possibility is not without precedent. The FSC launched its own smallholder fund in 2012 – reviewed by ETIFOR in 2017 but without a publicly available report. Various large funding mechanisms have been set up recently with explicit smallholder aims and claims, such as the World Bank Forest Investment Programme (FIP), the UK AID Palladium-administered P4F programme, and the new Agri3 fund involving UNEP, IDH, FMO and Rabobank. Recent evaluations of the FIP demonstrate the considerable challenge in engaging and supporting smallholder and community forest enterprises (Macqueen et al., 2018d). Recent annual reports of the P4F show a focus on limiting the forest impacts of major commodity crops such as cocoa in West Africa and coffee in East Africa – but in Asia there might be interesting options for community forestry emerging from Ecosystem Restoration Concessions – ERCs (partly financed by honey value chain development) and village forests (Hutan Desa). The Agri3 fund also looks set to focus mainly on limiting the impact of large-scale commodity development – rather than spreading SFM by IPLCs. But there is no reason why a dedicated

fund could not be set up to help recognise and spread SFM by IPLCs – including explicit commitment to cover audit costs. This idea of a global 'audit fund' for certifying SFM by forest communities and smallholders deserves further exploration.

4.1.3 PRACTICAL POTENTIAL AND SYNERGIES

As noted in the introduction (Section 4.1.1), a higher ratio of certification audit costs to overall income is almost always the case for smaller community forests businesses. Additionally, the complexity and consequent cost of meeting certification standards for SFM in complex tropical forests, compared with say boreal forests or plantations, further exclude community forest businesses in the tropics. Several approaches could be developed that attempt directly to eliminate or offset those costs, and so level the playing field for recognition and spread of SFM by IPLCs through the main certification schemes, such as PEFC and FSC.

The first option (to cover certification costs) is to revisit, revamp and streamline the audit procedures for fair trade timber where the buyer pays those costs. The strong market demand for such a mechanism still holds (i.e. fair trade is still much better recognised by consumers than either PEFC or FSC). The technical viability of making the value chain work has been proven through three pilot cases. The main failings appeared to be the lack of finance to bring those pilots to market conclusion, the internal politics within FLO (changing approval processes for new product labels) and FSC (which erroneously sees its commendable requirements for social action as equivalent to a commitment to pay for them as in fair trade), and the unnecessary complexity of the dual audit process. Simplifying certification procedures through risk-based approaches is certainly an area that needs further investigation.

Logger marking felled tree, East province, Cameroon
© Brent Stirton / Getty Images / WWF-UK
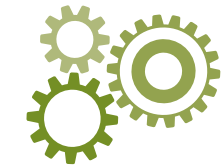
MUCH MORE IS NEEDED TO DEVELOP THE PRODUCTS AND VALUE CHAINS THAT WOULD MAKE PROFITABLE AND REINFORCE THE RETENTION OF BIODIVERSITY

On a more cautionary note, the fair-trade market (i.e. exports) is only ever likely to be a small component of the overall market for community forest products. Additionally, the logistics of meeting international market quality standards and procedures will always remain daunting for community forest groups. Nevertheless, setting the precedent that the costs of certification for community forest business should always be offset because of fair trade concerns is a worthy objective and in higher-demand scenarios in the future could become a larger source of supply.

A second option (to cover certification costs) would be to offset those costs through the sale of ecosystem services – either by co-recognising an ecosystem service claim within the FSC process or by using the sale of carbon credits directly to finance the development of FSC-certified community forestry (see Box 11). In the future, co-certification between forest certification (PEFC and FSC) and carbon certification (VCS and others) may become more integrated and efficient – and could be further developed to allow carbon finance to cover certification costs. Similar possibilities seem to exist for biodiversity claims and payments or for water conservation. Already, carbon finance specialists such as Althelia are using carbon credits to collateralise loans to community forestry groups over large areas (Box 13). Further market development will pay dividends in the longer term. The

ultimate aim is to go beyond covering the costs of certification – towards a situation in which SFM offers gains to IPLCs over and above supporting those transaction and verification costs.

More immediate might be the third option, which would be for a certification scheme to establish a dedicated community forest and smallholder business fund, for which one eligible component might be a 'certification audit fund', covering of the certification costs to prove SFM should that be desired by the market. Many 'forest finance mechanisms' have been developed in recent years (e.g. the FIP, P4F, Agri3) but few are designed with an explicit focus on supporting community forest business. This often results in a slide into working with and subsidising corporations in agricultural commodity chains who wish to engage smallholders to improve supply rather than recognising and spreading business opportunities derived from SFM. The latter is what is needed – and while some dedicated forest finance mechanisms have proven successful (e.g. the FFF) much more is needed to extend their reach, and develop the baskets of products and value chains that would make profitable, and so reinforce, the retention of biodiversity. There are also obvious synergies to be explored in working with any potential 'legality assurance' funds, or using new finance tools such as the F3 Life and GreenFi approach.

Lakehlaaii community forest in Tayatchaung township, Tanintharyi division, Myanmar. © Hkun Lat / WWF-US

4.2 OTHER MEANS OF VALUE CHAIN VERIFICATION – OPTIONS EMERGING THROUGH PARTICIPATORY GUARANTEE SYSTEMS (PGS) AND OTHER MARKET COALITIONS

4.2.1 HOW MIGHT BUSINESS PARTNERSHIPS HELP THE RECOGNITION AND SPREAD OF IPLC SFM

PRODUCERS WITHIN THE SYSTEM JOINTLY AUDIT THEIR CONTEMPORARIES TO ENSURE THAT THEY ARE MEETING THE AGREED CRITERIA

Since the FSC general assembly in 2014, various organisations in Latin America have been exploring a model of recognising and spreading SFM by IPLCs that offers different options to different categories of community forestry. This involves assigning community forestry organisations into different risk categories, through a process involving application, self-assessment and action plan development (Fraisse, 2018). Depending on their risk category, high-to-low risk communities might then be able to assert 'community origin', 'community legal origin', 'community-controlled wood', or 'FSCommunity'. Along that continuum, the lowest risk category might then use a 'trust-based' approach such as a 'Participatory Guarantee System' (PGS) to make their FSCommunity claim. Such PGS have the distinct advantage that they involve participatory action with consumers and other producers – building awareness over sustainability concerns in local markets – and spreading best practice within a region.

PGS ARE NOW ACTIVE IN 72 COUNTRIES WORLDWIDE

First used in the 1970s in France and Japan, PGS are now active in 72 countries worldwide (Leconto and Hatanaka, 2018). They are defined by the International Federation of Organic Agriculture Movements (IFOAM) as 'locally focused quality assurance systems'. They certify producers against a locally agreed set of criteria that substantiate a claim that those producers want to make. PGS is based on the active participation of stakeholders and built on a foundation of trust, social networks and knowledge exchange (IFOAM, 2008). It is ultimately other producers within the system who jointly audit their contemporaries to ensure

that they are meeting the agreed set of criteria. In the process of so doing, adjacent communities interact and learn together about the importance of sustainability and maintaining agreed standards to improve their joint reputation.

PGS are generally regarded as much less costly and bureaucratic for rural communities than third-party certification schemes (Nelson et al., 2016), and are often adopted explicitly to cut costs where consumers trust the producer groups. For example, organic agriculture has been a leading area in which producers serving domestic markets use organic PGS to cut costs such as in Brazil (Sacchi et al., 2015), India (Hill, 2016). Mexico (Nelson et al., 2016) or Tanzania (Cannon et al., 2019). But PGS can adapt to a much wider spectrum of production systems and claims than simply organic agriculture (Lemeilleur and Allaire, 2017).

While organic PGS currently show most widespread use, there have also been recent developments to use PGS for claims about forest products – such as the Imalogo developed by Imaflora (in Brazil – see Fraisse, 2018) or the Forest Harvest system developed by the Non-Timber Forest Product Exchange Programme (NTFP-EP – see NTFP-EP, 2019 and Box 14) or the Green Charcoal system developed by the FAO in Zambia on the back of forming charcoal producers associations (Ziba and Grouwels, 2017). Unlike the situation for organic agriculture where PGS schemes have asserted themselves over third-party organic certification in local markets, all of these PGS schemes are still developing their market position.

Harvesting rattan in Sulawesi Indonesia.
© Duncan Macqueen

BOX 14. FOREST HARVEST AND ROTAN LESTARI PARTICIPATORY GUARANTEE SYSTEMS (PGS) THAT AIM TO IMPROVE RECOGNITION AND SPREAD OF SFM BY IPLCS BY ENHANCING BRAND REPUTATION

In 2012, an initial PGS pilot initiative in Indonesia involved development of the Rotan Lestari (Roles) PGS scheme for sustainable rattan. Rattan farmers and craft producers worked together with NGOs, scientists, local and national government officials with the support of the Non-Timber Forest Product Exchange Programme (NTFP-EP) to develop a Sustainable Rattan standard. This PGS standard covered aspects of traceability, both production and ecological sustainability, legality and socio-cultural factors. The system was pilot tested in East Kalimantan in the production of Dayak Benuaq baskets with the first sales in 2014 by the community enterprise Bina Usaha Rotan (BUR). The pilot was overseen by a local PGS unit comprising members of the local rattan weaver's association (P3R), NTFP-EP, and local government representatives from the divisions of forestry and of industry. In 2015, a national PGS council was established across Indonesia to spread the PGS potential. Upscaling potential is massive, with 222 more communities in the district and a further 9 districts in East Kalimantan – plus innumerable other islands. For example, by 2019 in Sulawesi, the Rotan Lestari model has led to substantial increases in sustainability, but also in orders from processing centres such as Cirebon and Surabaya.

Additionally, by 2014, the idea for a more generic PGS system was being considered by NTFP-EP. This led to the development of the 'Forest Harvest' collective mark which aims to highlight the forest source and sustainability of products, starting with those coming from community partners of the NTFP-EP network. The idea is that this will be a generic mark covering all NTFPs that are harvested from the forests, whether from the wild or already cultivated sources.

The 'Forest Harvest' label guarantees that the products meet three parameters:

1. Traceable Community Forest Origin – using Participatory Guarantee Systems (PGS) or other monitoring systems in place, products or the materials used can be traced back to well-managed community forest, whether wild or cultivated in home gardens of forest-based communities.

2. Sustainable – the product is harvested according to the agreed sustainable harvesting protocol for the product laid out in the PGS.

3. Good Quality – the product is produced according to market standards and meets existing product quality standards of the market, unless a different higher standard is agreed upon.

Another pilot, this time of the Forest Harvest mark took place in Asia, with the three Lebah community honey enterprises on Sumbawa Island. Partners had gathered in 2015 at Madhu Duniya, to discuss Asian forest honey, and agreed to draft Asian Forest Honey standards and protocols that would be the basis of the use of the collective mark on forest honey. Alongside a Geographical Indication Mark (GIM) to distinguish authentic Sumbawa honey from impure or false Sumbawa honey, producers can now follow the Asian Forest Honey Standard to qualify for the Forest Harvest Mark. The association of this mark with the regionally renowned Sumbawa GIM was intended to spread awareness of the forest harvest mark. By the end of 2019, honey carrying this mark was being promoted to various companies and in big cities of East Asia and Southeast Asia with presentations at the 2019 Madhu Duniya Asian Honey gathering.

While this PGS has been developed for NTFPs, there is no inherent reason why the same claims might not also apply to timber – providing a means of assuring local markets of the community origin, sustainability and quality of those products.

None of the forestry PGS have yet challenged the timber domination of third-party certification schemes (PEFC and FSC). But developing PGS for SFM timber production serving local markets might greatly increase awareness of and attention to sustainability in those markets – and help spread SFM by IPLCs. Box 15 details the forestry PGS scheme developed for NTFPs that could readily be broadened to cover timber. As noted above, PGS may serve the necessary claims for sustainability of local markets in low risk community categories – notably the production of on-farm timber in, for example, Java, where communities are actually restoring forest on Documented challenges that affect PGS will have to overcome, including getting a critical mass of participants and overcoming decision-making conflicts between producers (Home et al., 2017) financing the PGS during its development (Nelson et al., 2010) and overcoming official resistance to the recognition of the claims (Home et al., 2017) and the consequent battle for credibility (Bellante, 2017; Bouagnimbeck, 2014). There are also challenges to do with a lack of knowledge about how to set up such a system, the time involved, and the risk of conflicts over what is or is not acceptable between different producer groups (Kaufmann and Vogl, 2017). But a key observation is that the battle for credibility only needs to play out within the local markets (IPLC producers, local buyers, local government authorities). It is they who need to agree on acceptable standards that give confidence about the sustainability of future productions systems and supply. Where timber is sourced from forest mosaics of on-farm tree planting, these sustainability standards could be relatively simple. Where timber is sourced from forest core or forest edge natural forests, some form of block-based harvesting system that allows natural regeneration could be contemplated. The components of sustainability need only match the interests of participating members – not the international environmental movement. And local-level progress motivates further spread and uptake – even if it does not yet reach the more elevated standards of FSC or PEFC.

Other means of constituting reciprocal trust-based partnerships to spread SFM by IPLCs are also emerging – but with less emphasis on sustainable product markets, and more emphasis on a planetary health approach, wherein the wellbeing of humans (their health and livelihoods) are addressed in concert with rainforest ecosystem integrity. One such example comes from Health In Harmony in Borneo (Webb et al., 2018). Health In Harmony works, through local partnerships, to develop dynamic reciprocal arrangements with IPLCs in and around important forest reserves. The aim is to recognise their guardianship over forests, assess their views and needs to enable them to perform that role more successfully, and mobilise and deliver services conditional on that reciprocal arrangement (see Box 14). The innovation here is in the open-ended 'radical listening' from which a negotiated solution to forest protection emerges – and the way that 'payment in kind' through the provision of healthcare and training in entrepreneurship for alternative livelihoods is designed expressly by the communities involved, and therefore better tailored to their needs – i.e. a more holistic end point than 'cash in hand'. The model embraces community-centred and designed solutions, which are naturally complex and holistic in their approach. The challenge, as is often the case, is how to move beyond the 'pilot project' nature of the initiative in which payment for the provision of services is manageable, and plug into the substantial mosaic of climate finance that could support a myriad of equivalent community-based conservation partnerships.

4.2.2 EXPERIENCE AND CHALLENGES OF USING BUSINESS PARTNERSHIPS TO VERIFY IPLC SFM

The realisation that PGS may provide an opportunity for recognising and spreading SFM by IPLCs started to emerge in 2012 through the work of NTFP-EP in thinking around NTFPs as noted in Box 14. It was understood that, just as the high costs of third-party organic certification were compromising the local community's ability to offer 'certified organic' products in local markets, so the high costs of forest certification were preventing a similar forest offer of 'certified sustainable' products in local markets. The solution to both might lie in the relationships and trust between local buyers and their local suppliers, and between the local suppliers themselves, i.e. a localised system in which it is more difficult to cheat unnoticed. Early pilots of such PGS have proved beneficial both to community forest businesses, and to the protection of the forests on which those businesses depend. In terms of the contexts in which these schemes might flourish, key ingredients would be a strong value chains supplying local markets, a concerned public in those markets for the impacts of production on sustainability and benefit distribution, and a process of facilitated discussion to develop a PGS satisfactory to all parties (including local government enforcement agencies).

A member of Lakehlaaii community forest measuring the tree during collecting the data in the forest in Tayatchaung township, Tanintharyi division, Myanmar.
© Hkun Lat / WWF-US

BOX 15. HEALTH IN HARMONY APPROACH USING RADICAL LISTENING TO DESIGN RECIPROCAL EXCHANGES OF FOREST PROTECTION AND RESTORATION FOR SOCIAL SERVICES, INCLUDING HEALTH CARE

In 2007 Health In Harmony pioneered a different approach to recognising and spreading SFM by IPLCs. In recognition of the expertise of local and Indigenous People living around the 108,000 ha of Borneo's Gunung Palung National Park, they practiced a 'radical listening' approach. This involved a local partner pilot programme, Alam Sehat Lestari (ASRI), using an iterative technique that sought the answer to one core question: "As the guardians of this forest, what do you need as a thank you from the rest of the world to live in balance with this rainforest?". The question was posed to representatives from the 44 villages surrounding the park, comprising 60,000 people and in such a way as to shed light on the drivers of deforestation, and to help communities design and implement solutions.

In the Gunung Palung case, people living around the park were considered poor by the international definition of poverty, with an average annual income of 3·7 million Indonesian rupiah (US$1·21 per day). Logging was ongoing in 2007, primarily to generate much needed income and to pay for health care. Health care services were either unavailable or of extremely low quality, and the nearest hospital was 2–12 hours away. Following the radical listening approach, a reciprocal agreement was reached whereby ASRI would provide high-quality health care and opportunities for alternative livelihoods and entrepreneurship mentorship, and the local communities would cease logging practices and engage in conservation programmes to restore the severely degraded park.

To implement (and monitor) the agreement, ASRI uses an integrated approach that includes monitoring logging activity through forest guardians, community meetings, satellite imagery, ground truthing, and surveys; providing health care in ASRI's medical centre, which offers non-cash payment options and progressive discounts to villages as they reduce rates of logging. Funding comes from a range of ODA and philanthropic sources. ASRI also works to make alternative livelihood opportunities, such as organic farming, available through training and assistance to people who want to stop logging. Furthermore, ASRI offer's conservation education programmes for all ages; and plants native rainforest trees in the park to restore habitat, and critical corridors for orangutans and other species.

The results of this approach have been eye-catching. The self-reported 1,350 logging households at baseline in 2007 decreased to 450 households in 2012 and 150 in 2017 (a 90% decline). Geographic Information Systems data also show a stabilisation in primary forest loss and an increase in secondary forest growth. Surveys demonstrated that 52% of previous loggers had transitioned to farming by 2012, and that there have been substantial improvements in health. For example, from 2007 to 2017, infant mortality declined by 67%. During that period, ASRI also treated nearly 70,000 patients, distributed more than 1,000 eyeglasses and 4,000 mosquito nets, conducted monthly mobile clinic visits, and initiated primary care services at its hospital.

Having demonstrated proof of concept, the programme is now replicating in Bukit Baka Bukit Raya National Park in Indonesia and Manombo Special Reserve in Madagascar. Can this combination of a novel 'radical listening' approach and responsive reciprocal service provision in return for continued guardianship work more generally? That is the question actively being asked.

Source: Webb et al., 2018

But might such a PGS work for the more valuable and contention value chain of timber? As noted in Section 4.1.1, in 2014, NEPCon, Forests of the World, Rainforest Alliance and Imaflora joined forces to support FSC's thinking 'outside the box', capitalising on under-valued or under-utilised initiatives. They developed a 'step-wise approach' starting with a risk assessment leading to the assignment of four categories. Highest risk communities could start simply by assuring 'community origin' (but with a commitment to reduce risk over time). The next highest risk could work towards 'legal origin' (again with commitments to reduce risk over time). The next category works towards FSC-controlled wood. Finally, the lowest risk category works with a PGS that would be compatible with an FSCommunity claim and label. The idea is that the use of a PGS would acknowledge the different social statuses of community forestry production, but also the diversity of communities and risk categories. It would also connect with legal compliance and existing national legality schemes, as well as move people along the road towards initiatives such as FSC SCLO should they need to make such a claim in the future. The process was felt to require a community forestry 'markets coalition' that would understand and support the differential claims of different communities in different risk categories.

Similar schemes to develop such a 'markets coalition' can be found in other parts of the world. For example, Earthworm (formerly The Forest Trust) has adopted such an approach in its work in the Indonesian teak value chain as described in Box 16. While not using a PGS, in this case the membership of Earthworm acts as a trust-based equivalent for buyers. So, while some of the

community groups supplying teak are certified and some are not, the 'market coalition' understands and trusts the sustainability intentions of the broader network that supplies the teak timber.

Similarly, the FFF partnership has recently begun to pilot PGS for 'green charcoal' production in Zambia. While still under development, the idea once again revolves around a local market coalition, in which both buyers (e.g. consumers in Choma district) and producers in neighbouring communities want to move from unsustainable to sustainable charcoal use. The forestry department is involved alongside local NGOs to develop a credible standard for sustainable charcoal production that could form the basis of the PGS. Government involvement can serve the additional purpose of confiscating non-PGS certified charcoal that is not being produced sustainably (and in many cases illegally) as an added incentive to shift producer groups towards more sustainable practice.

In some contexts where community forestry is based around collective community farmland and forest, or private forest and farm smallholdings, some agricultural commodity buyers are increasing their support for more trees in the farm landscape and for tree-planting efforts. Local brand recognition of such support may be increasing and this may lead the buyers to incorporate the action at scale. For example, cocoa buyers in West Africa dealing with say 5,000 smallholders could add monitoring of such planting and tree caring into their relationship relatively easily since aggregations of these smallholders already prevail. Such aggregation is less likely amongst communities in remote forest areas and higher costs would be involved in such monitoring.

Growing teak seedlings in community nursery in Java. © Duncan MAcqueen

Members of Lakehlaaii community forest are having meeting with WWF Myanmar staff Ko Zin after collecting the data in the forest in Tayatchaung township, Tanintharyi division, Myanmar. © Hkun Lat / WWF-US

BOX 16. EARTHWORM MARKET COALITIONS SUPPORTING DIPANTARA TO DRIVE FORWARD SUSTAINABLE COMMUNITY TEAK GROWING IN JAVA BY LOCAL COMMUNITY FOREST GROUPS

Earthworm have worked with Dipantara since 2007. Dipantara is a small Indonesian wood trading business in the Javan province of Yogyakarta, which has developed a group business model aimed at helping smallholder farmers in the region. Much of Indonesia's teak, for both domestic and international markets, comes from small, family-owned plantations such as those belonging to community farmer groups supplying Dipantara. Millions of families across Java plant teak in this way to earn additional income.

But low-quality timber, due to poor silvicultural techniques, lack of market information along with lack of investment capital, used to mean that farmers received well below market price for their wood. Earthworm has helped Dipantara to provide high quality teak seedlings and practical training for farmers on how to estimate teak volumes and calculate sustainable harvest levels, and how to select seedlings, plant, prune, thin, manage and fell trees safely without damaging neighbouring property.

Dipantara works by partnering with farmers' groups in villages to sell their wood to international markets. In the 12 years since the initiative was established, Dipantara has become a viable wood trading business helping Indonesia's farmers manage and sell their teak and mahogany.

A key part of developing a successful business model for Dipantara has been the support from Earthworm's retail members or 'market coalition', such as the French homeware retailer Maisons Du Monde, French home improvement chain Leroy Merlin and US homeware retailer Crate & Barrel. These private sector buyers have supported Dipantara farmers through orders for their stores and have funded more villages to join the

initiative. Earthworm has blended such finance with traditional ODA from USAID, AUSAID, UKAID, EU and ICCO to scale up Dipantara's work.

Before the 'market coalition' was set up, Dipantara was a small business with just ten farmers' groups. Earthworm became involved to help develop a successful business model based on community collaboration and environmental awareness. The market coalition managed by Earthworm meant Dipantara was able to guarantee ongoing orders early on. Today Dipantara has partnerships with 96 farmers' groups in 22 villages. In total, over 6,164 farmers and their families have registered with the business. Dipantara now has greater access to new markets, selling to tens of different retail outlets and factories. Its members make on average 20% more for their teak by selling to Dipantara instead of local timber middlemen.

Of the total of 96 farmers' groups, the model achieved Forest Stewardship Council (FSC) certification in 2012 for 20 of them. But not all groups have yet progressed that far. But then in 2014 a second milestone was achieved when Dipantara became SVLK-certified (Indonesia's Legality Assurance Scheme). And because the Earthworm 'market coalition' has confidence that all of Dipantara's timber can be traced back to individual farms, they sustained market access for the whole group. As well as developing strong market links and successfully maintaining FSC certification for nearly four consecutive years, Dipantara is now able to finance certification costs without Earthworm's support, and Earthworm was able to close its support for Dipantara which, with its market coalition, can stand on its own feet.

4.2.3 PRACTICAL POTENTIAL AND SYNERGIES

As noted in the introduction to this section, there appears to be significant interest in exploring new approaches to assuring SFM by IPLCs for more local markets. The precedent of using PGS to make such local market claims has now been well established for the organic agriculture movement. And there seems to be some momentum to develop credible PGS for a variety of forest products, based on a number of perceived advantages:

- Their ability to foster local knowledge exchange and learning around sustainability (Bouagnimbeck, 2014)

- The empowerment dimension of being able to define, and be held accountable by communities' own vision of sustainability (Boza Martínez, 2013)

- The way PGS development enhances social cohesion which is itself important for successful community forestry (Home et al., 2017)

- The lower costs and lower bureaucracy of PGS implementation for IPLCs (Sacchi et al., 2015)

- The greater flexibility and degree to which the system can be designed around the realities of smallholder farmers (Nelson et al., 2016)

- The fact that PGS could form a key element in building alternative trade networks for more sustainable forest products in the tropical regions (see Bellante, 2017).

It is clear that several PGS are already being developed for the community forest sector. NTFP-EP had the interesting idea of having one overarching 'forest harvest' PGS that could accommodate various different product sustainability standards (e.g. for NTFPs such as honey or rattan). A more ambitious idea might be to have representative organisations of different types of community forestry (such as IFFA, GACF and IAITPTF) endorse one overarching PGS standard but allow for multiple different product sustainability standards catering to the needs of different community types and product value chains. Or there could be a simple profusion of locally grown PGS that would be well known in the local market where that assurance is trusted, but not elsewhere.

An additional option is for the deliberate strengthening of 'market coalitions' that offer regional or even global markets for community forest products – and both understand and trust a range of community supply partners – in varying degrees of legality and SFM certification. Supporting the networking between such coalitions would help to spread innovations – and build market credibility as various options of well-run schemes emerge. There are strong synergies between this concept of a facilitated 'market coalition' and the work of social investors such as Ejido Verde described in Box 8.

SUPPORTING THE NETWORKING BETWEEN SUCH COALITIONS WOULD HELP TO SPREAD INNOVATIONS – AND BUILD MARKET CREDIBILITY AS VARIOUS OPTIONS OF WELL-RUN SCHEMES EMERGE

Loggers marking the stump of a recently felled Ayous tree, East province, Cameroon © Brent Stirton/Getty Images/WWF-UK

4.3 BETTER COMMUNICATION, TRANSACTIONS AND TRACEABILITY – OPTIONS EMERGING FROM BLOCKCHAIN, E-BANKING AND COMMUNICATION TECHNOLOGY DEVELOPMENTS

4.3.1 HOW MIGHT ENCRYPTION AND COMMUNICATION TECHNOLOGY HELP THE SPREAD OF IPLC SFM

The increasing complexity and fragmentation in global value chains have made it difficult for consumers to confidently back sustainability. That same lack of confidence undermines efforts to incentivise SFM through market-based payments for performance. The forest products of IPLCs may only rarely enter global value chains, but their SFM would greatly benefit from e.g. climate finance. Blockchain is one information technology (IT) development which could potentially reinject confidence into these markets (Nikolakis et al., 2018). A blockchain is a distributed and immutable electronic database – a ledger of every transaction that has ever taken place on a network. Data are stored as cryptographically secured 'blocks', strung together in a chain. The technology also uses algorithms to facilitate 'smart contracts' – with self-executing code providing a secure mechanism for electronic collaboration that does not rely upon a central authority to mediate between transacting parties. There are a growing number of initiatives with varying objectives that are exploring the use of blockchain technology in ways that may affect or bring benefits to SFM by IPLCs. Some initiatives have fallen by the wayside – one study found that 66% of a variety of blockchain initiatives failed to form functioning projects – many have been criticised for making unrealisable claims or exacerbating problems by reducing ecological or social complexity to make simple market transactions (Benedetti and Kostovetsky, 2018; Sullivan, 1 February 2018).

A recent review of experience with blockchain initiatives related to REDD+ programmes focused on four key problems of REDD+ that blockchain technology might in theory overcome: lack of consumer willingness to pay; deficient monitoring reporting and verification systems; inequitable distribution of costs and benefits; and insecure rights for IPLCs. On all four fronts the review found the benefits of blockchain to be ambiguous but, since blockchain applications are still nascent, called for much greater scholarly analysis since it currently appears to be scarce (Howson et al., 2019). Outside the realms of forest management, other analysts have noted some serious relevant potential barriers to adoption that can occur between organisations (e.g. willingness of certain parties to disclose information into blockchain), within organisations (e.g. lack of knowledge and expertise), relating to the system (e.g. immaturity of the technology and potential glitches), and external to the system itself (e.g. unknown government policies and support) (Saberi et al., 2018).

Beyond blockchain, a range of innovative new IT technologies are already making life easier for community forestry organisations aiming to manage their forests more sustainably. Among these, mobile marketing, e.g. promotion and selling through Facebook, Instagram and other social media platforms is widely used. GIS mapping and photography are at the heart of a range of initiatives. The Dryad project in Cameroon, a partnership led by the World Agroforestry Centre, has delivered strong benefits to local forest enterprises from grants (backed by the UK government) predicated on the flow of data proving good forest and enterprise management. Work to date shows that, with proper training and the right incentive structure it is possible to maintain good flows of community forestry data from remote forest locations with android phones through a data connection, or a satellite transmitter or simply a monthly trip to the nearest town. The data is sent to a back-end server and can be accessed anywhere, with payments issued for performance (Piabuo et al., 2019).

Big data, automation and artificial intelligence look set to continue shaping human relationships with nature in coming years. Most developments would currently seem to present opportunities for big business rather than community enterprises and smallholders, but some would seem to offer potential for smaller players. The low level of capital in relation to labour in the bulk of informal sector micro-enterprises also suggests that informal employment will be quite resistant to automation. Again, the main promise perhaps lies in cutting the cost of monitoring and verifying business and forest monitoring – with combinations of developments in biometrics, remote sensing, big data, and cloud and mobile computing.

4.3.2 EXPERIENCE AND CHALLENGES OF ENCRYPTION AND COMMUNICATION TECHNOLOGY TO VERIFY IPLC SFM

To date there is little evidence of significant funding flowing to IPLCs from blockchain initiatives, although some show promise – see Box 17.

Man marking legally harvested timber, Samreboi, Ghana
© Hartmut Jungius / WWF

BOX 17. REGEN NETWORK'S BLOCKCHAIN AND SMART CONTRACTS PILOT PROGRAMME TO IMPROVE RECOGNITION AND SPREAD OF SFM BY IPLC IN PERU

Regen Network has created a blockchain based direct payments system where local communities can interface with investors and donors. Rainforest Foundation US and Regen Network are using blockchain technology to track, verify, and reward communities for protecting and regenerating forests in a pilot project in the indigenous community of Buen Jardin de Callarú, Peru.

Near real time satellite data are used to detect deforestation and forest cover; smartphone apps track community level actions and blockchain technology issues smart contract payments to communities that have proven to protect or regenerate their forests. Through a user-friendly interface, businesses, institutions, governments, and individual donors can thus find and pay for verified and unalterable evidence of forest protection from data sourced directly from a community and satellites.

In the pilot project, getting seriously underway in 2020, the Ticuna community of Buen Jardin de Callarú in the Loreto district of northern Peru – which has historically suffered from deforestation from illegal logging, cattle ranching, and the cultivation of cocoa plantations – agreed to collectively conserve 1,000 hectares of Amazon forest, and simultaneously undertake a reforestation project in currently degraded land.

The community will actively patrol their territory and monitor deforestation using their existing community monitoring programme and incorporating the use of drones, adapted smartphone apps and investigation of any deforestation alerts they receive from the WRI Global Forest Watch system. The community will be compensated for maintaining net zero deforestation through direct encrypted transfers conditional upon the community's compliance with an agreement signed with Rainforest Foundation US.

The funds they receive for protecting their forest will be deposited into a communal bank account, which they are calling their `tree account' since they have collectively agreed to use these funds to cultivate seedlings that will be distributed to families to plant, tend, and monitor – aiming to reforest at least 70 hectares in Year One. Compliance with tree planting will be measured and verified by satellite and quarterly updates from the community and this data will be attached to the blockchain.

Looking further ahead, Regen Network proposes to use automated remote sensors to generate reliable attestations about the change in health of any predefined geographical area. With such developments there may be prospects for IPLCs to cut out expensive intermediaries and access some of the financial benefits of a greening economy that they have previously been denied (Howson et al., 2019). Tantalisingly, Regen also proposes governance and consensus mechanisms promoting greater participation from forest-dependent communities which, if realised, could truly help reconfigure patterns of unsustainability and inequality (Booman et al., 2019).

While these more advanced technologies are still under development, mobile device technologies in general have already brought immense benefits to livelihoods, and access to services and information, in developing countries. Around 25% of Kenya's gross national product now flows through the country's mobile money system, M-PESA, and this system has enabled the development of several key initiatives with forest-linked communities. An e-payment system is being developed in Vietnam's now extensive system of payments for forest environmental services – see Box 18.

Community forest cooperative in upland Vietnam. © Duncan Macqueen

BOX 18. VIETNAM'S PROGRAMME OF PAYMENTS FOR FOREST ENVIRONMENTAL SERVICES BRINGS IMPROVED BENEFITS TO HOUSEHOLDS FROM E-PAYMENTS AND DIGITAL MONITORING

Vietnam's payments for forest environmental services (PFES) scheme began with a pilot in 2008 and has grown into a unique programme which now involves some 500,000 households, some US$100 million per year in payments and about 6 million hectares of forest. Initial experience with the government-backed scheme, which also had some support from USAID, led to a state decree in 2010 rolling it out nationally. By 2012, user fees collected – primarily from the country's hydropower companies – amounted to US$59 million annually, and by 2018 these had risen further. From a start in 4 provinces the number of provincial funds that this revenue was routed through had risen to 44 by 2018, accounting for nearly three-quarters of provinces that have some forest cover in Vietnam. Some 450,000 households were receiving payments by this time (Phan Dang et al., 2017).

Upon formalising the rights to resources on community land in a 'red book', households could get a payment for watershed erosion control. However, of the approximately 500,000 households who have received PFES money in recent years, only 115,000 have recognised red books, while the rest participated through 'labour' contracts. This use of both private property and non-property-owning household contracts is an unusual feature of the scheme in Vietnam. The national average for payments is US$9 per hectare, with a range from US$0.09 to US$55 per hectare - this is a function of the amount of user fees generated in any given watershed. Local authorities are free to decide whether funds should be disbursed equally among all members of a community or to single out specific recipients, such as those most engaged in forest protection or those with larger forestland holdings.

The system is, in effect, mandatory for many buyers and sellers; it does not rely on any market mechanisms to fix prices; and, in general, it does not monitor or condition payments on the delivery of a well-defined ecosystem service. With features like these, the PES programme in Vietnam bears little resemblance to any other system but is entirely consistent with both Vietnam's development history and the push and pull of actors on the ground.

It is in effect a state livelihood subsidy, while for local officials it is a new source of locally controlled funds they can manage with minimal interference from above. For the government, the PFES programme is a resounding success: it raises in excess of US$100 million each year; the number of forest law violations and areas of forest destruction are estimated to be down since PFES began; there are half a million households participating in or getting benefits from PFES; and many communities have been able to invest revenues into clinics, schools and other village infrastructure (McElwee et al., 2019).

With USAID support, the government has started a new phase of the programme - Vietnam Forests and Deltas. As well as targeting two or three further industries with high emissions, environmental dependence and impacts beyond hydropower, one feature of this new programme is a move from cash to electronic payments. Cash payments were thought to present security risks, require complex and time-consuming travel, and create opportunities for corruption. In early 2019, Cat Tien National Park in Lam Dong province successfully completed the first PFES e-payments to 258 households with mobile phones who help protect the park's forests and have since been expanding this system in Lam Dong and Son La provinces, aiming to make e-payments to some 12,000 additional households during the initial pilot phase.

The Ministry of Agriculture and Rural Development then expects to issue guidance on e-payments and the improved use of mobile devices for monitoring the scheme and roll this out to the 500,000 households receiving PFES payments around the country. Observers have noted that the country does not yet have a strong national e-banking system (such as the one which enables the M-PESA e-payment system to work well in Kenya) – which would help ensure that the provincially controlled funds actually reached local households. Such a system may well develop, and the programme's adoption of digital finance and monitoring are important innovations that promise to increase transparency, security, and efficiency.

One example of creative use of ICTs to the benefit of IPLCs is the work of the Extreme Citizen Science Research Group at University College London which has, since 2011, been working on the development of geographical analysis and visualisation tools that can be used, by non-literate as well as literate people, in culturally appropriate ways. It started with the case of supporting Pygmy hunter-gatherers, local NGOs and other local indigenous partners to tackle illegal logging in the Congo basin, and expanded to work with community groups in Namibia and the Brazilian Amazon. The initiative has involved developing appropriate participatory methods, hardware solutions (e.g. for charging phones in places where there is no electricity), and software, which has included: Sapelli: a mobile data collection and sharing platform; Geokey, a back-end solution to support participatory mapping; and a participatory mapping platform to visualise data collected by the users.

A biologist from Central Java listens to gibbons in a newly formed concession operated by the a World Wildlife Fund. The Bukit Tigapuluh landscape is one of the last great stands of rain forest in the deforestation hotspot that is the Indonesian island of Sumatra. © Neil Ever Osborne / WWF-US

The initiative is now expanding to include the development of: a tool to support data uploads from users' handheld devices in a secure (i.e. data cannot be taken involuntarily) user-friendly and culturally sensitive way; a data visualisation interface, which considers privacy and other contextual variables (e.g. being culturally appropriate, inclusive of local indigenous knowledge and information that 'matters' and 'makes sense' to its users); and data analysis functionality with appropriate visualisation and communication modes, which answer users' questions and shows data trends and patterns (UCL, 2019).

4.3.3 PRACTICAL POTENTIAL AND SYNERGIES

Blockchain technology may yet offer much to SFM by IPLCs. It could provide a way of integrating different elements within a single assurance system to potentially lower costs, e.g. community forest registration, satellite mapping information, PGS certification and carbon accounting. But many challenges will have to be overcome. Blockchain systems need tangible uniform blocks. IPLC forest management may typically involve very different players and highly varied qualities and types of forest products and services. There are major challenges of scaling and standardisation here. And blockchain is a potentially better way of keeping control of a data-chain – but it does not in itself prevent inadequate or false data from being entered into the chain.

As yet then, as one interviewee put it, "blockchain is often just touted by people who do not know how else to improve the system". Initiatives like WWF's Impact platform may be key in making progress. Launched in late 2019, it is "the first blockchain-enabled collaborative governance platform specifically designed to curate and fund social and environmental

Loading a truck with wood, Iñapari, Peru © WWF / Dado Galdieri

PHILANTHROPIC GROUPS, INVESTORS AND CONSUMERS SEEK SIMPLE ROUTES TO DONATE THEIR MONEY DIRECTLY

BLOCKCHAIN TECHNOLOGY MAY OFFER MUCH TO SFM BY IPLCS AND PROVIDE A WAY OF INTEGRATING A SINGLE ASSURANCE SYSTEM TO POTENTIALLY LOWER COST

impact projects at scale" (Markets Insider, 24 September 2019).

Meanwhile, it is no surprise that philanthropic groups, climate conscious investors and consumers seek simple routes through which to donate their money directly. Ongoing tree-planting initiatives appear to be major and growing beneficiaries from this. Photos of tree-planting efforts sent from the mobile phones of community groups in Vietnam to church-linked groups in Scandinavia are, reportedly, the stimulus for payments to be made to the communities for PES (see Box 18), and a similar publicly available digital photo monitoring system, developed by Sustainifi is used in the GreenFi tool (see Box 7) and other financial institutions. In other cases, photos of patches of woodland of forest, perhaps taken artfully using drones, can help bring tourists to spend money in local enterprises when they visit the area. New combinations of products and services that are locally vouched-for with data that can be provided and accessed online, are emerging with some potential for benefitting IPLCs. For example,

the same technology that is used for participatory mapping could be further developed, such as the Forest People's Programme FPP-Helveta app used for community mapping in 2010, which could also be developed as a market information system tool. All of these developments, however, are conditioned by access to equipment which may still deter community forest groups from using them.

Indeed, major concerns remain that technology developments will primarily result in larger corporate interests benefitting from forests at the expense of IPLCs. If automation, for example, lets agribusiness develop more profitable business models, that could drive further waves of commercial land acquisition, which, under weak land governance, would put the asset base of poor households in forest areas at risk. Similarly, digital management of supply chains will integrate production, processing and marketing to an increasing degree and smallholders may struggle to engage with these changing distribution systems.

MAJOR CONCERNS REMAIN THAT TECHNOLOGY DEVELOPMENTS WILL RESULT IN LARGER CORPORATE INTERESTS BENEFITTING FROM FORESTS AT THE EXPENSE OF IPLCS

Chela Elena Umire passes on information about the different forest plants and their benefits to her daughter. La Chorrera, Predio Putumayo Indigenous Reserve, Department of Amazonas, Colombia. (Left to right: Chela Elena Umire, Angie Tatiana Andrade).
© Luis Barreto / WWF-UK

SECTION 5.
CONCLUSIONS

5.1 THE MOST PROMISING APPROACHES

5.1.1 ENTRY POINTS AND CROSS-CUTTING APPROACHES

We carried out this analysis before the COVID-19 pandemic and responses to it unfolded. Whilst at the time of writing available evidence does not allow us to credibly predict how events will further unfold, we do feel confident that at least some of the following approaches will be crucial to the abilities of communities and wider populations to heal and restore themselves.

The preceding chapters have highlighted a wide variety of approaches that can help recognise and spread SFM by IPLCs. For most of these approaches, perhaps with the exception of a certification system for portfolio investment, there are already good functional pilots. So, the need is perhaps not so much for major new innovations, but for attention to be given to learning the lessons from specific contexts where innovations have been piloted, adapting them to different new contexts and scaling up these more promising options.

While specific approaches that are appropriate for different contexts will differ, there are common cross-cutting approaches (as noted in Sections 2.3 and 2.4) that can and should be integrated in any context. For example, because almost all of the landscape governance and supply chain approaches require strong, locally accountable organisations – enabling investments to build capacity and work through those organisations should be a common entry point for intervention design. Similarly, because almost all approaches (even those using more advanced remote sensing or ICT systems) rely ultimately on credible local assessment methods by locally accountable organisations – ensuring participatory involvement from the outset is an

essential design element. Progress often takes off when experts are no longer needed.

In many cases, the capacity for SFM by IPLCs is undermined by unfair distribution of costs and benefits between communities and other actors such as government. So, communities are often saddled with impossible administrative requirements which should perhaps be the work of government staff. Legal, policy and institutional advocacy work to simplify and reduce costs for local control in community forestry, while increasing government investment and support for community forestry, is therefore often essential. Finally, making progress with these cross-cutting approaches will almost certainly require partnership with external agencies that develop a beneficial community of practice.

Because people rarely invest without certainty of a return, the degree of local control with which community forestry groups can operate matters. And this is true across widely differing country contexts – from the forest core to urban forest-linked processing centres. Good evidence suggests that, in general, devolving control to community groups has strong positive outcomes for SFM. Developing standard local control metrics and using them to benchmark the degree of local control over forest land, forest stewardship, forest enterprise, forest trade, forest policies and forest employment could help drive positive trends in devolution of forests into community control.

In our review of more specific approaches, one observation is that not all approaches (Table 4) work for all community forest contexts (Table 1). There are reasonably obvious patterns of suitability for different approaches. For example, a landscape governance approach such as participatory GPS-enabled mapping and remote sensing to affirm community forest rights and forest cover works best for community contexts in the forest core and edges of high tropical forests where distinctions between contiguous blocks of forest cover can be observed. It works less well in community contexts with farmland forest mosaics and would help little in assessing the sustainability of urban forest-linked processing centres. Conversely, a supply chain approach such as a market coalition to drive forward on-farm tree planting might work best in smallholder farmland forest mosaics or in urban forest-linked processing centres. But the same approach may struggle to engage the multiple species produced from the natural forests of communities in the forest core and edge. Put simply, not all approaches work for all types of community forestry. To make

comprehensive progress, a flexible array of approaches will be needed.

Additionally, while the headings under which we have grouped these approaches ('landscape governance approaches' and 'supply chain approaches') have some validity – there are approaches in both camps that have very similar counterparts in the other camp. An example of this would be the remote sensing tree cover reward systems of the Bolsa Floresta Programme in Brazil (see Box 3) which we have described as a landscape governance approach, and the Health In Harmony approach (Box 15) which also involves a remote sensing tree cover reward system – but developed in the context of attracting PES of standing forests (i.e. a supply chain approach).

In order to provide clarity in the presentation below, we have avoided description of the obvious overlaps amongst the approaches. There are clearly productive links between some of the approaches too that might make some of them best pursued jointly. Combinations of approaches are likely to be essential in any concerted approach to improve the recognition and encourage the spread of SFM by IPLCs, but such combinations are not described below as they would be context specific and would thus need to be the focus of more detailed feasibility assessment.

The following sections summarise the more promising approaches for recognising and spreading SFM by IPLCs – on a spectrum from those highly linked to landscape governance to those highly linked to the supply chain. We have sequenced the approaches to reflect a rough order of investment need – from situations where only relatively weak capability is available, to more advanced approaches where capability is much stronger. It is difficult to sequence these options in terms of their potential impact, because contexts vary so much that what is appropriate or could add value becomes almost entirely context specific. Nevertheless, we present in Figure 3 a diagram showing the centrality of efforts to establish and strengthen locally accountable organisations.
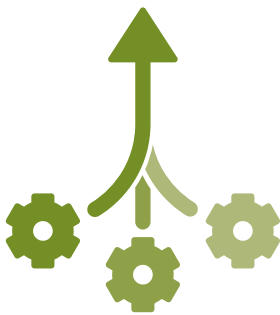
Amazon forest, La Chorrera, Department of Amazonas, Colombia. © Luis Barreto / WWF-UK
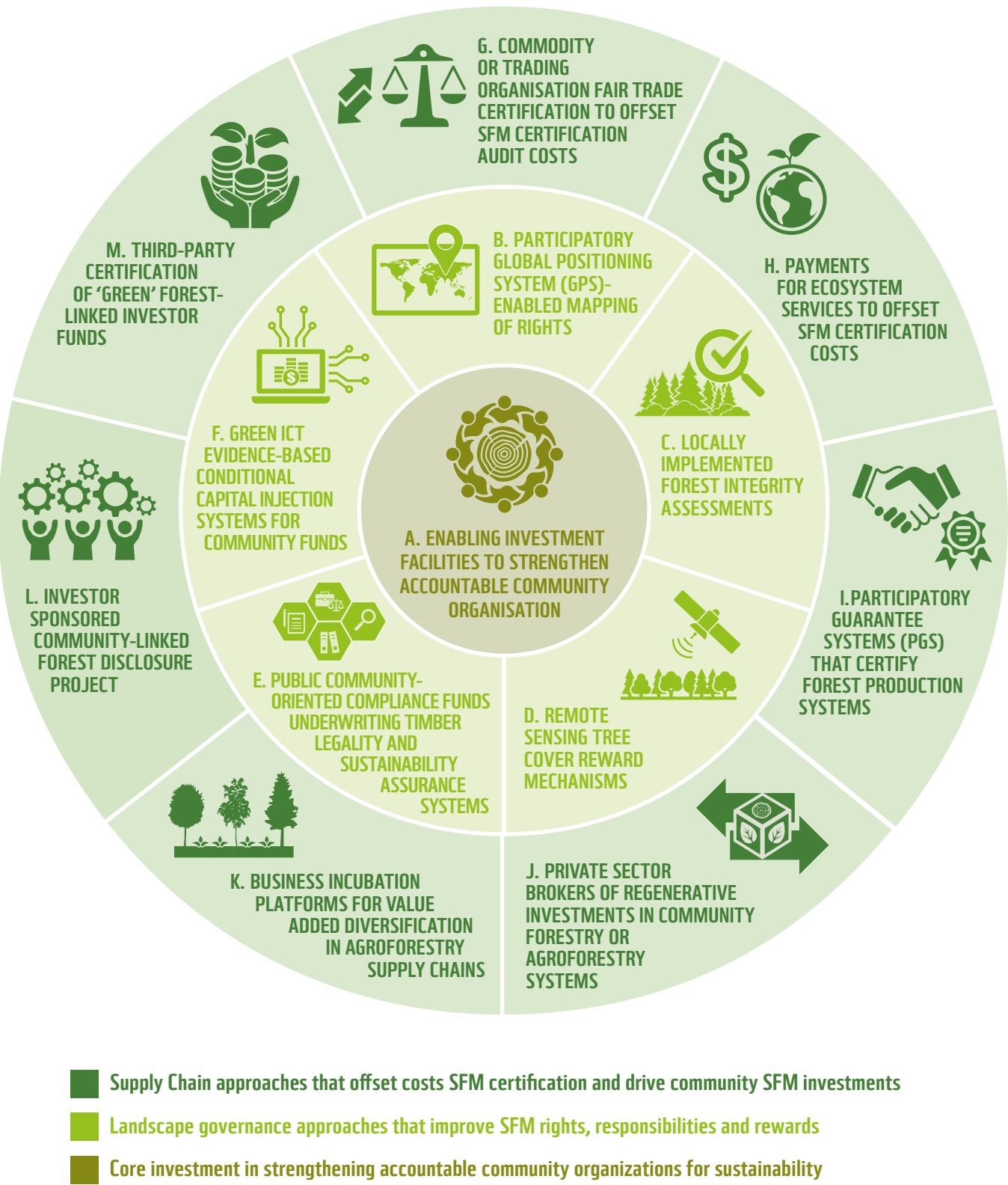
APPROACHES TO SPREAD SFM BY IPLCS

Figure 3. Approaches to recognise and spread Sustainable Forest Management (SFM) by Indigenous Peoples and Local Communities (IPLCs)

5.2.2 LANDSCAPE GOVERNANCE APPROACHES WITH MUCH FURTHER POTENTIAL

Enabling investment facilities to strengthen accountable community organisation

A. This approach engages at the community level to help forest and farm producers build strength in numbers around particular economic activities (including the range of timber, NTFPs and services emerging from SFM). Accountable community organisations are foundational for community forest groups to achieve scale, share information and costs, and improve their negotiating power in markets and policy fora. They greatly improve prospects for developing understanding of the standards required by SFM – and of the various other approaches to make credible claims about SFM by IPLCs. One example of such a facility is the Forest and Farm Facility (FFF) managed by the partnership of FAO, IUCN, IIED and Agricord (Box 9). Finance for the FFF comes from a range of bilateral ODA resource partners and one private sector company. The main strength of this approach is that it is foundational for all the other approaches listed below – and is the basis upon which the sustainability of those other approaches rest. Many toolkits exist to assess and improve organisational leadership, management and accountability, and these approaches work across organisations established for a variety of different ends (i.e. they are equally applicable to rights-based and commercial organisations). In terms of limitations, these approaches are quite intensive of resources in the field at the early stage of organisational development (i.e. before there is a critical mass of accountable community organisations from which to learn). Another limitation is that while these approaches can serve the interests of SFM, they are not directly set up for that purpose, so are best combined with other approaches listed below.

Participatory GPS-enabled mapping of rights

B. This approach helps recognise the territorial existence and rights of forest communities as a starting point for any subsequent recognition of their SFM. Different methodologies for participatory GPS-enabled mapping have become routinely used to secure community forest tenure. Indeed, such approaches are integral to most of the projects funded under the recently established Tenure Facility which is closely linked to community forestry (The Tenure Facility, 2019). Numerous examples include the RFUK's Mapping for Rights programme in the Congo Basin (Box 2). Securing territorial control improves the motivation for SFM by IPLCs. Such approaches are often usefully complemented by support for the protection for local rights in land and natural resources – including in investments – through enhanced land governance to engage effectively with a changing land market and land access. Financing could either be sourced from ODA or be built into mainstream climate finance (including REDD+ mechanisms). The strengths of this approach are that it advances secure tenure, which itself is pivotal for SFM. But an additional strength is that the process of participatory mapping strengthens the accountability of community organisations (and so provides close complementarity with approach a. above). The limitations of the approach are that it is also field resource intensive and while costs are modest, the numbers of potential areas to which the approach needs to be applied are high. Additionally, the process of mapping for rights is inevitably politically charged as resources secured for community groups limit their allocation to other potential claimants. For this reason, political buy-in to the process and its results can be challenging. A final limitation is that the approach often precedes the development of businesses based on the forest resources being mapped – and so must be financed independently of the profits of those businesses.

Locally implemented forest integrity assessments

C. This approach seeks to standardise the way in which local community groups in different contexts can make credible claims about the integrity of their forest and thereby the sustainability of their forest management. The process of regular assessment of forest resources in community territories can strengthen motivation for actions leading to sustainable management. Examples of this approach are now evident in many countries, particularly in Southeast Asia (see Box 4). Finance is typically from locally available ODA – but the amounts needed are typically modest. The two main strengths of this approach are that it builds local capability to assert claims about forest managed by the community and this in turn leads to increased understanding of the local state of SFM and the practices that need to be introduced to improve that state. This is important to build local interest, pride and empowerment around SFM. Limitations include the fact that such approaches depend on prior community tenure claims (such as approach b. above), and do little directly to advance them beyond giving assurance of local interest in SFM. Additionally, the self-assessment nature of the claims made through FIAs have limited credibility in the market – and so might need to be combined with some of the supply chain approaches listed below.

Remote sensing tree cover reward mechanisms

D. This approach uses remote sensing data to improve recognition of instances where forest communities have maintained forest tree cover. It links such recognition (of a community contribution to the public good) with conditional, locally agreed investments. Such mechanisms are becoming increasingly routine. Systems are most affordable and reliable in tropical high forest where it is easiest to distinguish forest cover change using freely available low-resolution satellite data. Various examples of such mechanisms include the Bolsa Floresta Programme in Brazil (Box 3) and the Health In Harmony initiative in Indonesia and Madagascar (Box 15). Rewarding community forest cover maintenance with locally agreed benefits motivates further SFM by IPLCs. Finance can be sourced from public or private voluntary climate finance or national and international ODA. The great strength of this approach is that it directly rewards and thereby incentivises the maintenance of forest cover. Moreover, the rewards that are agreed for forest cover maintenance can be negotiated flexibly with local communities to provide a mix of individual and collective benefits that help discourage individual abuses of the system. Limitations are that the approach again depends on the strength of the existing tenure claims (and is difficult to operate in areas of disputed tenure). Furthermore, while the approach can be used to reward forest cover maintenance, it cannot readily detect or prevent forest degradation (i.e. the removal of particularly valuable species), and so would still need to be complemented by approaches to reduce costs of third-party certification schemes if robust market claims were to be made.

Public community-oriented compliance funds underwriting timber legality/ sustainability assurance systems

E. This approach publicly recognises and sets up funds to mitigate the disproportionate costs per area of forest land that smallholders and communities face in ensuring that community forestry complies with these assurance systems (including the costs of certification). It sets aside public (or even private) revenues to subsidise compliance by those smallholders and communities against agreed criteria. Examples of such approaches include the subsidy programme for communities within the Indonesian SVLK legality assurance system (Box 5), but also various funds set up over previous years in several contexts to support community certification. Financing typically comes from the national public finance, but may also come from ODA or climate finance. The strength of this approach is that it strengthens public recognition of the public goods associated with local community compliance with legality and SFM. It also helps to develop constructive, trust-based partnerships between government and forest communities – moving away from approaches based on enforcement and mutual mistrust. Limitations are that channelling such subsidies or compliance funds requires a high degree of extension outreach which may not be present in many poorer countries. Additionally, the approach relies on what might need to be quite substantial funds and even in middle-income economies such as Indonesia, the scale of need might exceed available resources.
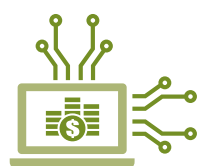
Green ICT evidence-based conditional capital injection systems for community funds

F. This approach matches social and environmental investors with mechanisms that capitalise funds at the community level or community business level and provides ICT verification of the results of those capital injections. Community members (often women) regularly manage village savings and loan associations or other communal fund arrangements. Community businesses often establish equivalent collective savings and loan funds. Examples exist of new ICT mechanisms that allow investors to inject finance into such funds and remotely track, for example, green conditionalities that might be part of the investment deal – such as the Sustainifi tools, used by GreenFi mechanisms developed in Kenya (Box 7). In Peru, new digital technologies, such as blockchain technology, have been used by the Regen Network to issue smart contracts that reward community forest groups who have observably maintained their forest cover, demonstrated through remote sensing, mobile phone and drone footage (Box 17). Equivalent mechanisms have also been developed in support of community forest businesses, such as the Dryad programme in Cameroon, or in public PES systems in Vietnam that are conditional on a community formalising rights, but then provide payments for watershed protection either communally or to individual households in participating communities (Box 18). Finance can come from public sources, or ODA, or even from private or philanthropic groups wishing to achieve particular social or environmental ends. The strength of the approach is that it is founded on and strengthens local communities' own financial management skills and commitment towards resource management and SFM. Furthermore, the approach can accommodate many different external reasons for financing SFM and thereby offers flexibility. The limitations are that building up communities' financial capacity to manage such schemes can be quite resource-intensive if the education base is relatively low. Additionally, verified claims towards SFM that satisfy the primary financing agency may not necessarily have wider credibility in the market and so may still need to be complemented with supply chain approaches that also reduce third-party certification costs.

5.2.3 SUPPLY CHAIN APPROACHES WITH MUCH FURTHER POTENTIAL

Commodity or trading organisation fair-trade certification to offset SFM certification audit costs

G. This approach aims to recognise SFM, distinguish community forest products in the market and pass the cost of any third-party audits on to the buyer through some form of fair trade premium – whether in association with an existing SFM certification scheme or not. Considerable work was done to demonstrate the market demand for timber as a fair-trade commodity and develop three pilots of a dual certification scheme with FSC. Institutional politics and a lack of funding led to the cessation of the pilots following some useful lessons learned – including the need to simplify processes in a complex dual audit (Box 11). Finance for this approach would need to come initially from international ODA, but would then be rolled out through regular private sector investment and trade. The strength of this approach is that fair trade is an existing, well-recognised, market system that consumers already use. The approach relies on (well-established) market demand for products originating from production systems that benefit poor communities – and so is sustainable and non-reliant on project funding. The limitations are that while fair trade approaches might not necessarily wish to apply a 'guilty until proven innocent' approach to monitoring sustainability, any move towards a differentiated trust-based system for communities would directly challenge existing third-party SFM certification schemes. The result is that past attempts have had to settle for dual fair trade/SFM certification which adds further complexity to auditing and limits market scale. The alternative fair-trade model of certifying organisations whose entire product lines are fair trade have not yet involved larger-scale timber or furniture manufacturers – limiting fair-trade production to artisanal products.

Payments for ecosystem services to offset SFM certification costs

H. This approach also maintains the rigour of third-party certification for SFM but with the costs offset to PES, i.e. co-benefits accruing through conserved ecosystem services. Several different co-benefits could be the object of PES, such as carbon sequestration, biodiversity conservation and watershed protection. There have been significant pilots of possible mechanisms to link FSC with biodiversity, carbon and watershed payments (Box 12). Additionally, there are examples such as that mediated by Althelia of using future carbon payments – certified using an existing carbon standard - as collateral for loans aimed at installing more sustainable production systems (Box 13). Adding PES on top of existing commercial arrangements can indeed help motivate SFM by IPLCs. But the systems need to become much more mainstream. Finance for that upscaling might in the first instance come from international ODA before crowding in private sector investors. The strength of this approach is that most ecosystem services (i.e. biodiversity, carbon storage, water and soil conservation) are inevitable co-benefits of SFM – and so there is an immediate complementarity which can be built upon. Furthermore, the market for SFM products also indicates willingness to pay premiums for additional claims on issues such as biodiversity and carbon. Limitations are that there are inherent scale advantages to PES that might favour large-scale operators over community groups (i.e. there is no inherent advantage for PES in community operations). Additionally, the metrics for making additional claims require standardisation and upscaling.

Participatory guarantee systems (PGS) that certify forest production systems

I. This approach introduces some form of SFM into local markets that are normally ignored by international SFM certification schemes. It also aims to reduce costs of SFM certification by using local assessment protocols developed and managed by locally accountable organisations, both producers and buyers. By recognising local SFM methods and building trust between producers and buyers locally, these PGS can help spread SFM into market situations not normally touched by third-party certification schemes. Several early attempts in the community forest sector are now functioning, albeit for NTFPs (Box 14). International endorsement of multiple complementary PGS for SFM might also be possible by some international agency (e.g. the International Family Forestry Alliance). Finance to date has typically come from ODA to establish the schemes and achieve critical mass of engaged producers and buyers – but the scheme can then become self-financing through a small offtake on profits of participating producers. The strength of this approach is that it involves both IPLCs and buyers in its development and thereby builds awareness of, and commitment to, SFM at the local level. Another strength is that PGS schemes can be developed for a wide range of products – including problematic sectors such as fuelwood, charcoal, and indeed timber. The limitations are that the lack of third-party credibility might restrict access to, for example, export markets (although such access is not always necessary or desired). Additionally, PGS schemes work best at local scales where trust can be maintained, and multiple schemes might need to be developed to cover the desired extent of SFM, which would become resource intensive.

Private sector brokers of regenerative investments in community forestry or agroforestry systems

J. This approach involves facilitation or the provision of a matching function between: (i) investor needs to secure product supply or achieve social and environmental goods and; (ii) the production capabilities of specific community forest restoration businesses. Examples of this approach include particular companies such as Ejido Verde in Mexico that acts as a trading intermediary for community groups and attracts investment into long-term forestry production systems such as pine resin (Box 8). But there are also intermediaries such as Earthworm who help to assemble market coalitions of investors who in turn drive expansion of community forestry linked to particular product types such as sustainable teak (Box 16). And in some countries, bank foundations such as the Equity Group Foundation help to link and build the capability of community groups to manage innovative loan products (Box 6). Finance for this approach is almost purely private sector but with some ODA support to project or foundation work. The strength of this approach is that trader know-how and track record are brought in to support IPLC developments of SFM. The financial sustainability of the system is linked to investor returns and so does not depend on fickle project finance. Limitations are that highly skilled market intermediaries are always thin on the ground – especially given the broad number of SFM value chains that struggle for finance. Additionally, there are real market limits to finance that can accommodate the longer-term returns associated with many SFM projects.

Business incubation platforms for value added diversification in agroforestry supply chains

K. This approach promotes value-added diversification in rural areas (e.g. new products based on bespoke timber processing, fibre product development, biomass energy modernisation, and oil and resin use). By so doing, it drives on-farm production system diversification into more complex agroforestry systems that provide resilience to climate and other economic shocks. Many projects that aim to support climate change adaptation or resilience adopt this approach which can be beneficial to the context of community forestry in farmland forest mosaics. New approaches to forest business incubation, which install incubators within umbrella producer, value-adding and marketing organisations (thereby funding their activities out of their profits), are being developed for example by the Forest and Farm Facility (Box 9). The strength of this approach is that the greater the number of value chain businesses that are incubated from a particular forest unit, the greater the ecological, economic and social resilience is likely to be. And if the incubation is carried out by a second-tier organisation that aggregates processes and markets diverse products, the better the incubation, the higher the profits and reinvestment into that incubation process are likely to be. Limitations are that building incubation capacity in that way requires a high degree of existing IPLC organisation, or conversely a longer time frame to build that organisation and capacity where it does not exist.

Investor sponsored community-linked forest disclosure projects

L. This approach seeks to reward companies who can trace the forest impacts of their value chains, including links to SFM by communities. The approach relies on pressure from large investors who formally request disclosure of forest impacts from the companies into which they invest. At present, a system known as CDP Worldwide (formerly the Forest Footprint Disclosure Project) functions reasonably well for downstream retailers, but has had little traction with upstream suppliers who control any direct sourcing agreements with communities in the forest landscape (Box 10). Further work is needed to improve the degree to which disclosure includes information about community forests. Finance comes from a mix of public ODA, climate finance and private sector investment. The strengths of such an approach include the potential reach into the investments of large market actors. Additionally, climate concerns may increasingly require private sector concrete actions on SFM that could be extended to IPLCs. The challenge is that few large-scale corporations funded through large-scale investors ever engage with community supply chains. Even where they do, many companies see current disclosure reporting systems as very weak. Considerable efforts would be needed to tighten the scrutiny of disclosure claims – perhaps in line with the approach below.

Third-party certification of 'green' forest-linked investor funds

M. This approach is not yet in existence but has been suggested by interviewees as the climate crisis deepens and as a development of the forest disclosure project idea. At present, investor portfolio funds tend merely to screen out the worst offending companies that do not meet threshold criteria on environmental management (rarely more detailed than that). As a complement to certifying the forest producer, the idea is to engage leading environmental organisations in certifying the investor – providing audits of gold standard forest impact (forest+) portfolio funds. The aim would be to provide rigorous third-party certification of the forest impacts of investments in a particular gold standard investment vehicle. Finance would probably have to come initially from international ODA. The strength of this approach would be increasing weight for transformational change from climate change concerns. Leading investment groups and companies might wish to credibly distinguish themselves in the market – which could help launch the system. The limitation would be the time that might be required to develop a credible investment standard across competing areas of international interest. Additionally, larger investor and company groups rarely trade substantially with IPLCs so the impacts on the recognition and spread of SFM by IPLCs might be limited.

5.2 RESEARCH AND INVESTMENT NEEDS

Many of the approaches described above have been pursued only in a few scattered pilot locations. Given their potential, there is a need for considerable further investment in them, especially in the refinement adaptation to further contexts, and upscaling of each approach. Our literature review, the interviews with experts that we carried out, and our analysis suggest several areas where further research and investment looks essential.

In further assessing the potential of promising approaches in contexts different to those in which they were developed, there is an ongoing need for greater clarity in the differentiation of different types of community forestry. Community forestry emerges in different land use situations – the forest core, forest edge, farmland forest mosaics and urban forest-linked processing centres – and with different degrees of genuine local control. The promising approaches we have identified have very different potential in these different contexts and categories of community forestry. So as well as analysing context, greater consensus about categorisation will improve the efficiency with which these approaches can be rolled out and used.

Whilst locally accountable organisations are at the heart of successful SFM by IPLCs, such organisation is not just necessary at the local 'first-tier' level. Recent research demonstrates the importance of strong accountable organisations at higher levels, within second-tier regional aggregation, value addition, and marketing organisations, within national third-tier advocacy unions or federations, and even in fourth-tier international alliances. More research into the best means of initiating, structuring and financing those higher tiers of organisation is needed to support the recognition and spread of SFM by IPLCs.

Especially in the area of mapping, there is also a need for research and investment into the highly useful linkages and combinations of data that are possible when participatory GPS-enabled mapping is overlaid with remote sensing data.

Through such linkages, existing remote sensing data can be used both to recognise and spread SFM by IPLCs.

Complementing the above, research on the various approaches that have been used to design reward mechanisms for forest cover maintenance in community forest areas would be valuable. Spreading understanding of the 'radical listening' approaches that have been used, for example in the Health In Harmony initiative, would help to improve the efficacy and impact of potential payment mechanisms – with a view to mainstreaming such approaches through climate finance.

Further research and investment into enabling investment funds is also needed – both to help equip community forest groups with the wherewithal for SFM business development, but also to help subsidise the disproportionately high costs of proving sustainability in community territories. Finding ways of combining national funds that provide general community support, with funds for community adaptation to climate (e.g. through productive diversification) with more specific needs for legal compliance (e.g. in TLAS systems linked to FLEGT), or for certified SFM (e.g. within national REDD+ programmes) could be beneficial.

There appears to be a lot of promise in using new digital technologies to enhance the reliability with which conditional green loans could be fed into existing or new community-level savings and loan funds with credible monitoring of impacts. Further research and investment to develop and mainstream such technologies would also appear to be a high priority.

At a higher level, research could be carried out and initial investment made in rigorous third-party certification of the forest impacts of different investor portfolio funds. This would have the aim of developing a credible gold standard that could provide greater momentum for investment improvement than is generated by the current initiatives for negative screening out of the worst offending companies.

5.3 REACTIONS WELCOME

This report has tried to look at the world from the point of view of the 'unseen foresters' – the forest managers amongst Indigenous Peoples and local communities who, if better recognised, could spread their forest management systems for local and global benefit. Good evidence suggests that when granted local control, IPLCs generally protect forests, better than industrial scale companies do, and even better than many protected areas have. The report has presented our analysis of approaches that could help achieve wider recognition and spread of sustainable forest management by IPLCs. We hope this analysis stimulates reaction – on what we have got right, what we have got wrong, and how to make progress. We would welcome feedback.

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Amazon forest, La Chorrera, Department of Amazonas, Colombia. © Luis Barreto / WWF-UK

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