



Boosting governance in Mozambique's forests

Options for more sustainable forestry among
Chinese timber traders and Mozambican partners

Duncan Macqueen and Mário Falcão



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Produced by IIED's Natural Resources Group

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To contact the authors please write to:
Duncan Macqueen, duncan.macqueen@iied.org

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International Institute for Environment and Development (IIED)
80-86 Grays Inn Road, London WC1X 8NH, United Kingdom
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Acronyms

AAC	Annual allowable cut
AQUA	National Agency for Environmental Quality Control (Agência Nacional para o Controle de Qualidade Ambiental)
CAF	Chinese Academy of Forestry
CAFGoP	IIED's China-Africa Forest Governance Project
CBNRM	Community-based natural resource management
CDM	Clean Development Mechanism
CFCS	Chinese Forestry Certification Scheme
CoC	Chain of custody
DNTF	National Directorate of Lands and Forests (Direcção Nacional de Terras e Florestas)
DUAT	Rights to use and improve the land (direito de uso e aproveitamento dos terras)
EU	European Union
FAEF	Faculty of Agriculture and Forestry, UEM (Faculdade de Agronomia e Engenharia Florestal)
FCPF	World Bank's Forest Carbon Partnership Facility
FEMA	Industrial Forum for the Environment (Forum Empresarial para o Meio Ambiente)
FFA	Agricultural Development Fund (Fundo de Fomento Agrário)
FLEGT	EU's Forest Law Enforcement, Governance and Trade
FSC	Forest Stewardship Council
GDP	Gross domestic product
IIED	International Institute for Environment and Development
IUCN	International Union for the Conservation of Nature
MASA	Ministry of Agriculture and Food Security (Ministério da Agricultura e Segurança Alimentar)
MICOA	Ministry of Coordination of Environmental Affairs
MITADER	Ministry of Land, Environment and Rural Development (Ministério da Terra, Ambiente e Desenvolvimento Rural)
MITUR	Ministry of Tourism (Ministério do Turismo)
MOFCOM	Chinese Ministry of Commerce
NGO	Non-governmental organisation
NTFP	Non-timber forest product
ORAM	Rural Organisation for Mutual Aid (Associação Rural de Ajuda Mútua)
PEFC	Programme for the Endorsement of Forest Certification
PES	Payments for environmental services (also known as payments for ecosystem services)
PROAGRI	National Programme for Agricultural Development (Programa Nacional de Desenvolvimento Agrícola)
REDD+	Reducing emissions from deforestation and forest degradation
SFA	Chinese State Forestry Administration
SPFFB	Provincial Forest and Wildlife Services (Serviços Provinciais de Florestas e Fauna Bravia)
UEM	Eduardo Mondlane University (Universidade Eduardo Mondlane)
VPA	Voluntary Partnership Agreement
WWF	World Wide Fund for Nature

Summary

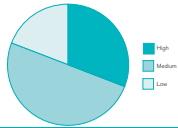
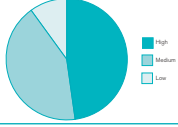

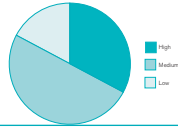
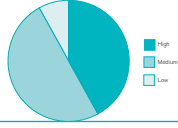



Mozambique is Africa's largest exporter of timber to China. Yet multiple published concerns over the sustainability and legality of that timber trade assert the rapid commercial depletion of future timber stocks, the marginalisation of local forest communities, and the loss of revenue to government estimated at US\$146 million between 2007 and 2013 alone.

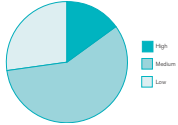
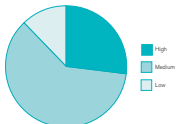
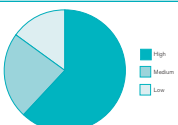
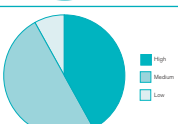
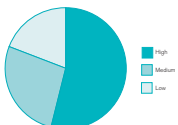
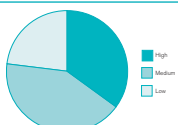
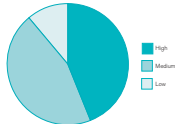
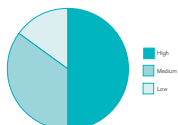
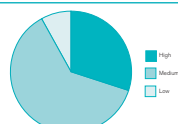

This report takes a step back to explore what options exist for incentives to improve the forest practice of Chinese timber traders and concession holders and their Mozambican partners. Drawing on research in the forest sector, it identifies six potential areas of concern for those operators. It then outlines for each area possible incentives that might be developed to improve forest practice. The set of 18 incentive types may not be exhaustive, but the questionnaire survey of government, civil society and private sector actors did not reveal further major sources of incentive. Table 1 summarises our initial understanding about these areas of concern for operators and possible incentive types to improve their practice. Each incentive type is ranked in terms of its perceived potential for beneficial impact by 26 Mozambique forest experts (five private-sector experts, seven NGO forest experts, five government forest authority staff, and nine forest experts from research or teaching institutions).

Many of these incentive types are generic, in the sense that they are applicable as much to Mozambican operators as to Chinese operators. But there are also some China-specific opportunities. These relate to the characteristics, preferred timber specifications and reputational sensitivities of the Chinese timber market, to emerging Chinese policies based on guidelines and a timber legality verification system, and to the organisational dynamics of Chinese traders and concession holders in Mozambique. In short, there are ways in which a useful China–Mozambique engagement could incentivise change above and beyond what might be possible by working with Mozambican operators alone.

A summary of the multiple different incentive categories is presented below in Table 1. The pie charts summarise a sequential numerical ranking made by the 26 Mozambique forest experts described above. For each expert, their first six ranked options were afforded the status of high priority, the second six ranked options of medium priority, and the final six ranked options of low priority. The aggregate number of times an option was ranked high, medium or low priority forms the basis for the pie chart. In addition, the top six ranked options overall are highlighted in yellow with a description of their numerical ranking.

Table 1. Summary of incentives and their potential for beneficial impact (with the top ranked incentives marked)

Incentive categories (main blue headings) and types (white subtext) for improving the forest practice of Chinese timber traders and concession holders and their Mozambican partners	Practical potential for beneficial impact – in the opinion of 26 Mozambique forest experts
Resource access (concerns over future resource access and stewardship)	
Improving forest resource allocation procedures (eg transparent and competitive concession auctions or pre-identification of available forest areas)	
Introducing more stringent licensing and licence renewal procedures (eg duration and requirements of different operator licences, increasing inspection against management plans prior to approval) Ranked 3rd	
Tightening law enforcement (eg through timber tracking, training of forest law-enforcement officers, customs officers and judiciary) Ranked 1st	
Revenue flows (concerns over future material prosperity)	
Altering revenue-based incentives (eg reducing licence fees for those implementing improved practice, developing differential taxes, and providing subsidies or equipment import duties)	
Restructuring social benefit-sharing mechanisms (eg developing new legislation of delegation of power to forest communities or rethinking the redistribution of 20% tax to communities)	
Developing payments for environmental services (eg biodiversity offsets, voluntary carbon payments and REDD+ payments)	
Business relationships (concerns over conflict-free relationships)	
Developing and enforcing requirements for community consultations and social outcome agreements (eg what is required by companies in terms of agreements with local communities)	
Encouraging business associations and networking platforms (eg best-practice membership groups to improve market efficiencies and dialogue between the private sector and government) Ranked 6th	

<p>Ensuring adequate labour standards (eg commitments to employ local staff, freedom of association among employees and the development of standards for decent work)</p>	
<p>Risk reduction (concerns over security of operating environment)</p>	
<p>Structuring the pace and content of legislative reform (eg developing policy platforms to suit operators with regular consultative processes)</p>	
<p>Setting up clear systems of legality assurance (eg developing China–Mozambique timber legality verification systems and due diligence requirements) Ranked 2nd</p>	
<p>Improving investment procedures and incentives (eg promoting and adapting the tax incentives code and specific forestry rebates)</p>	
<p>Operational capacity development (concerns over operating efficiencies)</p>	
<p>Extension and training of operators in sustainable forest management (eg strengthening extension service delivery, or providing regular training courses in sustainable forest management) Ranked 4th</p>	
<p>Setting up targeted trade-oriented capacity-building programmes (eg research and training in Chinese import requirements and required processing efficiencies, or financial risk assessment for investments)</p>	
<p>Insisting on certain minimum qualified staff or national staff quotas (eg insisting on personnel qualifications with proficiency in forest management/processing and/or Mozambican nationality) Ranked 5th</p>	
<p>Brand development (concerns over reputation with customers)</p>	
<p>Establishing brand community groups and codes of practice (eg membership criteria, brand logo development, system of reporting and memberships exclusion/penalties for non-compliance)</p>	
<p>Affiliation with certification schemes (eg national standards of forest certification or independent standards such as FSC and PEFC)</p>	
<p>Independent national awards for good practice (eg recognition through one-off awards, 'proudly Mozambican', best in category or other national measures of good operator practice)</p>	

From our initial literature review work, a first observation is that, despite many options, there are no stand-out miracle cures for the many ailments with which the Mozambican forest sector has been diagnosed. Each of the incentive options above offers some potential for improving practice. Indeed, more than two Mozambican forest experts perceived each and every incentive type to be high priority. They differed, however, in the incentives which they felt were worth prioritising.

A second observation is that, despite the wide divergence in opinion, there were some incentive types that were more widely perceived to merit prioritisation – and that these involved both ‘carrots’ (positive incentives for good practice) and ‘sticks’ (deterrents for bad practice). Four of these top six priorities involve efforts to apply stronger ‘sticks’:

- **Tightening law enforcement** (eg through timber tracking and training of forest law-enforcement officers, customs officers and judiciary)
- **Setting up clear systems of legality assurance** (eg developing China–Mozambique timber legality verification systems and due diligence requirements)
- **Introducing more stringent licensing and licence-renewal procedures** (eg duration and requirements of different operator licences and increasing inspection against management plans prior to approval)
- **Insisting on certain minimum qualified staff or national staff quotas** (eg personnel qualifications with proficiency in forest management and processing and/or Mozambican nationality).

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Two of the top six priorities involve the creation of ‘carrots’ or positive incentives for good practice:

- **Extension and training of operators in sustainable forest management** (eg strengthening extension service deliver and providing regular training courses in sustainable forest management)
- **Encouraging business associations and networking platforms** (eg best-practice membership groups to improve market efficiencies and dialogue between the private sector and government).

It is worth reflecting on the perceived balance in favour of deterrents for bad practice rather than positive incentives for good practice. This could be due to the political legacy of colonial rule in which the government was perceived to have an ordained right to control resources and had a strong mistrust of more local patterns of control. This might be reflected in the prevalence of ‘command and control’ capacities in government authorities, over and above capacities to offer training and resources for sustainable business development. Alternatively, it could have its root in the perceived economic cost of providing positive incentives versus deterring bad practice – although it is by no means clear that the actual costs of deterring bad practice are in any way less than the costs of incentivising good practice. Perhaps a broader political discussion is required about what the role of government should be – whether as law enforcer or as educator. This would be an important discussion, because an over-emphasis on deterring bad practice can lead to a proliferation of

bureaucracy and corruption which is then difficult to correct and tends to hamper the emergence of a thriving and sustainable forest sector.

A third important observation is that many of these incentive types have useful and important complementarity. In other words, the likelihood of achieving improved practice would be enhanced if several incentives could be developed simultaneously. For example, if there were a reliable independent system of law enforcement that used modern information technology to track timber flows (to tighten up resource access), it might then be possible to organise a business association based around improved practice (to improve business relationships). From there, it might also be easier to establish a brand community group based on that better practice (for brand development) which might make it easier to insist on qualified forest staff (for operational capacity development) with easier negotiation of altered revenue incentives (enhancing revenue flows) and so on. Finding this complementarity should be a key priority within the ongoing forest-law reform.

A fourth observation relates to that law reform process itself. Concerns over illegality led in 2015 to a moratorium on log exports and on the issue of new timber licences. This was then followed by a review of all the forest operators in the country against a set of 31 criteria developed by the Universidade Eduardo Mondlane (UEM). A new draft forest law has been developed, accompanied by a new forest development programme (Floresta em Pé) with the former subject to a national consultation. Together, the new law and forest development programme have the capability to implement almost all of the incentives we describe here. But some will be relatively low cost and quick (eg changing resource allocation rules), while others are much more costly and long term (eg extension and training of forest operators in sustainable forest management). Making sure the Floresta em Pé is adequately financed to take on the longer-term positive incentives will be critical to avoid a reform that simply adds quick fixes and bureaucratic steps to a sector already plagued by rent-seeking on the part of some government officials. There should be an agreed minimum package of long-term positive incentives to be set alongside any short-term deterrents for bad practice.

A fifth observation is that more attention needs to be given to the economics underpinning each of these options. For example, the current oversupply from Mozambique of precious timber species into specialist markets for top-quality cabinet making and musical instruments is driving down prices and reducing potential returns to Mozambique (which probably has a sufficient remaining stock of such species to make a readjustment feasible). Introducing quotas and readjusting taxes for such species could be in the long-term interests of Mozambique, but would require further detailed economic analysis. Similarly, the former ban on the export of unprocessed logs of precious species is widely circumvented. It might better be replaced with either a blanket log export ban or a well-conceived gradation in log export taxes. But again, this would require further economic analysis.

Mozambique still has abundant (though rapidly diminishing) forest resources. Putting in place a set of complementary incentives for timber operators to improve the sustainability of their practice (economically, socially and environmentally) would be a timely component of the current legislative reform process. The priority now is to broaden the discussion of what should be included in the new forest legislation through a thorough process of discussion with Mozambican and Chinese forest operators. An immediate starting point should be to equip the newly formed enforcement agency, the National Agency for Environmental Quality Control (AQUA) with a modern internet-based data system that could monitor real-time flows of timber and prevent easy circumvention or bribery at law-enforcement checkpoints. To this could be added a range of more positive incentives to build the capacity of operators to improve their technical capacity for sustainable forest management – with benefits in revenue both to the companies involved and to the country as a whole.

Introduction

China's investment and trade in Africa's natural resource sectors have significant implications for Africa's forests. Many investments are in forested or woodland areas, some directly engage in logging and others, such as mining, infrastructure and agribusiness, use timber and affect forests. IIED's China–Africa Forest Governance Project (CAFGoP) aims to develop evidence, capacity and joint action for improved Chinese investment in Africa's forests. This study aims to contribute by mapping options for incentivising better practice among Chinese forestry companies and timber traders in Mozambique.

In the forestry sector, China has become a major export destination for timber-rich African countries in the Congo Basin and in southern and Eastern Africa. By one estimate, 75 per cent of Africa's timber exports are destined for China (Canby *et al.*, 2008). In 2013, Mozambique became China's biggest supplier of African logs. Since 2007, China has on average been the destination for 93 per cent of Mozambican timber exports (EIA, 2014).

While African timber imports to China constitute only a small fraction of China's total timber imports (2.8 per cent by volume and 5.2 per cent by value) there is an upward trend (Sun, 2014). There have been published concerns over the sustainability and legality of a portion of this timber trade in Mozambique (Barnes, 2001; Reyes, 2003; MacKenzie, 2006; MacKenzie and Ribeiro, 2009; Egas *et al.*, 2013; EIA, 2013, 2014). While unsustainable or illegal logging accounts for only 9 per cent of the net annual deforestation rate in Mozambique, there are also concerns over the potentially complete depletion of commercial species over the next 15 years. For example, more than half the volume of the commercial species harvested belongs to just three species (EIA, 2014): *Afzelia quanzensis* (chanfuta), *Pterocarpus angolensis* (umbila) and *Millettia stuhlmannii* (jambirre or panga-panga) – and 90 per cent of Chinese timber exports are restricted to just five species (including also *Combretum imberbe* (mondzo), and *Swartzia madagascariensis* (pau ferro). Based on customs import and export data, the rate of harvesting for these species exceeds even the higher limit of Mozambique's annual allowable cut (AAC). Associated loss of revenues (estimated at US\$146 million between 2007 and 2013) are also depriving Mozambican communities of tax revenues of approximately US\$20 million between the same periods.

The significant contribution of logging to the alarming loss of forest cover in Mozambique (see Figure 1) is behind the current initiative to reform the forest law in Mozambique and develop a new body of legislation for 2016–2026: Política e Estratégia de Florestas (Forestry Policy and Strategy) 2016–2026. Concerns over illegality led in 2015 to a moratorium on log exports and on the issue of new timber licences. This was then followed in early 2016 by a review of all the forest operators in the country against a set of 31 criteria developed by the Eduardo

Mondlane University (Ministry of Land, Environment and Rural Development, 2016). The new forest law is to be accompanied by a new forest development programme (Floresta em Pé) with the former subject to a national consultation. Changes have already been made in the agency which enforces forest law in Mozambique, with the National Agency for the Control of Environmental Quality (AQUA) taking on from 2016 newly broadened law-enforcement activities that were formerly the preserve of the national directorates of forests (DINAF), land (DINAT), land-use planning (DINOTER) and environmental control (DINAB/MITADER).

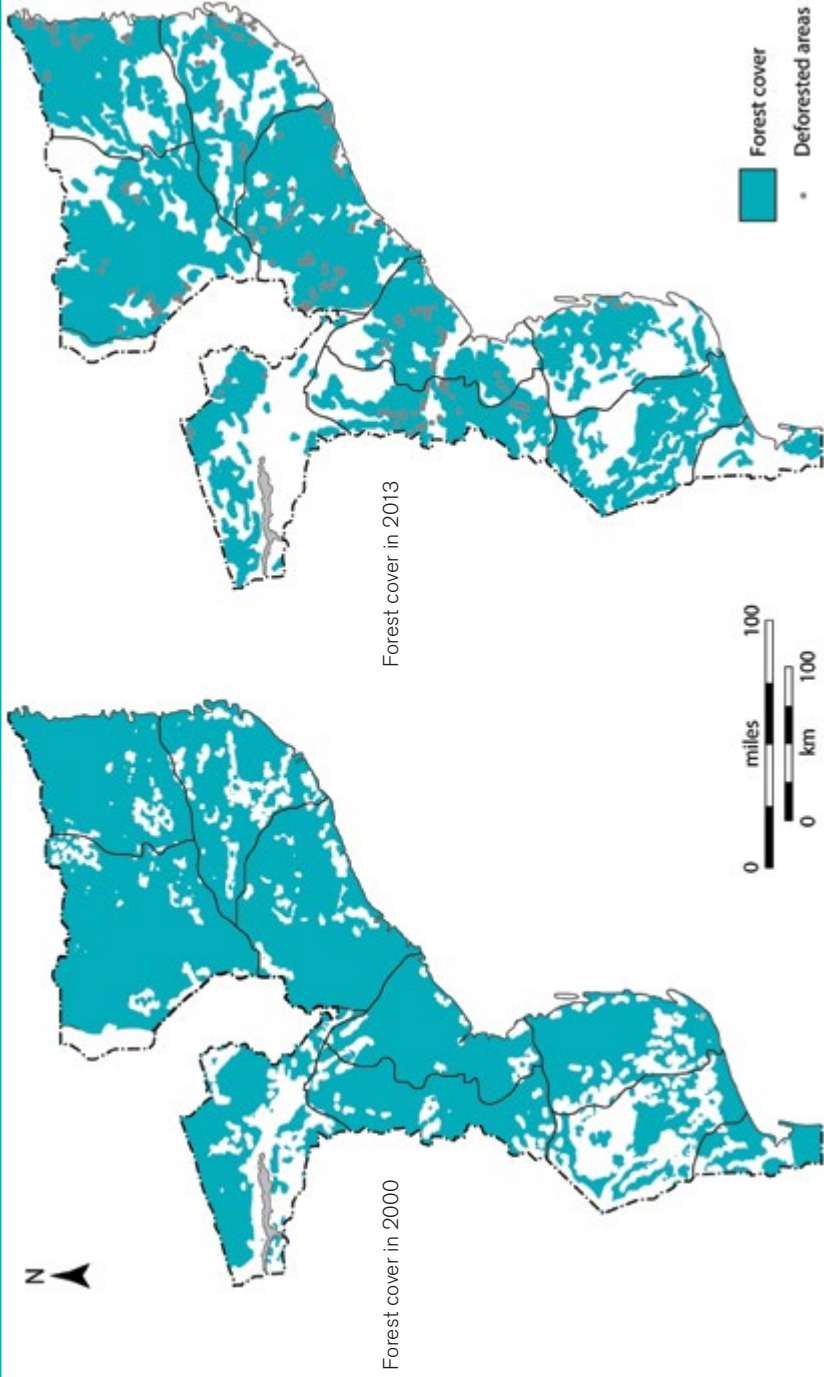
Chinese companies operating within Mozambique are not the sole cause of forest loss and unsustainable logging. Indeed Chinese companies within Mozambique are not uniform. For example, research in Cabo Delgado found large private concession companies alongside many traders operating with or through simple licences (Ekman *et al.*, 2013).¹ The established practices of these different types of operator will inevitably differ. The intention here is not to procure evidence for malpractice, however, but to explore the range of incentive options that would drive better practice, from whatever the company's starting point.

To find such incentives, one must tap into the full spectrum of what human individuals ascribe value to. While forest businesses are legally framed to act as individuals, it is the individuals within them whose motivations open opportunities to improve practice. It is these motivations that incentives must target to improve practice. And where one incentive might shift the ground a little, it is a constellation of complementary incentives that are most likely to make significant progress. That is what this report sets out to find.

But implementing incentives will require close cooperation between China and Mozambique. Both countries stand to gain from such a cooperation in the long term. China's timber industry will benefit, and Mozambique's economy needs the sort of investment that China can make. Despite lower commodity prices and a weaker global environment, Mozambique's economic prospects remain positive given planned massive investment in natural resources. Yet in 2014, the Mozambican gross domestic product (GDP) was equal to US\$439 per capita while the regional average was US\$2,274. This is the case even though Mozambique is endowed with relatively abundant land, water, forest and wildlife resources that hold promising prospects for development. While GDP growth averaged 7 per cent over the last five years, Mozambique's per-capita income (US\$624 in 2014) and human development index (178 out of 187 countries) remain low. There is a need to continue implementing policies that support fiscal sustainability, infrastructure investment, and inclusive growth – both outside and within the forest sector. Over the medium term, efforts to develop a sound framework to manage natural resource wealth should be stepped up.

1. Simple licences are five-year licences for extraction of up to 500m³ per year of timber, ostensibly from mapped areas using simple management plans. Simple licences are approved at the provincial level (Nhancale *et al.*, 2009).

Figure 1. Forest cover change between 2000 and 2013



Source: simplified and redrawn from higher resolution maps by DNTF

1.1 Objective and research questions

This study aims to map out possible options for incentives to improve the practice of Chinese forestry companies and timber traders and their Mozambican counterparts. It scopes a broad set of potential options including, but not restricted to, financial incentives.

Specifically, the study considers:

- What theories of how individuals pursue 'value' offer a useful framework for exploring the full spectrum of human and business motivation, and what incentive types might therefore be designed to tap into those motivations to improve operator practice?
- What specific examples of incentive development for private-sector engagement in sustainable forest management and responsible timber trading have been attempted internationally and with what justification?
- What types of incentives have been tried or might be applied to Chinese forestry companies, timber traders and their Mozambican partners? What Mozambican contextual factors might encourage or discourage the use of particular incentive types?
- What helpful or necessary complementarities between different incentive mechanisms have been employed or are likely to be possible and effective?
- What options for incentivising better practice might be advanced for Mozambique as a result?

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The last question in particular was the subject of a questionnaire survey managed by the Eduardo Mondlane University (UEM).

1.2 Methodology

A desk study phase launched this particular report. A literature review helped to develop a framework within which to explore different incentive types. The literature review also assessed a wide range of incentives for better forest practice that have been used internationally – including legislative and market-based mechanisms (including those linked to climate/carbon payments) – within the framework described above. Having developed the framework, a further desk review was undertaken to assess what has already been tried in Mozambique and with what results, to thereby assess workable prospects for each potential type of incentive within the specific context of Mozambique.

A participatory review process with local forest experts was then commissioned by UEM during late 2015 and early 2016. The aim here was to expose the initial options framework to an in-country prioritisation exercise to gather professional feedback on, and priorities for, the main proposed options for incentivising better practice. The experts were selected to capture the following features: knowledge of the current situation of the forestry sector; direct involvement in forestry sector activities; and geographical country representation.

The target population was defined as government technicians (environmental experts), technicians working for civil society organisations dealing with environmental issues, and the private sector (concessionaires). In this study, the sample unit was a technician or forest expert. For the data collection purpose, a sampling method involved an intentional selection of 66 experts. The questionnaire was sent by email to 66 forestry or environmental experts and about 39 per cent of those experts filled in and returned them. The distribution of questionnaires by institution and by province is indicated in Tables 2 and 3.

Table 2. Distribution and return of questionnaires by type of institution

Institution	Submitted questionnaires		Filled questionnaires	
	Number	%	Number	%
Government	24	36.4	5	19.2
Private sector	14	21.2	5	19.2
NGOs	14	21.2	7	26.9
Research and teaching	14	21.2	9	34.6
TOTAL	66	100.0	26	100.0

Table 3. Distribution of completed questionnaire by province

Province	Institutions				TOTAL
	Government	Private sector	NGOs	Research and teaching	
Maputo	5	1	2	2	10
Sofala	3	4			7
Zambézia	1			1	2
Manica				1	1
Nampula		1			1
Cabo Delgado			3		3
Niassa				2	2
TOTAL	9	6	5	6	26

The survey was carried out from June 2015 to February 2016 – and somewhat delayed by the ongoing reform of the forest law with which many forest experts were fully engaged. Both Portuguese and English were used depending on the preference of the respondent. All completed questionnaires were reviewed and necessary clarifications were made by telephone or face to face when it was necessary. Common problems were discussed and clarified through a telephone conversation with the expert who had completed the questionnaire. In conducting the survey, some experts were not comfortable being asked about the incentives. To overcome the experts' resistance to completing the questionnaires, a detailed explanation of the academic objectives of the work was made over the telephone.

During the process, the in-country Mozambique team for the CAFGoP project also identified local people 'connectors' who will be key to obtaining access to local networks of Chinese timber operators. Existing consultants – who included a World Wide Fund for Nature (WWF) consultant working with Chinese companies and a Chinese member of the IIED team – will in the future engage Chinese companies in Mozambique with the results of this review process to probe further what options might be preferable to those operators.

Once the survey was completed, data were analysed. A descriptive account of each area of incentive was prepared. This was accompanied by two assessments: (i) a subjective assessment by the authors of the report on the likely impact on improved practice and its feasibility within Mozambique; and (ii) the degree to which it would bring about benefits for livelihoods and forests – with a subjective assessment of priority. To this was added the expert view of the 26 Mozambican forest experts. Their views were captured in pie charts ranking the numbers of experts who thought that particular incentive was high, medium or low priority based on its likely impact on improving operator practice. Thus, in each sub-section in sections 2 to 7 a box is presented with these two assessments.

Note that in each box the four perceptions of the authors are scored with a number of square symbols giving a notional gradient from 'low' to 'high' – thus a small number of symbols, e.g. ■■ means 'low' and a large number of symbols, e.g. ■■■■■■■■ means 'high'.

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Dialogue with operators and decision makers has continued through the research process. The intention now is to use this report to stimulate a process of operational feedback through national dialogue. For this it will be necessary to engage more formally with both Chinese forestry companies and timber traders and their Mozambican counterparts. Using the links identified above, IIED will seek to broker dialogue sessions to explore different incentive options with both traders and government decision makers.

1.3 Analytical framework

This study develops a framework of incentives derived from theories of what individuals (and by proxy, their businesses) ascribe value to. This framework has evolved from a range of different authors including those concerned with values for human development and how the advertising business links those values to business practice (Maslow, 1943; Leuret, 1961; Sen, 1999; Valkratsas and Ambler, 1999; Alkire, 2002; refined in Macqueen, 2013; see also Table 4). Such research asserts that there are at least six value clusters that motivate both individual action, and the actions of legal entities that act as individuals (such as companies and nation states). These value clusters are listed on the left-hand column of Table 4. The rationale for using an approach based on these value clusters is that Chinese timber traders, concession holders, and their Mozambican partners are likely to pursue a number of differentiated value clusters in their business operations. Because of this, these value clusters can provide entry points for incentives to improve their business practices.

The full suite of possible entry points are listed in the second column of Table 4. They are based on what Chinese forestry companies, timber traders and their Mozambican partners are likely to be concerned about (ie what they value). For example, these operators are likely to have concerns over at least six areas of their businesses – which are likely to correspond to the concerns of those managing those businesses:

- Resource access
- Revenue flows
- Business relationships
- Risk management
- Operating efficiencies
- Branding and reputation

By starting with this comprehensive assessment of possible points of engagement, it will be possible to survey the full range of options for incentives that might be developed before prioritising (in a collaborative manner) those options that are likely to have greatest traction in Mozambique, discarding less realistic options within the Mozambican context.

Through a comprehensive survey of possible incentives, it will also be possible to detect how seemingly quicker routes to incentivising good practice (eg climate finance) might be complemented by more difficult but nevertheless necessary deeper and longer-term political reforms. This is important because it is likely that a combination of different but complementary incentives will provide the highest chance of shifting practice, rather than any single incentive on its own. Moreover, different types of incentive might be required to change different elements of Chinese operator practice (for example, legality of operations, sustainability of operations, labour practices within operations or community benefits from operations).

The framework used in this study is informed by research that shows a marked **polarity** in the ways values are pursued (between self-interest and common good – see Schwartz, 1992). Both individuals and the legal entities that act as individuals (such as companies and nation states) can be motivated purely by self-interest – but this need not necessarily be the case. It is possible – with the right incentives – to shift motivations towards common goods that still allow the individual (including a company or state) to achieve value goals.

Moreover, systematic research has shown that there is a distinct **compatibility** between the ways in which the values are pursued (Crompton, 2010). For example, self-interested pursuit of one value reinforces self-interested pursuit of other value categories and vice-versa. In short – the more incentives can direct individual, company and state practice towards the pursuit of common good in one area (eg care for nature) the more likely it is that those individuals, companies and nation states will pursue common good in other areas (eg affirmative relationships and livelihood security). The framework therefore attempts to go beyond the identification of incentives that might be effective in terms of the self-interest of

Table 4. Framework of options for incentivising better practice

Options		Polarity		Incentive possibilities	
What individuals value	What businesses need	Self-interest (to be moved away from)	Common good (to be moved towards)	Range of incentives towards common good – licensees	Range of incentives towards common good – timber traders
Care for nature	Resource access	Land and resource grabs	Shared rights and responsibility	Resource rights, licence requirements, law enforcement	Licence requirements, due diligence procedures
Material well-being	Revenue flows	Unfair private profit	Fair benefit sharing	Financial incentives, clearer rights and benefits, PES schemes	Stable supply agreements with better operators
Affirmative relationships	Business relationships	Corruption underpinned by competition	Justice backed by collaboration	Social outcome agreements, association platforms, labour capacity development	Association platforms, reporting requirements
Livelihood security	Risk management	Unstable operating environment with discretionary enforcement	Stable legality backed by reliable assurance systems	Collaborative legislative reform, legality assurance, with accessible incentives	Collaborative legislative reform, legality assurance
Fulfilment of potential	Operating efficiencies	Imported self-sufficiency	Local capacity building	Technical extension, trade advice, qualified staff	Trade advice
Sense of identity	Branding and reputation	Invisible or 'greenwash'	Inclusive, green, public profile	Brand communities, affiliation to certification schemes, awards for good practice	Affiliation to brand communities, awards for good practice

Chinese timber traders, concession holders and their Mozambican partners – towards incentives that might be both effective and reinforcing of the common good (both for them and the Mozambican nation as a whole).

In each of the sections that follow, a set of three potential incentives is explored to improve the practice of Chinese timber traders, concession holders and their Mozambican partners. Lessons from international best practice are woven into an analysis of any historical attempts within Mozambique to implement these incentives. From that assessment, the authors make a summary assessment of the likely effectiveness of different incentive types in the Mozambican context.

Resource rights

Concerns over future resource access and stewardship are likely to be a powerful driver for the behaviour of Chinese timber traders, concession holders and their Mozambican partners. Deciding who gets what resource rights is, therefore, a crucial lever to improve forest practice. In Mozambique, as across many African countries, resource rights can be secured through local standards of legal, customary, informal or outright illegal practice (Weng *et al.*, 2014). The way in which resource rights are allocated to Chinese timber traders, concession holders and their Mozambican partners is therefore a key point of engagement that might be used to improve forestry practices.

The Land Law of 1997 defines land as state property (inferring the status of a 'public good'), but also recognises customary ownership systems through which self-defining communities can delimit their community areas, obtaining rights to use and improve the land (known as DUAT: *direito de uso e aproveitamento dos terras*). The Forest and Wildlife Act of 1999 and Regulations of 2002 divide natural forest land into broad categories (all ultimately vested in the state as 'public goods'): productive forest, multiple use areas and protected areas.

- **Productive forest:** areas that contain high-value timber (26.9 million ha within Mozambique). Such areas are allocated through two main instruments (Johnstone *et al.*, 2004): (i) long-term concessions that are open to all registered entities or individuals contingent on the development of a management plan over 50 years and the installation of a processing industry inside the country; and (ii) short-term simple licences, open to national citizens only, for areas of up to 10,000 ha subject to an area-based tax and contingent on the development of a management plan for a period of up to five years. The decisions on **concession** allocation are made by the National Directorate of Lands and Forests (DNTF). But in large applications beyond 100,000 hectares, allocation decisions are taken by the council of ministers. Concession allocations are usually large scale – several thousands of hectares in extent. Obtaining a concession requires considerable investment to prepare: timber resource inventories, topography maps, technical and industrial installations to process timber within the concession area, a favourable opinion of community residents in the area (consultation process), a successful negotiation process with the holder of the DUAT for the area in question (if such exists) and a management plan (to be presented within 180 days of public announcement of the application). Decisions on **simple licence** allocation may be issued by the Provincial Forest and Wildlife Services (SPFFB) that fall under DNTF. Simple licences are restricted to Mozambican nationals, and have simpler administrative procedures, albeit revised through Decree 30/2012 (Republic of Mozambique, 2012) to re-emphasise the management plan and favourable opinion of community residents in the area (consultation process) (Nhantumbo *et al.*, 2013). Chinese operators may and do trade with simple licence holders.

- **Multiple use areas:** characterised by forests and other wooded formations, in which there are other competing land uses – sometimes the forest is of high commercial value but limited in area. Within these areas, DUATs are issued for different land uses. These multiple use areas cover over 14 million ha and are the areas in which most rural inhabitants live. As a result, the resources are always under imminent conversion to other uses such as agriculture and infrastructure development. It is within these areas that much of the new forest plantation has been designated for allocation. Plantations are open to all registered entities or individuals (including Chinese companies) who are able to acquire land-use rights (DUAT) and carry out an environmental impact assessment, unless the plantation is for conservation purposes. For production plantations, there is also a requirement to establish processing capacity. Within this forest category, there are also opportunities for communities to establish agroforestry systems, biomass energy plantations and simple-licence timber operations.

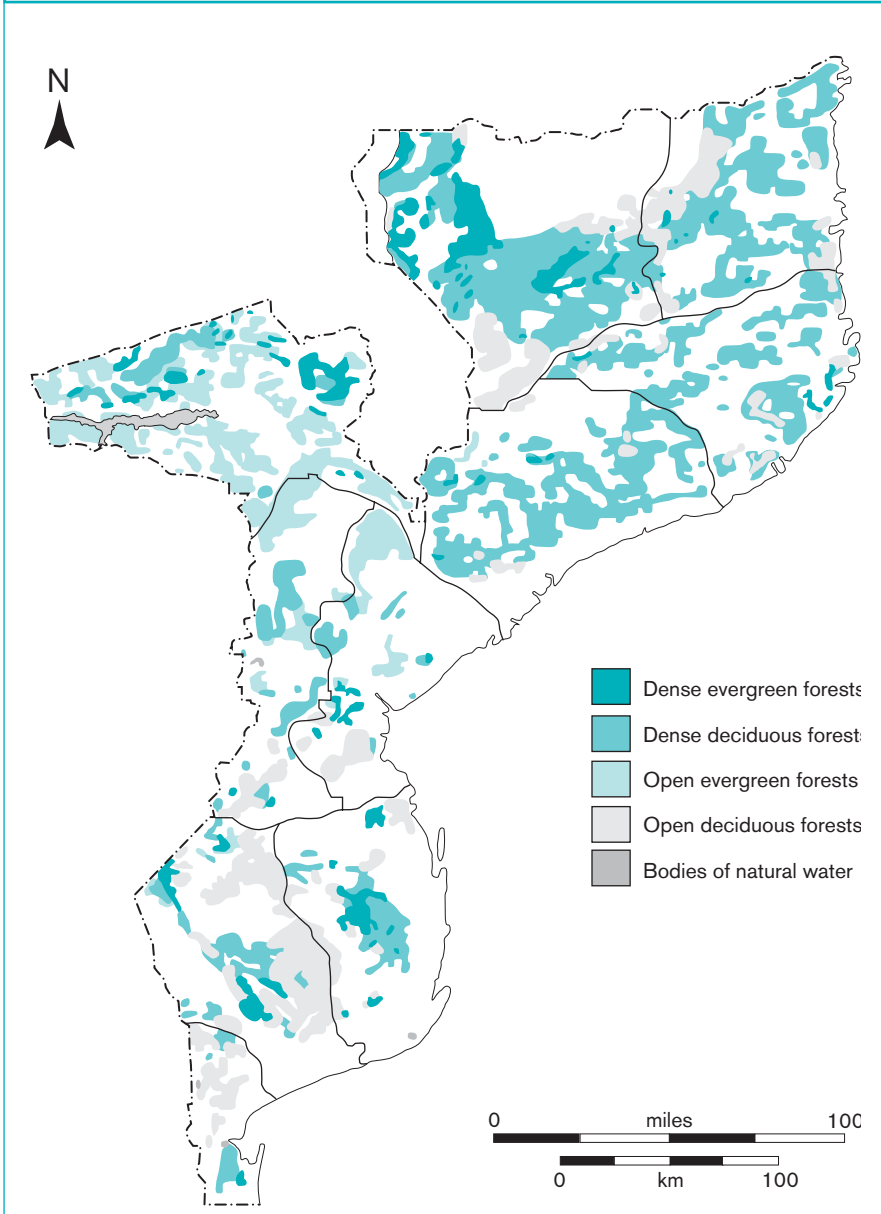
- **Protected areas:** divided into wildlife-rich areas that fall under the jurisdiction of the Ministry of Tourism (MITUR), such as game reserves, hunting areas and national parks; and forest reserves that fall under the jurisdiction of the Ministry of Agriculture and Food Security (MASA). Irrespective of this division and the management responsibilities split between MITUR and MASA, royalties are mainly generated by private-sector operations. In some cases, communities are directly involved in managing these areas. Across the country, 13 million ha of forests are located in protected or conservation areas, which include wildlife-protected areas covering 16 per cent of protected areas. Because biodiversity conservation is linked with tourism in Mozambique, the government delegates to the private sector to run businesses in this area and generate income, but within a framework of conservation legislation. There have been reports of illegal resource extraction from protected areas – which need to be the subject of agreed public–private prohibition.

Much of the practice of Chinese timber traders, concession holders and their Mozambican partners relates to the areas of productive forest. Since 1999, forest concessions (rather than simple licences) have always been seen as the main public instrument to promote sustainable forest management in Mozambique. Concession allocations included Chinese operators in Zambézia, Sofala, Tete and Cabo Delgado.

In 2015, there existed approximately 906 forestry operators in Mozambique either under simple licence or concession (18 per cent were forest concessionaires and 82 per cent simple licence operators – currently called simple licence concessions). The current distribution of the operators by province is indicated in Table 5. By December 2015, there were 165 concessions covering more than 7 million hectares of forest, corresponding to some 70 per cent of the total estimated area that could be available for long-term concessions. The number of existing concessions by province is also given in Table 5.

Two years ago, the government decided to convert simple licence operators into simple licence concessions for areas up to 20,000 ha for a period of five years and this process is still ongoing

Figure 2. Spatial distribution of productive forests in Mozambique



Source: simplified and redrawn from a higher resolution map by MINAG-DNTF (undated)

Table 5. Number of forest operators by forestry regime and current position in 2015

Forest regime	Type of operator	Province										Total	
		Cabo Delgado	Niassa	Nampula	Zambézia	Sofala	Gaza	Tete	Manica	Inhambane	Total		
Forest concessions	The application is under government analysis	5	0	4	2	0	0	0	0	0	0	0	11
	Not working in 2015	7	0	2	2	9	0	0	0	0	0	0	20
	Working	31	8	5	49	13	0	14	8	6	6	134	
	Total	43	8	11	53	22	0	14	8	6	6	165	
Simple licences	The application is under government analysis	1	0	0	1	0	0	0	0	0	0	0	2
	Not working in 2015	5	8	17	0	39	0	90	12	3	3	174	
	Working	34	14	61	115	36	24	147	104	30	30	565	
	Total	40	22	78	116	75	24	237	116	33	33	741	
	Total	83	30	89	169	97	24	251	124	39	39	906	

Source: Falcão *et al.* (2014)

A number of options exist to create incentives for better practice among Chinese timber traders, concession holders and their Mozambican partners. These refer mainly to the first two categories described above. Most Mozambican forests outside protected areas have been or will be selectively harvested – so it is essential to optimise the distribution benefits (economic, social and environmental) from such harvesting. Previous meta-analysis of more than 100 publications shows that timber yields in tropical forests decline by about 46 per cent after the first harvest – but can subsequently be sustained at this level, along with 76 per cent of carbon in once-logged forests and 85–100 per cent of mammals, birds, invertebrates and plants (Putz *et al.*, 2012). Accepting the ‘primary forest premium’ of the first cut, and then managing for lower but sustainable yields in subsequent harvesting, is a key foundation for options to improve practice.

The options we explore in this section have to do with changing the terms and conditions of concession and simple licences (based on multi-country experience gained from the literature – see Boscolo and Vincent, 2000; Gray, 2000; 2002). Options include the introduction of different categories of forest-land allocation and more streamlined, better-registered and competitive allocation towards management entities offering a track record of good practice (Section 2.1). They also involve incentives through renewal based on performance (Section 2.2) and through improving arrangements for monitoring and enforcing performance conditions (Section 2.3).

2.1 Forest resource allocation procedures

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Resource allocation rules are of the utmost importance because governments (if they honour their responsibility to keep lands and forests as ‘public goods’) have a duty to devise concession categories and select the forest management units that would implement better practice in economic, social and environmental terms (Karsenty *et al.*, 2008). Within the current forest law reform process there is an opportunity to rethink the current large concession/simple licence split, in which the economic advantages of the simple licence drive operators towards that less sustainable option. It might be preferable to maintain the large concession model but replace the existing simple licence with some form of long-term community concession. This would spread benefits to communities with customary land rights by introducing a new category of forest-land allocation that would force national or international forest companies to negotiate timber harvesting directly with them (and with profits accruing to communities at market rates to provide a powerful incentive for resource management). Any subsequent laws on log export bans or taxes for different species categories would still obviously remain in force.

Under the existing forest legislation, the problem is that compared with company representatives, government officials lack information. They lack information on: (i) companies’ business models; (ii) the potential economic rents from harvesting activities; and (iii) the costs associated with implementing legislative requirements. Company representatives are likely to trumpet their reputation for best practice, downplay likely revenues, and play up the likely costs of legal compliance. Where decision-making processes are opaque, there is the additional risk of corrupt incentives being offered to secure resource rights.

This information asymmetry between public–private representatives undermines responsible decisions over forest resource allocation. One way to counter this is to establish competitive bidding systems for forest management units – weighted both on technical criteria (with elimination thresholds) and on financial criteria. To avoid ‘gaming’ that comes from weighting of technical and economic criteria, it is best to insist on technical pre-qualification (a binary decision based on the applicant meeting certain technical standards or, in the case of community concessions, have a track record of land occupation) followed by bidding on economic criteria for commercial companies. Various countries have implemented such systems, including Brazil, Cameroon and Peru (Karsenty *et al.*, 2008). Companies usually bid through offering a ‘bonus price’ additional to required area-based or product-based fees. This reduces the information asymmetry by forcing companies to declare their technical capabilities and track record and make their best financial offer (based on their assessment of likely revenues and costs). In the event that required area-based or product-based fees are too low, the ‘bonus price’ bids would likely be higher, or vice versa, reducing revenue loss through inappropriate low-fee structures or highlighting excessively high-fee structures. This could lead to adjustments towards more realistic fee structures over time (Gray, 2000).

At present, there are no stipulations that concession and simple licence application processes should require competitive bidding: neither under the Forest and Wildlife Act (Law 10/99) of 7th July (Republic of Mozambique, 1999), nor under Decree 11/03 of 25th March 2003 amending Decree 12/2002 on Forest and Wildlife Law (Republic of Mozambique, 2003), nor under the regulations of the Forest and Wildlife Law through Decree 12/2002 of 6th June 2002 (Republic of Mozambique, 2002).

Introducing a process of transparent and competitive forest resource allocation in Mozambique would be highly likely to reduce incentives for corruption, increase the financial returns from forest harvesting, and improve forest practice in economic, social and environmental terms. Companies committed to better practice in service of the public good would more likely be favoured under such a system – although it is unlikely that the changes would shift control towards local communities.

Whether competitive forest resource allocation in Mozambique is a viable option, however, is questionable for a number of reasons. First, it requires accurate mapping of prospective forest-management units – and a process of forest inventory to advertise the offer – that DNTF might have some difficulty in achieving. Second, many (if not all) of the more productive forest-management units within Mozambique have already been allocated, including to Chinese timber traders, concession holders and their Mozambican partners. While options exist to re-advertise expired or cancelled concessions, the quality of the remaining forest inventory in these areas would need to be verified. There is some scope for such procedures in the revised simple licence system, but it would take a major effort by DNTF to map out prospective forest-management units and open them up to transparent bidding.

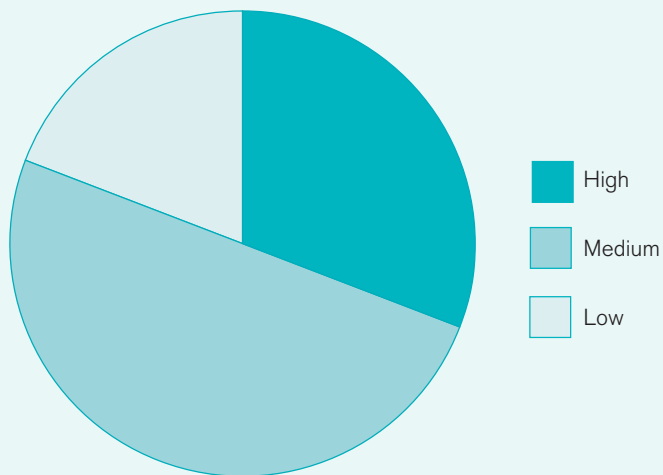
Past attempts at raising the issue of competitive concession auctions within Mozambique did not meet with a positive reception from DNTF's predecessor, the then National Directorate of Forestry and Wildlife (DNFFB) staff (Macqueen and Bila, 2004). In part, this was because these attempts came at a time when a proposed tax increase on commercial species was being heavily contested by the forest industry. With new staff in place, it may be possible to revisit this issue. Nevertheless, while this option might pave the way to better practice by Chinese timber traders, concession holders and their Mozambican partners in new concession allocations, it is unlikely to have much impact on established concession holders. It will also have little immediate effect on Chinese traders who are sourcing timber primarily from simple licence holders – although within a five-year period this would change.

Box 1. Option: improving forest resource allocation procedures

Perception of the authors

Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
*****	**	*****	****

Option priority as perceived by 26 Mozambican forest experts



2.2 Licence responsibilities, duration and renewal

Optimising the responsibilities, duration and renewal process for resource access is a second critical means of incentivising better practice. Concession licences in Mozambique have been granted for up to 50 years over very large areas. Yet long licence duration is now believed not to be a positive incentive for improved forest practice. Experience of long licence periods over large areas from around the world shows that many concession holders liquidate rather than manage the resource, because of strong internal discounting rates when calculating net present value (NPV) of logging profits (Boscolo and Vincent, 2000). When growth rates of forests in terms of volume and value are low (as in Mozambican miombo forests) and below the rates of return on other investments, concessionaires have no incentive to invest in managing the forest (eg through reduced impact logging or respecting minimum diameter limits). Instead, they have every incentive to liquidate the forest and invest the proceeds elsewhere where they can get a higher rate of return (Gray, 2002).

In their empirical test simulating concessionaire behaviour, Boscolo and Vincent (2000) demonstrate that one effective way of improving concessionaire practice towards sustainable forest management is to reduce licence duration and scale and introduce performance-based renewal conditions. There is some evidence from countries such as Indonesia that this works (Gray and Hadi, 1990). Having the performance evaluated by independent third-party observers (such as Global Witness in Cambodia, Cameroon and the Democratic Republic of Congo) has further improved the transparency and public accessibility of information (Karsenty *et al.*, 2008). The rationale is simple. With a significant investment made in management planning and processing, companies are likely to value continued resource access highly and therefore have a strong incentive to meet performance standards.

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The way forward might lie in 'new style' forest concessions (both for private forest industries and forest communities as described in Section 2.1). The aim would be to enforce smaller annual coupes or blocks (a forest area where timber has or will be harvested), which are more regularly assessed, but with much more complete utilisation of wood – both primary and secondary processing. This would also include fuel from species not in demand for commercial timber – with the overall aim being to prevent the coppice from the most valuable species being suppressed by the shade of the less valuable trees, as is the case in current selective felling regimes. The logical conclusion is that the area given under concession (or at least the area opened annually for cutting) could and should be greatly reduced. Tax incentives to establish value-added processing near the concession site and better enforcement of legal compliance would obviously be necessary to encourage operators to put in the higher level of investment that would be required to run such smaller concessions. Nevertheless, figures from countries such as Ghana show that wood used in furniture parts generates 50 times the employment compared to wood used in basic sawmilling, so this approach need not lead to fewer jobs or less export value. But a huge transition that realigns many incentives would be required – including special measures to promote use of timber in the domestic market – without which the industry will have trouble taking off (see Sun *et al.*, 2008).

Beyond the issues of concession size, duration and forest-use requirements are the issues of forest management. Most international assessments show that reduced-impact selective felling is more not less profitable than conventional logging, mainly because it reduces timber losses in the forest. The 100 per cent inventory required a few months before actual logging operations allows for more targeted marketing of 'difficult' species, which are subsequently cut if there is a contract, or left in the forest if there is none. But reduced-impact selective felling of this type changes cost structures (more costs up-front), which many operators do not like. For that reason, site inspections and strict licence-renewal procedures need to be enforced to drive operators towards fronting initial inventory costs – which in the long term may increase their profitability.

Would tightening of concession renewal against performance standards work in Mozambique? Already, concessionaires and simple licence holders have to make an annual application for a felling licence, checked against the management plan submitted. Concession contracts must include, among other things, a description of the benefits for the community and their co-participation, mechanisms of control and law enforcement and quotas for the first five years, as well as the social and industrial projects that are planned. DNTF do visit a sample of concessions to check harvesting against management plans. However, not all concessions are visited. Moreover, there is no agreed process for verifying management plans despite revised guidance (Siteo and Bila, 2006). Some key elements of good practice, such as social investments, are left unchecked, with any failure to fulfil agreements regarding community benefits not constituting an infraction of the law as described in Article 41 of Law 10/99 and Articles 114 and 115 of Decree 12/02.

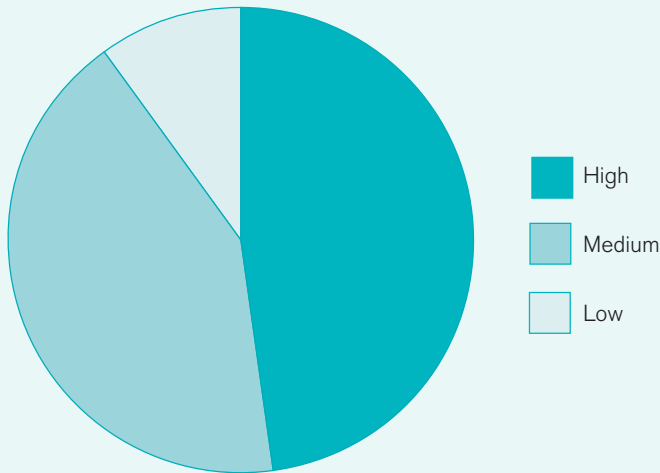
In terms of annual concession renewals, there have been repeated accusations of corruption and illegality including in reports commissioned by the government itself (Barnes, 2001; Reyes, 2003; MacKenzie, 2006; MacKenzie and Ribeiro, 2009; Egas *et al.*, 2013; EIA, 2013; 2014). Irregularities are regularly reported in government checks pertaining to harvesting, transport and export. For example, in 2004 an independent reviewer found that none of the non-certified concession or simple licence operators maintained any records of where logging had taken place or what timber had been removed in previous years – making an assessment against the management plan impossible (MacKenzie, 2006). More recent reports point to a continuation of this reality (EIA, 2013; 2014) and strongly implicate Chinese timber traders, concession holders and their Mozambican partners. It is therefore clear that a more rigorous approach to renewals is needed. Given capacity deficits in government law-enforcement staff, some form of independent timber-legality verification system might be advisable (see Section 5.2), coupled with an obligatory renewal period to incentivise better practice – with the performance checks extending to social contracts with local communities. DNTF have been improving their scrutiny, including in the field in recent years (Egas *et al.*, 2013), which might make such an option possible.

Box 2. Option: introducing more stringent licensing and licence-renewal procedures

Perception of the authors

Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
*****	*****	****	*****

Option priority as perceived by 26 Mozambican forest experts



2.3 Law enforcement

Law enforcement is perhaps the most obvious option for incentivising better practice among Chinese forestry companies and timber traders and their Mozambican counterparts. Sustainable harvesting volumes in future rotations (and thereby longer-term sustainability) can best be achieved by controlling harvesting volumes in the first cut. This might involve, for example, increasing minimum harvesting diameters, capping harvesting volumes, increasing the distance between harvested trees, and using reduced-impact logging techniques. All of these will have cost implications for the operator, and are therefore likely to be resisted. Crucially, all but the first of these measures can **only** be enforced through field inspection. By holding operators to the volumes advanced in their management plan and associated annual felling plans, there is a better chance that complete liquidation of commercial species in the forest (the concern expressed in EIA, 2013 and 2014) can be avoided.

The enforcement of the Forest and Wildlife Law falls under the responsibility of the Ministry of Land, Environment and Rural Development (MITADER) in the areas that come under their jurisdiction. The function is carried out through an

inspection service (*fiscalização*) in the field, comprising fixed and mobile posts. Under MITADER there are altogether 559 active forestry and wildlife inspectors who are attached to SPFFBs throughout the country (Table 6). They are to control and supervise nearly 50 million hectares of forest. This is almost an impossible task as each inspector will have an average of nearly 89,445 hectares of forest to monitor. Given that some staff are assigned to plantations (eg in Niassa), some to road inspections and some to administrative tasks, this area becomes even bigger. There are only 47 fixed posts throughout the country controlling the transport of forest products.

Table 6. Forestry and wildlife inspectors (MITADER)

Province	Academic level						Source
	Higher	Medium	Basic	Elementary	Other ²	Total	
Maputo	3	24	12	29		68	SPFFB de Maputo (2014)
Gaza	10	10	20	35		70	SPFFB de Gaza (2014)
Inhambane						76	SPFFB de Inhambane (2014)
Sofala	5	26	4		12	47	SPFFB de Sofala (2014)
Manica		20	7	25		52	SPFFB de Manica (2014)
Tete						26	Ministério das Finanças (2010)
Zambézia		31	21	2		56	SPFFB de Manica (2014)
Nampula	12	27				63	Ministério das Finanças (2014)
Cabo Delgado		47	1	15		63	SPFFB de Cabo Delgado (2014)
Niassa						38	Ministério das Finanças (2010)

The effectiveness of law enforcement is further aggravated by the lack of adequate equipment, transport means, and by insufficient operation and maintenance budgets that frequently hamper mobility. The cars and motorbikes used are mostly old and have frequent and long-lasting breakdowns. Moreover, limited budgets for running vehicles are frequently exhausted before the budget replenishment date, paralysing the work. Limitations on staff and their mobility have a significant negative impact on the supervision and control of all field activities. Further to that, there is also technical limitation arising from the training of the inspectors. The majority of the inspectors are either primary-level or secondary-level technicians with little or no vocational training. They are not technically well equipped to cope with the requirements of law enforcement or to deal with issues related to the operations of forest concessions and forest community involvement in forest resource management.

2. Education less than 7th grade level.

There have been some attempts in other countries to improve the effectiveness of law enforcement by also contracting private revenue-collecting firms on pre-defined benefit-sharing terms. This practice deserves testing to find its applicability under Mozambican conditions. One of the important provinces – such as Sofala, Zambézia, or Cabo Delgado – could be chosen for this test. In that province, official forestry and wildlife inspectors would be relieved of road checks and their efforts could be diverted to monitoring and supervising activities in the forest. A contracted company could assume the responsibility of road checking.

Due to the country's overall economic situation, the government keeps the salaries of its civil servants low. This has a cross-sectoral effect, which reduces work efficiency. Government employees are not satisfied by the salary they receive, and some of them seek new jobs in non-government sectors while others seek a second job. This unwanted situation is a reality which affects also forestry and wildlife law-enforcement efforts. The very low salaries are far from adequate to support a family. This situation, unfortunately, creates an environment that encourages corruption. In response to this danger, the government firstly provides a 20-per-cent increase to an inspector's base salary as a subsidy, and secondly shares fines paid by offenders with the inspectors involved in making the charge. These are positive steps to motivate inspectors but more is needed to increase the efficiency of law enforcement and revenue collection.

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There are various reports pointing to illegalities in the Mozambican forestry sector, in part associated with the Sino-Mozambican timber trade. Reported irregularities include:

- Illegal harvests (harvests in excess of licensed amounts, harvests without a licence, or harvests in an area other than licensed),
- Violations of labour laws (eg illegal employment of foreign workers),
- Illegal transit and purchase of timber, and
- Illegal exports (exports of unprocessed logs of species classified as 'first class', and under-reporting of volumes exported) (Mackenzie, 2006; Mackenzie and Ribeiro, 2009; Ribeiro and Nhabanga, 2009; MF, 2010).

Mirror statistics indicate that the quantities of exported logs in total timber exports from Mozambique to China are three to five times higher than the officially recorded volumes, especially since 2008 (German and Wertz-Kanounnikoff, 2012). According to a recent report, 48 per cent of China's 2012 imports from Mozambique were unlicensed, hence technically illegal (EIA, 2013).

At two moments in the recent past, consultants have, together with DNTF, tried to advance the idea of a better log-tracking system within Mozambique. Barnes (2001) proposed a plastic electronic barcoded tagging system for logs (and the stumps from which they came) to avoid falsification of number and documents. Norjamäki *et al.* documented the current system based on five paper documents: the felling licence itself, the cutting book in the harvesting unit, a registry book in the log yard, a transport permit and log list in the trucks, and an entry/processing book in the

processing facilities (Norjamäki, 2007; 2008 and Savcor, 2009). They suggested a number of possible more modern alternatives in terms of tagging. Neither set of suggestions was taken up by DNTF. Neither has there been any development of a Legality Assurance System – a key feature of Voluntary Partnership Agreements (VPAs) to export timber to the European Union (EU) under the Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan. DNTF has opted not to pursue a VPA – in part because 93 per cent of its logs are destined for China.

The main intervention points for law enforcement might be:

- field inspections (against cutting books and felling licences),
- transport inspections (against transport permits and felling licences), and
- inspections at the processing facilities or export-oriented log yards (against entry and processing books, transport permits and felling licences).

As noted above, field inspections are a critical requirement for assessing what volumes are being extracted, from where, and with what impact. Yet the staff and mobility constraints described above mean that field inspections are suboptimal. In addition, the internal systems for recording how logs are 'processed' prior to export are often deficient – which complicates log yard inspections (Savcor, 2009). This leaves the main law-enforcement activity in the hands of transport checkpoints.

Transport checkpoints assess the felling licence (recorded against a unique number in the DNTF database) against the operator's name, wood species, volume, location, and the fee paid. They also assess transport permits that record the number of logs and volumes by species, the felling licence to which they relate, and the registration number of the vehicle used as transport. Each log must be uniquely numbered and have a unique emblem of the responsible company. As trucks pass forestry checkpoints, the volumes are checked and then deducted from the felling licence totals in the database. Transport checkpoints cannot ascertain where the timber actually came from – especially if there is no robust tagging system. Past independent inspections have noted bypassing of checkpoints, under-reporting of volumes on transport permits by as much as 50 per cent, and a series of other infractions (MacKenzie, 2006). More recently, Egas *et al.* (2013) noted that, despite improvements in law enforcement, the volume of unlicensed wood destined for both domestic consumption and export increased by 88 per cent from 2007 to 2012. The loss of government revenues reached US\$11.6 million for the year 2011 alone.

The government has tried to incentivise law-enforcement agents. The forestry and wildlife regulations establish a rate of 20 per cent of a salary of an inspector and assistant inspector as an additional benefit, to be given as a compensation for the risk involved in their work. Further to that, the regulation establishes a rate of 50 per cent of the value of the fine charged and the value of the product confiscated, as a performance-based bonus to be given to those who are involved in catching offenders. The involved person could be a forestry and wildlife inspector, a community inspection agent or an informant. The implementation of the 20 per cent salary supplement was straightforward, and has started immediately. But the regulation called for a

joint ministerial diploma to set up an implementation mechanism for distributing the compensation of 50 per cent of the fines collected. The diploma up to now has not been put in place. However, unlike the process of channelling 20 per cent of the forestry tax back to communities, and unlike incentives to be provided for forest and wildlife restocking, the provinces have taken independent action and started distributing that 50 per cent compensation fee. Currently, each province has its own distribution mechanism. Because of this, the countrywide implementation of this incentive has no uniformity. It is hoped that the diploma will be prepared and signed by the relevant ministers so as to bring a standard and uniformity as well as a transparency to the implementation.

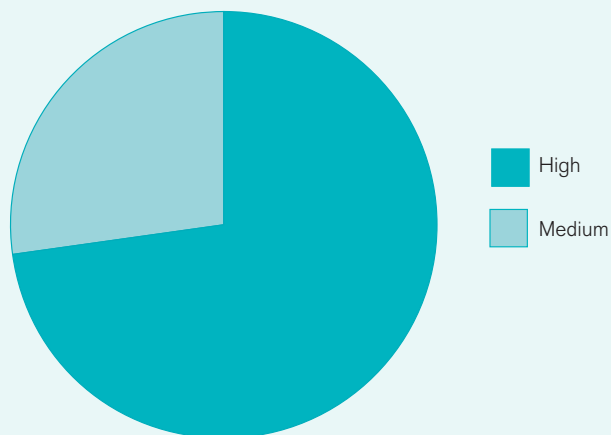
Clearly, better law enforcement would help to tackle unsustainable and illegal logging within Mozambique and improve practices by Chinese forestry companies and timber traders and their Mozambican counterparts. Implementing one of the more advanced systems of log tracking or at the very least an online database of timber flows managed by an independent law enforcement agency such as AQUA – backed by more frequent field visits to check management plans and felling licences – could and should be central to efforts to improve revenue capture which would soon resource those additional efforts. Any reluctance to do so is probably indicative of the political economy of the timber trade and who controls it.

Box 3. Option: tightening law enforcement (by introducing new log tracking system)

Perception of the authors

Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
*****	*****	****	*****

Option priority as perceived by 26 Mozambican forest experts



Revenue flows

Concerns over the future profitability of the timber trade are a second important driver of practice for Chinese timber traders, concession holders and their Mozambican partners. Shaping revenue flows is therefore a second important lever that can be used to improve forestry practice – rewarding companies that improve economic, social and environmental impacts. In remote rural areas, managing natural forest-harvesting operations is a precarious business – with considerable logistical issues and costs associated with operational planning and implementation. Mozambique is no exception.

Within Mozambique, studies of timber-harvesting profitability are few and far between. Fath (2001) studied five small timber companies in Gaza, Sofala, Zambézia, Nampula and Cabo Delgado. Only one company was able to make a small profit of US\$14 per cubic metre of timber harvested – the rest losing between US\$45 and US\$205 per cubic metre. Poorly planned harvesting, low recovery rates (in which many logs were left in the field), and inefficient felling and crosscutting techniques resulted in suboptimal extraction intensities. In addition, transport was found to be the main bottleneck in operational efficiency, with many operators installing processing facilities far from the forest, which increased transport costs (much material was transported that ended up as waste). Poor road conditions and low-load capacities of vehicles used for first (short-distance) transport and second (long-haul) transport prevented a consistent flow of raw materials and consequently held annual production volumes well below technological capacities (Fath, 2001).

These findings were further elaborated by the Forest Entrepreneurship and Joint Forest Management Project. Field surveys found hauling was done by tractors and small trucks to the landing sites, and by medium (5–10 tonnes) or large (>10 tonnes) trucks carrying logs to distant sawmills. Most of these vehicles were ‘at the end of their life-cycle’ (Savcor, 2005a). Another prevalent issue was identified as the high cost and low utility of the obligatory management plans which, under the forest regulations, must be carried out by a qualified forester – of whom few, if any, are employed by the predominant informal operators, simple licence holders, or concessionaires (Savcor, 2005b).

Investment scenarios and profitability were assessed for both simple licence holders and concessionaires (Savcor, 2005a). They found that (i) simple licence holders using second-hand equipment and selling direct to middlemen could operate profitably (breaking even in the first year) as long as forest resources were abundant; but that (ii) simple licence holders investing in heavy equipment such as trucks to supply export firms or processors were only profitable if the volumes of timber could be guaranteed from two simple licence areas and if higher prices were paid at the port or processing site (neither are readily guaranteed). It is therefore imperative that simple licence holders are able both to improve the sustainability of

their management, and group together into associations to justify investments in transport and potentially processing.

For concessionaires, the investment scenarios of Savcor (2005a) found that profitability was generally lower than for simple licence holders selling direct to middlemen. Nevertheless, businesses could be profitable, especially if they installed processing capacity at the concession site (the higher fuel prices for generators on site, compared with city-based energy, are more than offset by the lower transport costs of sawn timber versus logs). The profitability of concession management could exceed that of simple licences if value-added elements such as on-site processing, kiln drying, and use of waste were installed – although the break-even point would take place at least three to four years after the initial investment.

In the few more profitable examples of concession management (eg TCT Dalmann based near Caia) these lessons have been applied. For example, TCT Dalmann operates a sawmill and a kiln on site at the Catapú concession. It also plans to shift its furniture factory there in the coming year. Currently, it operates a management spreadsheet that tracks all logs from one of 30 annual felling blocks so as to avoid any losses. The felled timber is sawn into planks, as required by the factory, dried in the kiln and then transported to the furniture factory in Beira to be made into high-quality hardwood furniture, thereby adding value to the raw product. In addition, there is maximum utilisation of what is generally termed commercially unviable sawn products, which are all used in a viable local industry with the production of pre-fabricated houses, beehives and a range of turned products. Finally, absolute off-cuts are available to the staff and all-comers for various uses, including fuelwood (Palgrave, 2011). New markets, such as turning blanks for the UK wood-turning industry, are also helping offset plummeting local furniture sales. One additional important point is that within Mozambique, local furniture sales are declining in part because of highly advantageous conditions for furniture importers, for which there is absolutely no justification.

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Prospects for government incentive schemes or investments to improve operator practice will ultimately rely on the main government revenue flows linked to the forest sector. The National Programme for Agricultural Development (PROAGRI) has been the principal implementation framework for the forest and wildlife sector policies and investments since 2000. The programme has had an investment portfolio of some US\$200 million that was made up by the contributions of more than ten donor governments and international institutions. The government share in the portfolio has been about 12 per cent of the total. The government has had responsibility also for all recurrent costs attributed to the implementation of the programme. Under PROAGRI, the DNTF has had annual budget allocations of around US\$1 million, though annual disbursement has been not more than 60 per cent of the allocated budget.

Parallel to PROAGRI, forestry and wildlife operations have received funds through various donor-supported projects. Some of the larger programmes since 2000 are listed below.

- The African Development Bank (AfDB) funded project Forestry and Wildlife Resources Management. It was phased out by June 2004 and contributed US\$9.9 million in forest-inventory and management-plan preparation in selected forest areas, and in strengthening law-enforcement capacity in the provinces of Sofala, Manica and Cabo Delgado.
- The Food and Agriculture Organization of the United Nations (FAO) unilateral trust fund (UTF) Support for Community Forest and Management. The fund had a US\$900,000 budget for 2003–2006.
- The Finnish government-funded project Sustainable Management of Natural Resources. This had a budget of €8.2 million in 2001–2004.
- The Nordic Development Fund (NDF) Forestry Entrepreneurship and Joint Forest Management. With a budget of € 7.4 million, €4.6 million was credit to private companies and local communities in 2004–2008.
- The Southern African Development Community (SADC)-funded regional project, SADC-GTZ Community Based Indigenous Forest Management with €2.1 million in 2002–2006, for four countries including Mozambique.
- The Global Challenges Programme (GCP) Food Security project with US\$4.35 million in 2002–2006.

The Agricultural Development Fund (FFA) is the main Mozambique-generated funding source for the forestry and wildlife sector (the revenues that go into it are described below). The fund, administrated under MASA, has been providing funds mainly for activities related to law enforcement and reforestation. During the last three years, forestry has received annually US\$1–2.5 million.

Mozambican forest and wildlife revenues are derived from various licence fees, restocking taxes, penalties for violating legislation, taxes to incentivise timber processing (overvaluation of timber tax), and the sale of confiscated forestry and wildlife products. The bulk of revenues, nearly 60 per cent, is collected from the licence fees levied on timber production. The rest of the fees consists of charges for restocking taxes, wildlife hunting and trophy charges, fees applied to non-timber forest products (NTFPs), fines and the sale of confiscated products. Timber production, whether it is produced under a simple licence or in a forest concession area, is subject to the same licence fee that is based on out-turn volume (OTV). The OTV assessment is based on the actual volume removed from a harvest area. The fee payable is based on the measurements carried out by the producer and paid according to tree species. For licensing purposes, forest tree species in Mozambique have been classified according to their respective marketable value and been put in five different classes. The licence fee applicable to each class differs, from the highest value for precious tree species down to the lowest level for Class 4 species. The rates for these classes are defined by a joint ministerial diploma and are subject to periodical revision.

The licence fee system based on OTV assessments unfortunately encourages over-exploitation of high-value tree species and under-exploitation of lesser-known species. This has a negative impact on efficient forest management and utilisation. This is evident from the fact that at present nearly 93 per cent of total timber production includes only those tree species that are contained in the precious class and in Class 1. Moreover, of this 93 per cent, over 78 per cent is limited only to three species: *Azelia quanzensis* (chanfuta), *Pterocarpus angolensis* (umbila), *Millettia stuhlmannii* (jambirre or Panga-panga). This extremely selective system is further aggravated by being selective in terms of size and the shape of the trees and focusing on the best part of the stem, hence operating with a low recovery rate. This leads to under-utilisation and significant waste, which has an undesired economic implication. The forest sector also charges fees on production of construction poles and NTFPs as stated in the forest and wildlife regulation.

There are also some revenues originating from protected areas, which consist of licence fees for hunting, trophies, for professional hunters, entrance fees for national parks, annual land rent for hunting-ground operators, and fines charged on illegal acts and the sales value of confiscated products. Licence fees, as with the forest product fees, are contained in the forestry and wildlife regulation and are subject to periodic revision. Annual land rent for hunting grounds is established through competitive bidding when awarding a contract.

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Currently, almost all revenues are collected at the provincial level by SPFFBs. However, in line with the ongoing decentralisation, some district-level forestry offices are also delegated to issue licences for the collection and production of NTFPs. The fee collected by the district forestry office is then sent to the respective SPFFB. The revenues collected at the provincial level are directly sent to MASA (formerly the Ministry of Agriculture and Rural Development or MADER and the Ministry of Agriculture or MINAG) where they go into the Agricultural Development Fund. However, from the total revenue collected at the provincial level, 20 per cent is deducted and given to organised local communities in whose areas timber extraction takes place. In addition, 50 per cent of the amount of any legal penalties is paid to law-enforcement inspectors and 6 per cent is retained by the provincial directorate of agriculture to cover administrative expenses.

The fund receives not only forestry and wildlife revenues but also the revenues of the other sub-sectors, such as agriculture and livestock. All revenues are put together and kept in a pool, and then used to support activities across several sectors. It disburses funds partly according to an annual plan, but frequently also on an ad hoc basis. As the fund receives income from the provinces in a consolidated form, it is difficult to distinguish the exact proportion that corresponds to the contribution of forestry and wildlife revenue. This contribution is said to be around 80 per cent. On the other hand, although actual figures are not available, it is estimated by the fund officials that of the annually disbursed funds, only some 20 to 25 per cent goes to forestry and wildlife. The disbursement rate, referring to the allocation for forestry and wildlife, is understandable if one

looks at the fund's objectives, which are more related to the other agricultural sub-sectors. What is really hard to justify is that forestry is financially supporting other sub-sectors while the sector itself is in badly need of funds to implement its own development programme.

3.1 Revenue-based incentives

Using the licensing and tax system to ensure that operators improve forestry practice is a potentially powerful lever for change. As noted above, the ways in which governments collect revenues from the forest sector usually involve: (i) licence fees (eg lease fees for the allocation of land, fees for simple licences to harvest timber, fees for forest concessions, stumpage fees/payments for felling permits, licences and stamp duty for the transporting forest products); (ii) taxes (eg value-added tax, export duties); and (iii) fines, confiscation and damages for infringements of the law. Within Mozambique, revenues from the forest sector come primarily from volume-based logging licence fees (about 60 per cent of total revenues). These totalled US\$4.4 million in 2009, US\$8.2 million in 2010, and US\$10.8 million in 2011 (DNTF, 2012). However, as noted in Siteo *et al.* (2014: 345–57) discrepancies between Mozambican and Chinese customs data suggest that a larger proportion (US\$27 million per year) of revenues is lost due to illegal timber harvesting and export practices (German and Wertz-Kanounnikoff, 2012; EIA, 2013).

As long ago as 2003, a survey of the then current tax regime concluded that the predominance of volume-based fees was likely to have perverse effects (Rytkönen, 2002). Such taxes were likely to encourage 'creaming off' of the best-quality timber to enhance the ratio between revenue and tax (further exacerbated by species-wise licensing); under-reporting of timber volumes; application for overly large concession areas from which to ensure access to high-value timbers; and inefficient concession use. It was recommended that the government of Mozambique emphasises instead an area-based system of taxation which would be easier to collect, provide more regular revenue flows, and encourage harvesting efficiencies and the use of non-precious timbers. It was further recommended that performance-based tax rebates be made available for companies implementing management plans or with independent forest certification. This could potentially replace the 15 per cent ad valorem (according to value) sur-tax that is nominally earmarked as a 'reforestation tax' but for which, in practice, there is no mechanism to channel that money back into reforestation. Alternatively, through a process of performance-based monitoring of the management plan, there could be a specific rebate of the 15 per cent 'reforestation tax'. Up until 2015, the government of Mozambique, notwithstanding the recommendations above, has continued with a volume-based system of taxation.

Of the 165 forest concessions in the country, most employ local people for low-paid jobs, such as *pisteiros* or trackers, to help identify good tree species in the forest. Jobs are also created where primary processing takes place in the sawmill. However, most concessions do minimum processing to allow the export of timber.

This significantly reduces the potential income that could be generated both through payment of salaries, income taxes, value-adding and other activities (Ogle and Nhantumbo, 2006).

The extent to which Chinese concession holders operate in this way is not clear. Yet within Ministerial Diploma 51/2003 of 14th May 2003, there exists a tax rebate for those operators whose timber is destined for national industries (such as plywood, veneer, panels, mosaic parquet and similar products). The scale of the tax rebate is defined in the ministerial diploma as 40 per cent of the tax. This is ostensibly a strong incentive for within-country processing. It is not clear whether operators are aware of this potential rebate, or the operational mechanics of claiming it, but profit considerations elsewhere in the value chain (eg in China) more than offset the foregone revenue from claiming this tax rebate. However, the application of the incentive has brought about confusion. The word 'similar' has raised the question as what are included in so-called 'similar' products. In some cases the incentive has been provided even for sawn-wood production. In addition, ministerial Diploma 52/2003 of 14th May 2003 reduced the licence fee for three selected species, *Azelia quanzensis* (chanfuta), *Pterocarpus angolensis* (umbila) and *Millettia stuhlmannii* (jambirre or Panga-panga) by 75 per cent applicable for the year 2003. This diploma and the preceding one were signed on the same date. It is not clear whether the reduction on the fees of these selected three species is in addition to that 40 per cent that was provided by the previous diploma or is just replacing it. It is assumed that the 75 per cent was decided as a replacement.

There are also incentives that are mentioned in the Forestry and Wildlife Law referring to forestry and wildlife restocking. The law provides for incentives to be given to those individuals or companies who are undertaking reforestation or wildlife restocking activities. The law calls for a diploma for the definition and implementation of these incentives. The way it works is that the law imposes an additional fee on top of all forest and wildlife exploration licence fees, and authorises the council of the ministers to decide on the level of that additional fee, so that a fund is created for reforestation purposes. Theoretically, any companies undertaking reforestation should not have to pay that fee. The level of the additional fee, as defined in the forestry and wildlife regulation, is 15 per cent of each licence fee. The forest and wildlife regulations again fail to provide an implementing mechanism, and call for a ministerial diploma to deal with it. The diploma, until now, does not exist – despite the fact that the licence holders have been paying this fee for the past two years, since the approval of the regulation. There is no indication as to whether the amount collected so far has been kept in a separate account to be made available as soon as the diploma is prepared and signed. This incentive is urgently needed, in view of an overwhelming necessity for promoting reforestation and wildlife restocking operations – both of which are almost at a standstill. Some concessionaires have already expressed their interest in undertaking reforestation activities provided that they are supported by an incentive scheme.

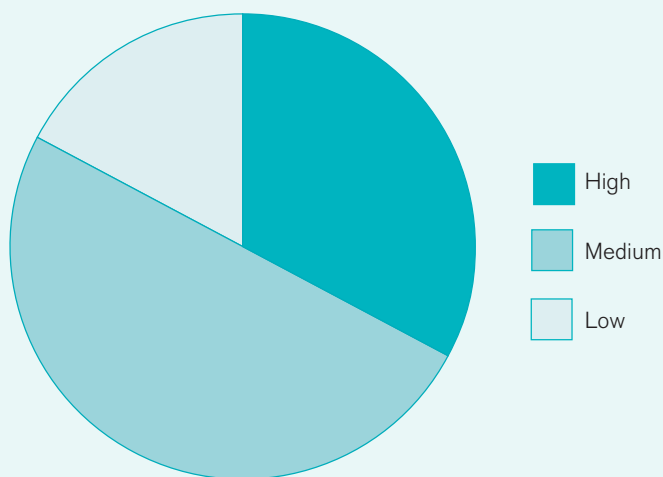
It is evident that there are ways in which the tax system could be adjusted to encourage more efficient (and indeed more sustainable) use of Mozambique's forest resources by Chinese timber traders, concession holders and their Mozambican partners. For example, the predominant mechanisms for tax collection could be shifted to area-based fees rather than volume-based mechanisms, with appropriate rebates for those companies complying with and using management plans. But even without any changes to the existing legislation it would be possible to explore to what extent there is awareness of the tax rebate based on processing timber in-country, a functional mechanism in place, and whether that mechanism provides an adequate incentive to encourage greater value addition within country (with attendant gains in employment, revenue streams, and reductions in waste). Certainly the latter, if not the former, should provide an easy win-win-win for the Mozambican government, Chinese operators and local labour force.

Box 4. Option: altering revenue-based incentives

Perception of the authors

Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
■■■■■■■	■■■■■■■	■■■■■■■	■■■■■■■

Option priority as perceived by 26 Mozambican forest experts



3.2 Benefit-sharing arrangements

Although perhaps less obvious than the review and potential reform of the tax collection system, there are also ways in which improvements to the benefit-sharing arrangements with local communities could help Chinese timber traders, concession holders and their Mozambican partners. At present, and in addition to any benefits (potentially to both sides) that are negotiated between company and community (see Section 6.1 below), the forestry regulations stipulate that 20 per cent of the tax collected from simple licence and concession operations is to be returned to those communities by the government.

To qualify for such benefits, communities must be organised, establish a finance management committee and facilitate decision making about priority uses of those financial resources. This involves formalising an association and opening a bank account for the community. Nearly 600 communities have received 20 per cent shares of revenues from royalties and five districts in Niassa are among the beneficiaries (Brouwer, 2011). An assessment of the effectiveness of the process of devolution of 20 per cent to communities indicates that, from 2005 to 2011, more than Mt103 million or nearly US\$350,000 has been given to 861 communities throughout the country. This is out of a total of 1,089 potential beneficiary communities (Chidiamassamba *et al.*, 2012). There are obvious ways in which Chinese timber traders, concession holders and their Mozambican partners could assist communities with the formalities to enable them to receive such payments. This would improve relationships with local communities – and help safeguard the resources upon which those timber operators depend (for more on law enforcement, see Section 2.3)

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The premise behind such benefit-sharing arrangements needs careful examination. It is important first to understand that within Mozambique, the 1997 Land Law sought both to anchor land as property of the state, and to balance between safeguarding the interests of communities and facilitating investors' access to land (van den Brink, 2008). The Land Law established the right to use land which is inheritable and – subject to certain restrictions – transferable. This right is known as DUAT. It is secure, renewable and long term (up to 50 years). There are three basic ways that one can acquire DUAT: (i) self-defining communities have it due to their historic occupation of the land governed by customary law; (ii) good faith occupation (after using the land for at least 10 years without objection); and (iii) adjudication and allocation of long-term (up to 50 year) leases or concessions by the state. Pre-existing communities should therefore have DUAT irrespective of their formal registration of that right. Registering such DUAT is costly, however, and without registration, outside investors can know little of who has the rights to what in a particular area (USAID, 2011). The problem lies in the fact that the Forest and Wildlife Act makes further prescriptions about the commercial right to use timber in productive forest areas – through the concession and simple licence systems described in Section 2.

The result of these two bodies of law is that communities can have DUAT – but cannot prevent the state from allocating forest concessions or simple licences which might overlap that DUAT. Rather than afford communities with DUAT the commercial rights to the timber (which could then be negotiated and sold to traders with 100 per cent of the commercial value going to the communities minus tax), the government chose instead to grant timber operators the full commercial value of timber (minus tax) and give communities only 20 per cent of the tax revenues arising from the timber operations (in other words, a tiny fraction of the total revenues arising from the exploitation of timber). At first, second, and third glance, this looks like a bad deal for the communities. It looks as if the communities are being ‘compensated’ for the negative impacts of having some external operator take all that is of value from their land. Of course, communities can apply for concessions and simple licences, but the bureaucratic hurdles and investment capital for processing weigh heavily against them.

Local communities do enjoy free access to forest and wildlife resources for subsistence, a legal right enshrined in the Forest and Wildlife Act. But owing to the bureaucratic difficulties described above, communities rarely apply for licences for the extraction of any traded commodity, timber or non-timber, that they take in addition to their subsistence requirements. This implies a loss in government revenue generation but also indicates uncontrolled utilisation, which has negative impacts on sustainable resource management. In addition, the implementation of the mechanism to redistribute 20 per cent of the tax is encountering several problems. These include a lack of community organisation, community members having no identification and not being registered with the finance department, unclear management of the community funds into which the payments are made, and funds not being reinvested in the forest sector. There is now a draft proposal which explains how this 20 per cent is going to reach communities, and how the communities are going to make use of it. The proposal has already been submitted for the approval of the relevant ministers. But in the main, communities illegally harvest and sell timber to willing buyers to try and recoup some of the commercial value that would otherwise disappear to external operators. This undermines the system of legality in the country.

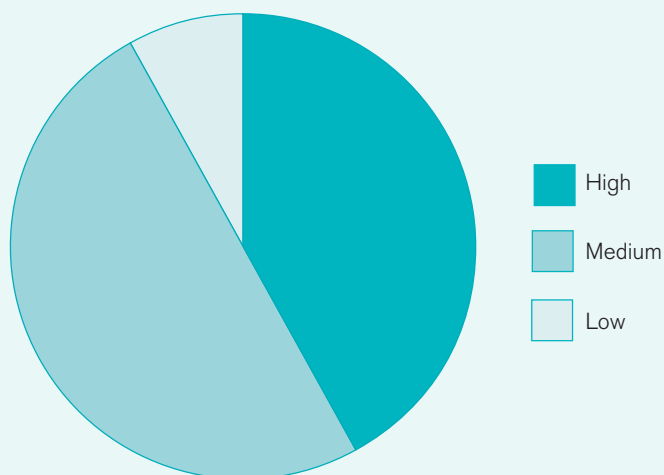
An alternative might be the full ‘delegation of powers’ over commercial timber rents to communities (as was drafted in a legislative reform package of the same title that was never approved). The advantage of so doing would be to greatly increase the commercial returns to communities, which would allow for meaningful company–community partnerships, greatly incentivising community enforcement of illegal cutting, and making the process of negotiating with communities much more straightforward (than the currently unworkable system described in Section 3.2). Whether there is any appetite to revisit the ‘delegation of powers’ legislation is questionable given its past failure.

Box 5. Option: restructuring social benefit-sharing arrangements

Perception of the authors

Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
■■■■■■■	■■	■■■■■■■	■■■■■■■

Option priority as perceived by 26 Mozambican forest experts



3.3 Payments for environmental services (PES)

There is considerable interest within Mozambique about how payments for environmental services (also known as payments for ecosystem services or PES) might potentially incentivise better forest practices. Particular interest has centred on payments for carbon sequestration through either the Clean Development Mechanism (CDM) or the Mozambique strategy for reducing emissions from deforestation and forest degradation (REDD+).

One early CDM project predates REDD+ in Nhambita, Sofala. International buyers of carbon credits approach Envirotrade to offset their carbon emissions through the Plan Vivo system (Envirotrade, undated). This relatively small and complex community agroforestry initiative involves enrichment planting with 1,107 ha of *Faidherbia*, 54 ha of *Gliricidia*, planting nitrogen-fixing trees in the fields, 210 ha of cashew orchards, 138 ha of homestead fruit and shade trees, 56 ha of mango orchards, 276 ha of woodlots of indigenous tree species to provide firewood, and 2,594 ha of boundary planting around the field or *machamba*. It also involves a payment to the farmer to incorporate agri-residues instead of burning them on 2,804 ha and a 9,105 ha conservation programme which rewards communities and individuals for protecting forest zones. The project is data-intensive with full audits

of more than 7,300 agroforestry contracts. By 2012, it had involved payments of US\$1,966,474 originating from approximately 50 voluntary buyers. The potential of this system, however, is partially limited by the complexity of managing complex small-scale interactions between voluntary buyers and multiple forest-farm producers. Whether the scale of operation required for the more land-extensive operations of Chinese timber traders, concession holders and their Mozambican partners could be met by such a system is highly debateable.

More promising perhaps are the financial flows that might emerge through Mozambique's REDD+ process aligned with the World Bank's Forest Carbon Partnership Facility (FCPF). With Mozambique, the REDD+ process began in 2008. A consultant led a process to prepare a REDD Readiness Plan Idea Note (R-PIN) which was then followed by the establishment of a working group in the Ministry of Coordination of Environmental Affairs (MICOA) under the South-South REDD initiative (Nhantumbo, 2012). This process ultimately led to the preparation of a REDD+ Readiness Preparation Proposal (R-PP) which was duly signed off in 2013 by the FCPF. The REDD+ working group, under the overall leadership of MICOA, is generating some impetus around three studies (i) a reanalysis of drivers of deforestation; (ii) strategic social and environmental assessments; and (iii) institutional arrangements for REDD+. World Bank FCPF funding for that body of work is complemented by Norwegian funding of a Testing REDD+ project in the Beira corridor and funding from the government of Japan for monitoring reporting and verification systems alongside a biomass energy project in association with the Japanese private company Carbon Free Consulting Corporation in Gaza.

Critically, a decree was passed in 2013 that governs licensing of REDD+ projects, which was pushed through to cope with the growing number of carbon-speculator initiatives in Mozambique of which there have been many – see for example Falcão (2011) and Quan *et al.* (2014) and those listed below.

- Mozambique Carbon Initiative's (MCI) submitted a proposal for 18 projects to develop carbon credits for trade in all the provinces identified for piloting REDD+, spanning 15 million ha, approximately 19 per cent of Mozambique's land area. The company undertook carbon assessments and intended to start projects in Sofala (Gorongosa, Nhamadzi, Vanduzi), but in late 2014 re-strategised and may now focus more on bioenergy.
- HEWA Moçambique Limitada submitted an application for an area of 3.4 million ha in Cabo Delgado which has not met with approval – in part due to the new decree.
- Flora and Fauna International (FFI) has plans to work with a company to implement REDD+ in the Niassa Reserve, but has been refused permission by the government.
- World Wide Fund for Nature (WWF) has plans to implement REDD+ across an area of 250,000 ha in the Zambezi Delta and Cabo Delgado, but these have not yet been implemented.
- Envirotrade plans to expand its (CDM) carbon forestry initiative in the Gorongosa buffer zone and also implement a REDD+ pilot in the Quirimbas National Park in Cabo Delgado.

- The French Development Agency (AFD) is exploring the potential for REDD+ in the Gilé Reserve in Zambézia.
- Green Resources Inc. plans to submit its plantation area within a carbon project but is still in the planning phase.
- The Association of Volunteers in International Service (AVSI) is exploring plans for a small project in Cabo Delgado linked to the Voluntary Carbon Standard (VCS).

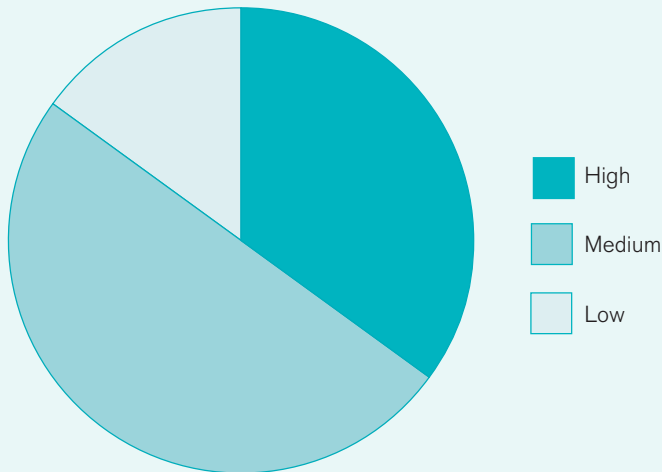
The 2013 decree set out licensing requirements for REDD+ projects in addition to any requirements for secure land rights (DUAT) as defined in the 1997 Land Law. So any prospective REDD+ project operator would need to devise a way of handling a REDD+ project based on existing land rights and community consultations – in addition to the licensing requirements established by the decree – and the daunting metrics of quantifying and selling carbon into the existing markets. Nevertheless, the strong progress made under the Testing REDD+ programme is beginning to shed light on how REDD+ payments could be structured to improve the sustainability of the timber industry (see Nhantumbo and Mause, 2015).

Box 6. Option: developing payments for environmental services

Perception of the authors

Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
*****	**	****	****

Option priority as perceived by 26 Mozambican forest experts



Business relationships

Concerns over conflict-free relationships with local people, other operators and government authorities are a third driver for the practice of Chinese timber traders, concession holders and their Mozambican partners. One of the principal difficulties in dealing with Chinese timber traders, concession holders and their Mozambican partners is that outside of concessionaires, the actors involved are dispersed and unorganised – both on the side of the Chinese timber traders, and on the side of the Mozambican simple licence operators.

One potential set of levers to improve the practice of those operators might be to strengthen the organisation of business associations and the standards by which they operate. While there are provincial-level associations, these primarily serve to represent those operators in discussion with government, rather than to coordinate market arrangements and quality standards. Operational practices in the forest and interactions with local communities are conducted on a largely ad hoc basis depending on the operators in question. There have been recent attempts within Mozambique to group both Chinese timber traders and concessionaires through structured dialogues and training events (Ofumane and Kabubu, 2013) and to work with and train Mozambican simple licence operators to join forces into longer-term concessions based on a group business model (Macqueen, 2015). In both processes, the aim has been to find organisational arrangements that work better for the businesses concerned, while also offering more to local communities and better management of the forest.

In addition, new guidelines have been developed, both on Chinese investment overseas and environmental protection in foreign investment by the Chinese Ministry of Commerce (MOFCOM) and China's Ministry of Environmental Protection (MEP) – alongside more specific forest-related guidelines by MOFCOM and the Chinese State Forestry Administration (SFA) (Sun *et al.*, 2014) relating to *A guide on sustainable overseas silviculture by Chinese operators* (SFA, 2008) and *A guide on overseas sustainable forest management and utilization by Chinese enterprises* (SFA and MOFCOM, 2009). The former covers both environmental and social impacts (community engagement and development). The latter is primarily oriented towards sustainable forest management and efficient wood utilisation – with an emphasis on self-regulation within the industry. While there is a learning pilot in Mozambique, the guidelines are not legally binding. And while the sector is so disorganised, there is little pressure from peers or external forces to abide by such guidelines.

As pressure on Mozambican forest land grows, there is increasing interest from local communities, civil society and the Mozambican government in seeing that benefits from forest resource use contribute to the development of rural populations. In the sections that follow, three main avenues to make such progress are explored through: (i) existing obligatory consultation processes with local communities; (ii) better organisational structures with which local representatives can interact; and (iii) improved commitments to local employment and business development.

4.1 Consultations and social outcome agreements

Within the Mozambican forest regulations, both concessionaires and simple licence holders are obliged to negotiate with communities living in those concession areas the terms and conditions under which forest harvesting takes place. Despite guidance produced by civil society (Joaquim *et al.*, 2005), both timber operators and local communities are rather unclear about what sorts of outcomes should be negotiated, over what timeframes, and with what recourse to justice in the event of either party renegeing on their commitments. These requirements open up an opportunity to explore whether a better relationship can be developed between private sector concession and simple licence holders and local communities. In the longer term this is probably critical for the continued social license to operate of those operators – if conflicts are to be avoided.

The process of consultation (and the implied benefit sharing that results) during concession and simple licence applications needs to be revisited from a commercial perspective; not just dealing with employment pay and conditions, or social projects, but also looking at possible company–community business partnerships in favour of the communities in return for a commitment to local law enforcement in favour of the company (see Bila, 2005). Because of their proximity to the resource, communities certainly have the best chance of enforcing forest laws and reducing illegal harvesting in simple licence or concession areas. Enabling investments could allow an exploration into which community business opportunities could be enhanced by partnering with a concession holder.

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There is some precedent to draw on within Mozambique. For example, the concession holder TCT Dalmann has established a wood-turning business centre for local communities in order to make use of what would otherwise be waste wood. It also makes available two-coloured wood (heart and sap wood planks) to local communities for construction purposes and local carpentry businesses. Beehive designs have been developed and distributed to help community members earn good returns from honey production. There is an acknowledged payback in terms of community information on any illegal activities taking place in the concession. Strong partnerships of this sort perhaps supported by a local NGO or donor programme could help to ensure that communities get a better deal from concessions and simple licences.

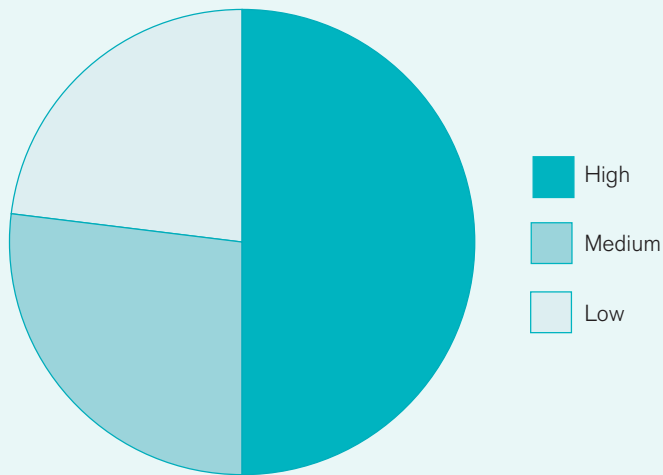
More ambitious, perhaps, might be the willingness to engage with, or even support commercial community-based natural resource management (CBNRM) – helping communities to use their DUAT to secure a simple licence or concession in their own right or partner in some form of joint venture (see Nhantumbo *et al.*, 2013). Of the 186 community delimitations, 98 have formally registered (DUAT) and 24 have been issued land titles (CTC Consulting, 2003; Chilundo *et al.*, 2005). Some of these communities have drawn up management plans for sustainable harvesting of different resources constituting the basis for enterprise development, for example in the districts of Chipanje Chetu, Madjajane, Pindanganga, Goba,

Box 7. Option: negotiated business arrangements with local communities in return for local law enforcement

Perception of the authors

Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
*****	**	*****	*****

Option priority as perceived by 26 Mozambican forest experts



Mahel and Monapo, with support from the International Union for the Conservation of Nature (IUCN), Helvetas, the Government of Mozambique/FAO and the Rural Organisation for Mutual Aid (ORAM) (Nhantumbo and Izidine, 2009). The land area of these initiatives ranges from 7,000 to 450,000 ha with an estimated 2 million ha under CBNRM (Siteo and Tchaúque, 2006). There have been several examples of community concessions supported by ORAM that have had difficult gestation periods through unfavourable contractual arrangements with simple licence operators. For example, the Muzo Community Association of Environmental Defence and Sanitation (ACODEMUZO) was registered in 2007 in Maganja da Costa district, the Community Committee for the Management of Forest Resources of Nipiode (COGERFN) registered in 2007 in Mocuba District with an established company Madeira Mahiku Kanligana (MKK), and the proposed Community Association for the Management of Natural Resource in Uape Etakua Ekumiaho (ACOGERNU) in Gilé district (all in Zambézia province) (see Nelson, undated). But currently there is only one fully functional community concession, in Macossa district of Manica province with a DUAT for 66,947 ha managed as a forest concession with support from WWF (Nhantumbo and Izidine, 2009).

Quite how solid business proposals based around community-owned businesses or joint ventures might operate to help those communities move permanently out of poverty is an open question. It is in this area that potential improvements to the negotiations between companies and communities might be able to offer a way forward. This could have mutual benefits to both as described above. Unfortunately, the skillset required to facilitate a more business-oriented and constructive relationship between concessionaires or simple licence holders and local communities is not widespread within rural areas of Mozambique. Chinese operators often face additional cultural and linguistic barriers in such negotiations, which further reduce the potential of this option.

4.2 Business organisation

Another potential lever to improve the practice of Chinese timber traders, concession holders and their Mozambican partners is to build on promising business groupings or organisations that seem to be emerging within Mozambique. For example, in the Beira corridor, several groups of Mozambican simple licence holders (most of whom supply Chinese timber traders) are expressing a desire to combine their simple licence areas into larger, longer-term concessions (see Nhantumbo and Mause, 2015). There are several understandable reasons for this. First, the concession system would help them to secure much longer-term (up to 50 years) resource access in the face of increasing competition for land and resource degradation. Second, the consolidation of their operations into a single entity with a much larger offer of timber might help them negotiate better prices with those traders. Third, the pooling of financial resources and market intelligence might enable them to secure the capital necessary for them to develop management systems to reduce timber loss in the forest, pre-finance their own transport and operational costs, and install value-added processing to further reduce timber wastage (which is an obligation for concession holders anyway). Finally, there would be necessary improvements to the forest management planning that would help to maintain timber stocks for the future. These options were discussed in some detail at a recent training event designed to facilitate this process through the Testing REDD+ programme in Caia, Mozambique in early 2015 (Macqueen, 2015).

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The advantages of pursuing such models also offer potential benefits to Chinese timber traders. First, there would be more stable access to larger volumes of timber. Second, the improved management planning would enable clearer forecasts of timber volumes – and a more sustainable long-term supply. Third, the enhanced financial base of Mozambican partners would reduce the need for risky pre-financing for forest operations. Better business organisation could also usefully be pursued by Chinese timber trades and concession holders. First, there is a need for such businesses to carefully nurture relationships with the Mozambican government – that would be facilitated by better representational structures. Second, new guidelines and potential timber legality verification schemes emerging out of China might also be more readily engaged with, through some form of group organisation

(see Section 7.2). Third, clusters of businesses that wish to differentiate themselves in terms of sustainability and social investment might be able to develop joint trading arrangements and branding to give them longer-term market advantage (see Section 7.1). A process of engagement with Chinese timber operators led by the government of Mozambique with support from WWF has begun to explore some of these issues – albeit without an explicit emphasis on organisation.

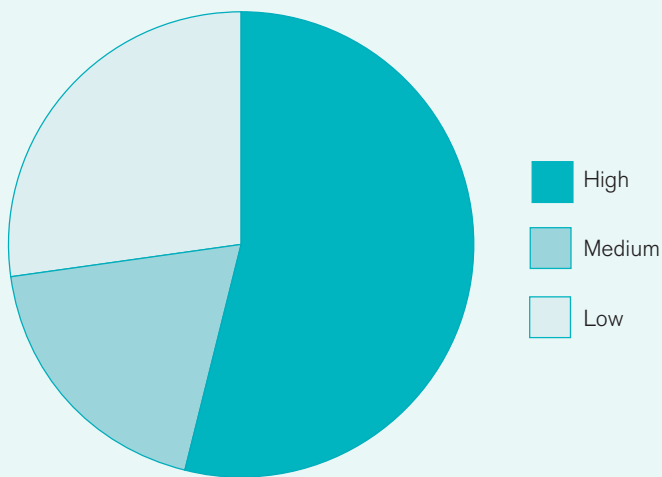
There appear to be considerable advantages, and few disadvantages to pursuing better business organisation among Chinese timber traders, concession holders and their Mozambican partners. Moreover, the government forestry authorities have been actively involved in both of the initiatives described here – lending political will to the prospects of making progress. Additionally, progress in the theoretical understanding of how producer organisations can be supported in the forest sector has been advancing, for example through the recent work of the Forest Farm Facility (see deMarsh *et al.*, 2014).

Box 8. Option: stronger business organisations to reduce costs and enhance dialogue with government

Perception of the authors

Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
*****	*****	****	*****

Option priority as perceived by 26 Mozambican forest experts



4.3 Labour standards

One of the main ways in which Chinese timber traders, concession holders and their Mozambican partners might contribute to development among Mozambique's rural communities is through employment. The terms and conditions of employment in most simple licence and (with a few notable exceptions) concession operations are inadequate. Fath (2001) noted that any substantial improvements in operational or organisational efficiency would require a well-developed professional workforce living and working under adequate conditions – the strong implication being that this was currently not the case. Savcor (2005) painted a similar picture noting that in harvesting, 'workers do not have formal education. The number of basic and medium-level technicians is insignificant. The workers have no specific education either but most of them have obtained certain experience by having worked for a long time in this field'.

Based on recent interviews with simple licence holders and concessionaires, little has changed in the intervening period. Again, with one or two notable exceptions, operators have no trained forest technicians. Nhancale *et al.* (2009) note that for the majority of simple licence holders and other small and medium enterprises, in the absence of any real enforcement of health and safety legislation regarding the installation of sawmills or other equipment, or specific guidelines on the contractual rights and duties of local workers, the quality of these employment opportunities varies greatly. One major issue is that while concession holders are obliged to process timber within Mozambique, most only do token cutting into squares using old and inefficient equipment in order to comply with the legislation (MacKenzie and Ribeiro, 2009). There is no real appetite for 'real' processing, or the skilled labour force development that would be necessary to make that operate efficiently.

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Further difficulties arise because of the lack of clarity about the enforcement of labour laws. This makes the resolution of labour disputes difficult. The majority of local labourers are recruited without formal contracts. The result is often that workers are paid below the national minimal wage, ignoring Mozambican labour laws. There are also issues of illegal immigrant staff and workers – with MacKenzie and Ribeiro (2009) citing the director of immigration who confirmed that there has been almost no control on the entry of Chinese into Zambézia, and an estimated 75 per cent of foreigners in Zambézia are there illegally. They come in on a conventional one-month entry visa, and then do not leave.

The constitution of the Republic of Mozambique guarantees workers the freedom to organise themselves into professional associations or trade unions and their independence in relation to their employers, the state, political parties, churches or religious denominations, and establishes the manner of organisation and management. The forestry industry workers are members of the National Farming and Forestry Workers' Union (SINTAF) or of the National Trade Union for Civil Construction, Woods and Mines Industry Workers (SINTICIM). However, both labour movements suffer from weak financial sustainability and low unionisation levels (it is estimated that less than half of the formal sector is affiliated to trade unions –

and that most workers are not employed formally at all) and trade unions have weak negotiation powers with companies (Blid, 2014).

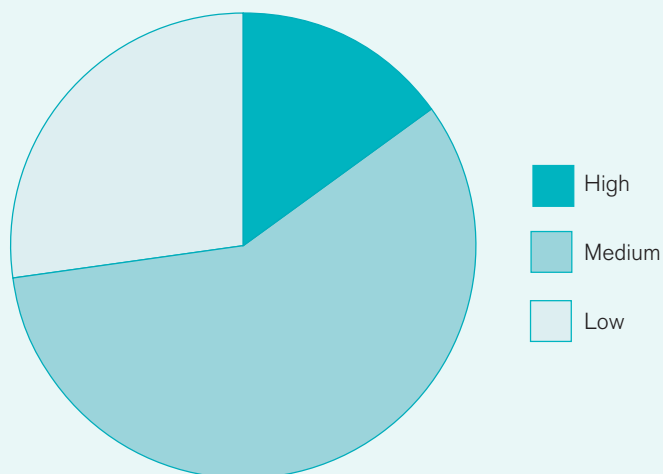
The trade union movement in Mozambique highlights a number of major deficits in Mozambique's general agenda on decent work (OTM, 2014) and the forest sector appears to be no exception. With this backdrop there are clearly opportunities for Chinese timber traders, concession holders and their Mozambican counterparts to improve records, or at least abide by legal wage requirements. This could form part of a general effort to improve operational and organisational efficiency by maintaining and training a more professional workforce. A commitment to do so by those operators could enhance the social license to operate of the companies and improve their operating efficiency. But this would probably only happen if the requirements for forest management and to process timber within country were enforced, thereby introducing serious requirements for a skilled professional workforce.

Box 9. Option: better terms, conditions and training for a professional workforce

Perception of the authors

Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
*****	****	*****	*****

Option priority as perceived by 26 Mozambican forest experts



Risk management

Concerns over the security of the operating environment for timber extraction within Mozambique are likely to have a profound effect on the behaviour of Chinese timber traders, concession holders and their Mozambican partners.

Since the publication of the Forest and Wildlife Act of 1999 (Republic of Mozambique, 1999) and the subsequent law regulations of 2002 (Republic of Mozambique, 2002) that laid out the requirements for concessions and simple licences and the taxes on different categories of species, there have been several changes in legislation affecting the security of the operating environment. For example, consultant analysis of the tax regime recommended major changes (increases) to the taxes for different classes of timber (Rytönen, 2002). Following kick-back by the industry, there were published revisions to the taxes (see Serra, 2007) through Ministerial Diploma 57/03 that actually halved these tax rates, and Ministerial Diploma 96/03 introduced 'gradual payment' terminology (see Macqueen and Bila, 2004).

Subsequent legislative and law enforcement analyses pointed to the presence of a number of gaps to improve the impacts of forest harvesting that required redress through additional legislation or enforcement of existing legislation (see del Gatto, 2003; Johnstone *et al.*, 2005). Despite one attempt in Sofala to enforce the law which restricts most grades of timber exports to processed wood only (not logs), most provinces have failed to follow suit – resulting in a reversion in Sofala. Indeed, the enforcement of in-country processing unfortunately paid no attention to the required import processing diameters of largely Chinese buyers – with the result that far from adding value, the processing of timber in Mozambique actually reduced its value as Chinese processors discounted the waste in re-sawing timber (Ribeiro, 2015).

Very little else was done until a spate of high-profile exposés of the Mozambican forestry sector (Mackenzie, 2006; Mackenzie and Ribeiro, 2009; Ribeiro and Nhabanga, 2009; MF, 2010). This created pressure on government to reform the sector. With staff shortages and a reliance on roadside checkpoints, the main option for greater law enforcement was seen to lie in increasing fines. As a result, 100–600 per cent increases in fines were established through Decree 76/11. Reforms to the unsustainable nature of the simple licence regime were also introduced through Decree 30/12, which redefined the terms of simple licences (repealing sections 16, 18 and 20 of the Rules of the Law of Forestry and Wildlife approved by Decree 12/2002). This now required a maximum of five years to harvest 500m³ of timber annually for up to 10,000 ha for timber with benefits to local communities required to constitute part of the agreement for harvesting. There is a current process of amalgamating the various revisions to the original law and regulations into a single revised Forest and Wildlife Act.

Despite these reforms, further exposés now began to focus more specifically on the growing role of Chinese operators in illegal timber harvesting (EIA, 2013 and 2014; Wertz-Kanounnikoff *et al.*, 2013). With the new government elected in early 2015, there is renewed pressure for further reforms, and potentially even a logging moratorium.

The issue that requires addressing is that each time a change or reform of the law is contemplated, a degree of uncertainty is introduced for Chinese timber traders, concession holders and their Mozambican partners. The consequence of this is the creation of a strong incentive to over-extract and stockpile timber while the existing legislative and enforcement situation holds, as a hedge against future uncertainty. There is potentially a simultaneous decrease in enforcement rigour as authorities wait for the outcome of the reform.

A number of options for incentives exist that might help to mitigate this risk and encourage Chinese timber traders, concession holders and their Mozambican partners to invest in longer-term, more sustainable and beneficial timber-extraction regimes.

5.1 Structured legislative reform processes

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Mozambique has a relatively strong tradition of consultation relating to reforms of forest legislation. A national forest forum established in 2001 continued annually until at least 2011 as a platform for discussing proposed legislative and enforcement issues with both the private sector and civil society (see Macqueen and Bila, 2004). The recent abeyance of that platform resulted in civil society attempts to develop consultation platforms themselves – supported in part by the WWF.

Within such platforms there has historically been a significant sense of political exclusion of Chinese timber traders and concession holders from legislative processes. In part this has to do with cultural and linguistic barriers, and in part due to the disorganised nature and poor records of who these operators are and where they can be contacted.

Nevertheless, in July 2011, a delegation led by the national director of DNTF Mozambique visited China and held meetings with the ambassador of Mozambique to China and senior officials of the Chinese State Forestry Administration (SFA) led by SFA deputy-general director, Mr Su Ming. During this meeting, potential areas for cooperation between SFA and DNTF were identified with the two institutions agreeing to sign a memorandum of understanding (MOU) for cooperation in the forest sector. In 2013 this led to a two-day training in Cabo Delgado, a collaboration between the State Forest Administration (SFA) of China and the National Directorate of Land and Forests (DNTF), featuring 50 participants, mostly Chinese companies involved in forest management and timber trade coming from the eight most important provinces in the country for

timber production. In 2014, this was followed by a further training with sessions to assess the barriers Chinese companies were facing in the forest sector (Ofumane and Kabubu, 2013).

With proposed consolidation and/or reform of the Mozambican forest legislation in view, there appears to be an opportunity to use the platforms created above to reduce, for Chinese timber traders and concession holders, the trauma of legislative uncertainty (and the perverse incentives it might create). For example, if some form of moratorium on log exports were to be proposed, it would make sense to ensure that the required in-country processing reflects the requirements of Chinese importers in China. Similarly, it might make sense for any changes in any of the areas listed in this report to be the subject of careful consultation such that obvious efficiencies could be made. For example, the introduction of any improvements to log tracking might benefit from synergy with the Chinese timber legality verification system being developed by the Chinese Academy of Forestry (CAF) together with the Chinese SFA. Ensuring adequate consultation and phasing in of any new reforms would both help to improve relationships between and perceptions of Chinese traders and government counterparts, but might also enhance opportunities for companies to invest, add value and thereby increase Mozambican revenue streams.

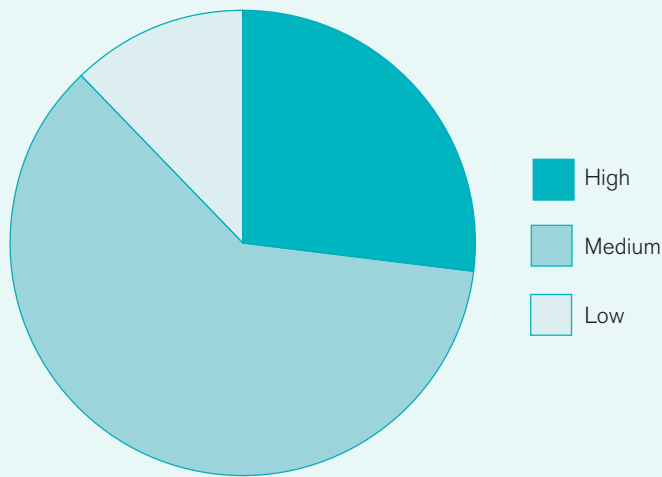
The current translation by CAF of Mozambican forest legislation into Chinese within a country-specific bilateral version of the SFA's *A guide on overseas sustainable forest management and utilization by Chinese enterprises* will help to build awareness of legislation that already exists. It would be possible to translate and disseminate (perhaps through Wechat – a Chinese social media network) proposed revisions to the legislation and orchestrate constructive feedback on the content and timing of any changes. The development of a formal association to represent Chinese timber traders and concession holders might further help this process of inclusive engagement towards better practice.

Box 10. Option: better structured and more inclusive processes of legislative reform

Perception of the authors

Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
♦♦♦♦	♦♦♦♦	♦♦♦♦♦♦	♦♦♦♦♦

Option priority as perceived by 26 Mozambican forest experts



5.2 Legality assurance

A second area in which a reduction in risk might help to lead to better practice by Chinese timber traders, concession holders and their Mozambican partners is that of implementing some form of legality verification assurance system. Leaving aside repeated calls for greater investment in law-enforcement capacity (which could easily be funded from enhanced revenues obtained through that enforcement) a promising option lies in collaborating in the development of a China timber legality verification scheme (see RIFPI and CAF, 2011). This could complement the development of a timber-tracking system within Mozambique that has already been described in Section 2.3.

At present, the draft system that has been developed is little more than an options assessment of the types of scheme that might be developed. These include five main options:

- Bilateral agreements between China and Mozambique based on Mozambican government control of the domestic supply chain and export legality and Chinese government control of imports, processing segregation and exports

to the final destination. These agreements would include developing standardised documentation based on licensed harvest volumes, transit documentation, supply chain segregation checks at processing facilities, and export clearance documentation.

- Control of imports and exports using operator-based supply-chain controls – similar to the above in terms of bilateral agreements but shifting the onus for maintaining documentation prior to export onto timber traders – but with government audits.
- Mandatory control of all exports based on operator due diligence – which would not require bilateral agreement between China and Mozambique but instead rely on a required system of documentation checked by the export and import authorities of the two countries (not yet agreed or standardised).
- Mandatory control of exports to targeted destinations only, based on operator due diligence – the same as the above but only required for destinations that demand legality verification (eg EU or USA).
- Voluntary control of exports based on operator due diligence in response to operator request – which is similar to the previous two points above, but with a verification service available on a voluntary basis for operators requiring it for their final destination (eg EU or USA).

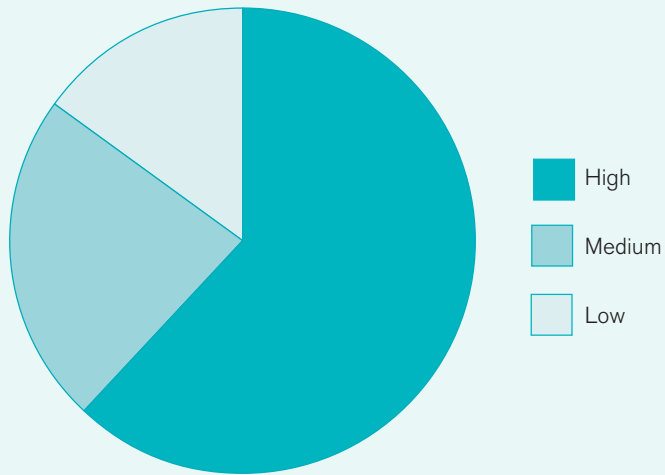
Currently, it is unlikely that China will move towards bilateral agreements with exporting countries (eg it will not follow the Voluntary Partnership Agreement mechanisms adopted by the EU Forest Law Enforcement Governance and Trade (FLEGT) Action Plan). More likely, there will be a move to require due diligence and risk assessment through importing private-sector timber trade associations within China (eg one of first three options). The Mozambique government could support such options by working with Chinese timber traders, concession holders and their Mozambican partners to develop a Mozambican system within which due diligence was possible – one which strengthens law enforcement and revenue collection at the same time. This might require some form of bilateral partnership to finance more frequent field checks of licensed management plans, restrictions on night-time transportation, mandatory checks at container-loading sites, stronger presence of forest authorities in export container checks and loading and so on – all backed by clearer, preferably digitised documentation. The formation of Chinese and potential Mozambican trade associations agreeing to abide by such systems would be a step in the right direction.

Despite the potential of such systems, Mozambique has not historically shown much appetite either for the development of timber tracking systems, or engagement with a FLEGT VPA that would require an internal legality assurance system. Given the reluctance of China to enforce any mandatory import checks on Chinese companies (for fear of stifling the supply of raw materials), this option currently holds little prospect of changing practice given the sector's existing widespread abuse of legal requirements.

Box 11. Option: Chinese timber legality verification scheme

Perception of the authors			
Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
■■■■■■■	■■	■■■■	■■■■■

Option priority as perceived by 26 Mozambican forest experts



5.3 Investment procedures and incentives

A third area in which risk can be reduced for companies is through simplification of and incentives for investment. The New Commercial Code approved by Decree-Law No. 2/2005 simplified company registration in Mozambique and required that companies merely: (i) reserve their company name at the Conservatory of Legal Entities' Registration Office; and then (ii) submit as registration documents a copy of the company name reservation certificate, the company's articles of association, and certified copies of the shareholders' identification documents or passports. Once registered, a company can then proceed with the fiscal registration to obtain the respective tax registration number (NUI) at the fiscal office of the area where the business is located, as well as the operational licences from the entities responsible for the area of the business activities (eg the concession or simple licences discussed in Section 2).

An investment promotion and reciprocal protection agreement already exists between Mozambique and China. A number of investment guarantees and tax incentives are provided for within the Mozambican Investment Law (Law 3/1993). In order to obtain these guarantees and incentives, investors then submit

the application form with the details of their business plan to the Centre for Investments Promotion (CPI) or the Office for Economic Areas with Accelerated Development (GAZEDA) for approval.

The tax incentives code (CBF) (Act 4/2009) provides generic benefits as follows: (i) exemption from payment of customs duties and value-added tax on capital goods classified in Class K of the customs tariff (during the first five years of implementation of the project); (ii) tax credit for investment – with potential deductions of 5 per cent or 10 per cent, depending on whether the investment is in the City of Maputo or in the other provinces, on the total investment actually realised, from the corporate income tax (IRPC); (iii) accelerated depreciation and amortisation – allows accelerated depreciation (up to 50 per cent) of new buildings used in pursuit of the investment project, in determining the taxable income under corporate income tax or personal income tax; (iv) deductions from taxable income and from the assessment for the modernisation and the introduction of new technologies and for the training of Mozambican workers from the taxable income up to a ceiling of 10 per cent or 5 per cent respectively (during the first five years). In addition, according to the forest regulations (Article 25), there exists a tax rebate for those operators whose timber is destined for national industries (such as sawmilling, agglomerated wood, panel production, parquet and so on). The scale of the tax rebate is defined in a subsequent ministerial diploma as 40 per cent of the tax.

At present, most of these guarantees are incentives geared towards attracting inwards investment, albeit some refer to the introduction of processing technology and the training of Mozambican workers. There are few direct incentives for improved practice. For example, the government has not offered any incentives for companies undertaking independent forest certification. This is an area that could be investigated further – exploring possible links to certification or to the implementation of a timber legality verification system (described in the preceding section).

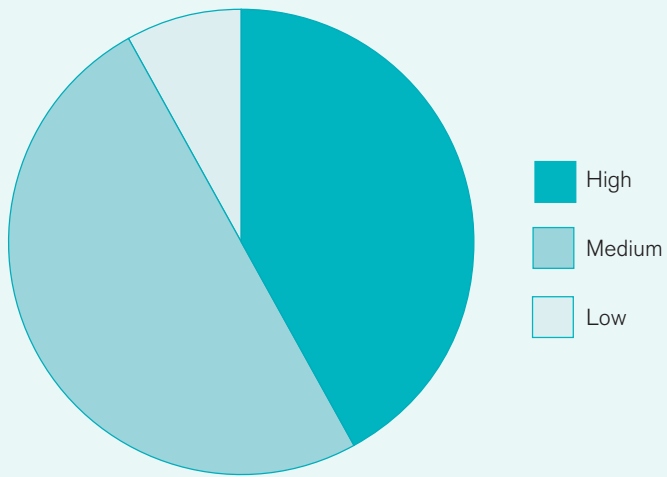
The limitation of any system for incentives linked to certification of verified legality is the large number of Chinese timber traders that would not stand to benefit from such incentives (having no direct management arrangements within the forest). Nevertheless, such incentives could help to transform the practice of the concession or simple licence operators with whom they interact (especially if the latter operators consolidate into concession holdings to secure longer-term timber access rights).

Box 12. Option: investment incentives linked to certification or legality assurance systems

Perception of the authors

Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
●●●●●●●●	●●●●	●●●●	●●●●●

Option priority as perceived by 26 Mozambican forest experts



Operating efficiencies

Concerns over operating efficiencies are likely to provide a further lever through which to improve the practice of Chinese timber traders, concession holders and their Mozambican partners. Recent reviews of the actual situation of the forest industries of Mozambique (Savcor, 2005b) demonstrate that the vast majority of workers in the Mozambican forest industry have no formal education at all (95 per cent in Sofala, 99 per cent in Zambézia and 91 per cent in Cabo Delgado) and only one operator in Cabo Delgado had a higher (university-level) education. This reality has implications for the sustainability and operational efficiency affecting Chinese timber traders, concession holders and their Mozambican partners.

The lack of operational capacity is perhaps felt most keenly in the area of forest-management planning. Both concessions, and, to a more limited extent, simple licence holders have to develop a management plan. The content of such management plans is laid out in a working document issued by DNTF in 2002 and then revised in 2006 (Sitoe and Bila, 2006). Following initial problems in the elaboration of management plans by the industry itself the 2002 regulations specified that a management plan (then restricted to concessions) had to be elaborated by a qualified forester at university level. This requirement should ideally have improved the quality of some of the management plans but with demand far outstripping available consultants to write the plans, the price escalated at one point to almost US\$10,000 per management plan – and even where plans were of passable quality, there was no capacity within the industry to interpret or use them. Dedicated programmes of capacity building, or indeed requirements that timber operators employ at least one staff member with the capacity to write and implement management plans, might help to improve operational efficiencies and sustainability.

A second major area in which operational capacity development is necessary is in the area of timber processing. One of the obligations for concession holders within the country is the installation of a processing industry (Law 10/1999, Article 16 and Regulation 12/2002, Article 26). This legislation categorises Mozambique's 118 commercial timber species into first, second, third, fourth, and 'precious' classes, reflecting quality, uses, demand intensity, and establishing relevant taxes. Importantly, the 22 'first-class' species are banned from export in log form, and require processing within Mozambique before they can leave the country. The intention is that value is added within Mozambique to the first-class timber products originating from forest concessions.

As noted above, to encourage local processing, the most valuable (Class 1) species are reserved for local processing at royalty rates that are at most only 25 per cent of those for export logs. In addition, a royalty rebate scheme (a rebate of a further 40 per cent of royalties for veneer and parquet flooring) encourages higher added-value processing. Fiscal incentives – duty-free imports – are also available for the

initial investment in wood-processing equipment. To date, however, processing has focused on low added-value sawmilling to produce rough-sawn green timber of a limited number of high-value species. Investment in modern tertiary wood processing (eg kiln drying, veneer, plywood, mouldings, joinery, and furniture) has been limited (Ogle and Nhantumbo, 2006). While old and obsolete machinery is being replaced by mostly second- or third-hand items from abroad (Savcor, 2005a), the investment levels continue to be low in part because of the absence of institutional credit facilities and due to the relatively high costs of entering into the concession business (costs of the forest inventory and management planning described above). The use of old and obsolete equipment being replaced by second- and third-hand items from abroad clearly shows that logs are too cheap – and that economic operators substitute raw material for investments in equipment. A major fiscal adjustment is needed to realign incentives in this respect.

Another key issue is that timber processed to required thicknesses actually sells for less than logs or square-cut timber in China (where standard thickness planks have to be re-sawn – owing to the low quality of Mozambican processing). Unsurprisingly, therefore, many attempt to circumvent the processing requirement through timber smuggling. This is evidenced for example in the discrepancies between Chinese imports (which in 2012 registered 323,000 cubic metres of Mozambican log imports) and Mozambican exports (which over the period amounted to merely 41,543 cubic metres) (EIA, 2013).

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A number of options for incentives exist to improve both the management capabilities and processing capacities of Chinese timber traders, concession holders and their Mozambican partners. These include extension and training in forest management, trade-oriented capacity building, investment programmes for timber processing and minimum requirements for qualified staff among timber operators.

6.1 Extension and training of operators in forest management

A first essential area in which operational capacity development might lead to better practice by Chinese timber traders, concession holders and their Mozambican partners is in the area of sustainable forest management. Mozambican forests belong to the coastal forests of Eastern Africa – broadly synonymous with the forests of White's (1983) Zanzibar-Inhambane regional mosaic (Burgess and Clarke, 2000). These forests form a distinct area of plant endemism between the Limpopo River and the equator. Locally known as miombo – a term which refers to forests dominated by tree genera of the *Caesalpinioideae* legume subfamily *Brachystegia*, *Julbernardia* and *Isoberlinia* (Campbell, 1996) – these forests are biodiverse and contain an estimated 8,500 species of higher plants, of which over 54 per cent are endemic (Sedano *et al.*, 2005). Different types of miombo are shaped by rainfall, soil characteristics, and human factors such as agriculture, grazing and fire. Dense mature forests in which canopy cover can reach >80 per cent with a total commercial volume of up to 150m³/ha are rare (<10 per cent of the forests) and productivity is generally low, from 2.0 to 4.8m³/ha/year for

all species (much less for commercial species) depending on the range from dry open woodland to wet closed-canopy forest (Marzoli, 2007; Campbell *et al.*, 2007). Moreover, the dominant species are not currently in commercial demand – and only five species make up 90 per cent of commercial trade: *Azelia quanzensis* (chanfuta), *Pterocarpus angolensis* (umbila), *Millettia stuhlmannii* (jambirre or pangapanga), *Combretum imberbe* (mondzo), and *Swartzia madagascariensis* (pau ferro).

An important point to make is that the ecology and management of miombo forests are still not well understood. With such few commercial species being extracted, sustainable management normally discards clear-fell in favour of either selective logging or coppice management with or without enrichment planting (as many miombo species coppice well and the regeneration can be enhanced by leaving 'standard' trees for seed and managing coppice – Chirwa *et al.*, 2008).

Within such systems there are some obvious ecological imperatives. The first is to respect the minimum cutting diameter at breast height (smaller trees are left for future harvests) – which for the five species named above are: *Azelia quanzensis* (50cm), *Pterocarpus angolensis* (40cm), *Millettia stuhlmannii* (40cm), *Combretum imberbe* (40cm) and *Swartzia madagascariensis* (30cm). Second, some form of annual block-harvesting system needs to be in place where the number of annual harvesting blocks is equal to the number of years it takes for the cut trees to regenerate and reach harvesting size, also known as the cutting cycle. Cutting cycles for miombo woodland are difficult to determine because of site variation and the range of species harvested (each has its own growth rate). Nevertheless, even in the better, wetter sites, the cutting cycle will exceed 25 years for poles and small dimension logs and 40 years for commercial timber (Shackleton and Clarke, 2007). Indeed, in recent estimates of growth rates of three commercial species (chanfuta, jambirre and umbila) an applied cutting cycle of 40 years seems to be somewhat short, and the studied species may need 75–100 years to reach the minimum allowable cutting diameter (Mate, 2014). Third, enrichment planting or coppice management is needed because of the limited number of species bearing the brunt of commercial pressure. Finally, on-site processing to reduce transport costs and optimal use of branch material, offcuts and residues (eg for charcoal or small-dimension crafts) and NTFPs greatly helps to improve economic efficiencies. Simple licences, with only a five-year time horizon, offer little prospect for ecological sustainability.

Advanced concession-based systems of block management that respect minimum cutting diameters and involve enrichment planting and coppice management and on-site processing which makes optimal use of timber residues and offcuts, have been developed within Mozambique (eg by TCT Dalmann in Caia). But the software and field-management practices used are little known across the industry. TCT Dalmann asserts that its system is not implemented to appease law-enforcement officers (although it does indeed serve that purpose), but instead allows it to enhance its operating efficiencies and thereby maximise its profits while maintaining long-term sustainability for the industry. This approach differs

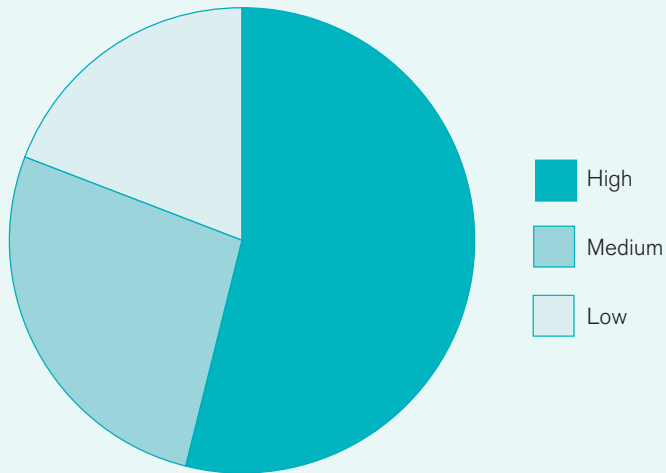
widely from the short-term cut-and-run mentality of many operators. Nevertheless, in combination with a range of other incentives described in this report, it might be possible to offer vocational training in sustainable forest management in association with practitioners such as TCT Dalmann to improve the operating efficiencies and returns to Chinese timber traders, concession holders and their Mozambican partners.

Box 13. Option: training in sustainable forest management and harvesting efficiency

Perception of the authors

Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
****	*****	**	*****

Option priority as perceived by 26 Mozambican forest experts



6.2 Trade-oriented capacity building and investment programmes for timber processing

A second area of incentive to improve the practice of Chinese timber traders, concession holders and their Mozambican partners is linked to improved operator capacity development and lies in the area of timber processing. There are currently widespread abuses of the forest law and regulations mandating in-country timber processing for first-class timber species (into which class falls all five of the major export species described above). Putting aside outright attempts to evade government revenue collection, there is still a strong commercial logic in avoiding demands to process timber, in that the price in China for sawn timber is actually less than that for logs or square-cut timber. This strange situation arises because the preferred dimensions and quality of cut prescribed by Chinese timber processors are rarely met by Mozambican exporters. The result is the need to recut imported sawn timber at a cost to the importer or processor (hence the lower price offered by those importers). The quality of sawmilling within Mozambique using second- or third-hand equipment simply struggles to meet the requirements of Chinese timber traders.

As noted above, there are some incentives in place to favour local processing, such as lower royalty rates, royalty rebates for particular products and fiscal incentives such as tax waivers on imported processing equipment. But the non-enforcement of restrictions on log exports and the absence of disincentives to suppress token processing prevail within Mozambique. Also missing is some form of structured engagement with the main Chinese buyers to develop guidelines and capacity development for timber processing (including kiln drying etc.) that minimise the need for costly re-sawing after the timber reaches China. As noted by the investment analysis of concessionaires wishing to develop processing capacity (Savcor, 2005a), the best option appears to be processing at the concession site – because the cost savings of not transporting logs to the city outweigh the costs of diesel to fuel the generators to supply electricity. But the best outcome is achieved when additional value-adding elements are factored into the processing (eg furniture manufacture either in the city or at the concession site). The challenge is to ensure investment into these value-adding forest business elements, rather than into alternative investment options such as agriculture or commerce. Savcor (2005a) notes, however, that in addition to the investments required, there is also a need for skills and knowledge of technology, marketing and business management. It is these areas that could potentially form the main focus of an incentive programme that would improve the practices of Chinese timber traders, concession holders and their Mozambican partners. There exist within Mozambique experienced business managers who already possess the business and managerial skillsets to conduct risk assessments on potential investments and install or oversee value-adding processing. A commitment to vocational training in this area might prove attractive – in combination with other incentives that strengthen the requirements for in-country processing.

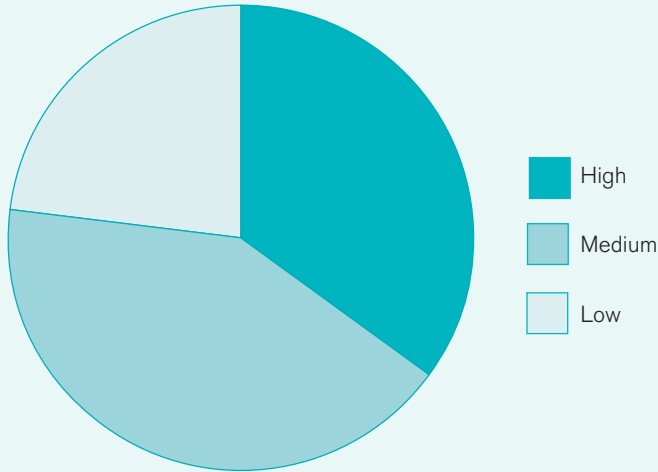
An additional area that needs exploring is to what extent the clustering of simple licence holders into concession-holding processing industries could be supported through targeted investment programmes or capacity-building support. At present, simple licence holders primarily supply logs to traders, and their low costs associated with chainsaw lumbering and transport give them a market advantage over concessions that have to invest in processing. But with resource access becoming an increasing constraint, there are voluntary moves towards associations of simple licence holders that wish to consolidate their future through applications for a joint concession. Providing capacity-building support for the investments in processing technology that would enable that transition is another key area which might improve the practice of Chinese timber traders, concession holders and their Mozambican partners.

Box 14. Option: training in processing technology, investment and business management

Perception of the authors

Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
■■	■■	■■	■■■

Option priority as perceived by 26 Mozambican forest experts



6.3 Insistence on minimum qualifications for qualified staff

A final incentive to improve the practice of Chinese timber traders, concession holders and their Mozambican partners and linked to improved operator-capacity development, is legal requirements for certain operator capacity among concession holders. This might, for example, include a requirement for at least one university forest graduate to oversee management-plan preparation and implementation. It might also include a qualified business manager within any timber-processing facility.

By including such requirements in the law, it would be possible to circumvent the current practice of management-plan development by external experts, often from universities rather than forest businesses. This current practice relegates management planning to a paper exercise for compliance with the law, rather than elevating it to a tool for improving business efficiency and improving environmental sustainability. A requirement for a minimum qualification threshold for education in forest management would at least open up the technical possibility that the law could be implemented as it was intended.

It would be interesting to assess whether other options exist that might encourage on a more voluntary basis the employment of more technically qualified foresters in Chinese timber traders, concession holders and their Mozambican partners. One possible incentive might be linked to forest certification – that requires the attainment of technically complex principles and criteria (see Section 7.2).

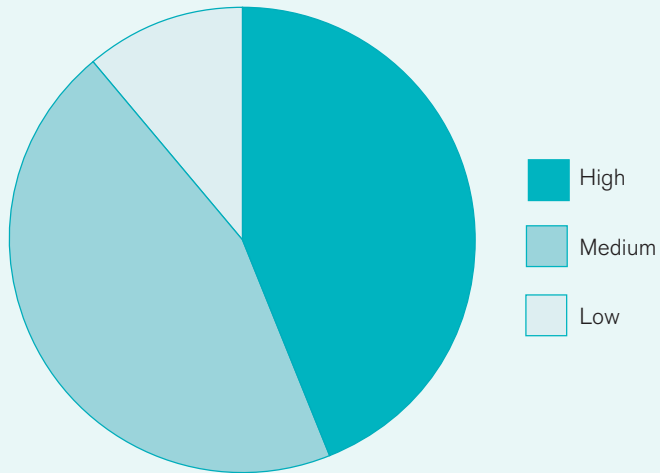
The feasibility of making such a small adjustment within Mozambique is high – it would after all require a small adjustment to the existing forest law and regulations. Whether there is the will to do so remains to be seen.

Box 15. Option: insisting on minimum qualifications for qualified staff

Perception of the authors

Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
*****	*****	*****	*****

Option priority as perceived by 26 Mozambican forest experts



Branding and reputation

Concern over reputation with customers (brand identity) is a further area within which to create incentives to improve the practice of Chinese timber traders, concession holders and their Mozambican partners. It is well known that there are multiple dimensions to the information that customers link with a particular brand. These include awareness of the company and its products, awareness of attributes associated with company behaviours and products, personal values that people attribute to those behaviours and products, visual images that they associate with the former, thoughts and responses to those images, feelings that result, and finally, summary judgements about whether to purchase from that company or not (Keller, 2003). There are of course many ways in which to alter customer perception by changing the sort of information that is publicly available about the company in question – including through the use of imagery and promotion. What is of interest here is using an understanding of branding to try and engage companies to improve practices in a way that also improves commercial returns.

The brand identity of the Mozambican timber industry could scarcely be worse. Regular social and environmental exposés of malpractice have tarred all but those visibly differentiated from the norm. What might be possible, however, is to engage a group of Chinese timber traders, concession holders and their Mozambican partners to similarly differentiate themselves from the current Mozambican brand identity by forming an alternative 'brand community'. A brand community is defined by three traditional markers of community: a shared consciousness about what they are, agreed traditions of practice, and a sense of moral responsibility (Muniz and O'Guinn, 2001). It is governed by an agreed code of practice (whether or not this is written down).

There are three main routes towards the creation of a brand community based on improved practice that can offer gains to both Chinese operators and the Mozambican context:

- i. A national private-sector group with its own standard or charter of behaviour (potentially linked to the Chinese guidelines for timber enterprises within Mozambique)
- ii. Individual company affiliation to some broader brand community (eg through certification to an international standard such as the Forest Stewardship Council or Fairtrade labelling organisations), and
- iii. Independent public recognition of a particular company or group of companies for improved practices linked to some visible public award.

The key question is whether and to what extent Chinese traders, their customers, and ultimately the end consumers might benefit from, and thereby be willing to engage in, one or other of these alternatives. Three important issues are likely to define which, if any, of these options is pursued: customer awareness; confidence; and willingness to pay. We consider these in turn below.

The first issue is one of customer awareness. For the first route (a national private-sector grouping around improved practice) and to some extent the third route (independent national awards for good practice), considerable work will need to be done both to agree the criteria for membership or award giving, and second to develop a widely recognised brand/logo whereby information about those criteria are effectively embedded in the customers' decision making. For the second route, (affiliation to an existing standard) this process of definition and awareness building has already been undertaken to some extent by the parent bodies of existing certification schemes. It is no small matter to build customer awareness about the practices of a particular group of companies. For example, in 2015, the FSC launched a new global brand Forests For All Forever – with FSC Director General Kim Carstensen commenting:

The success of FSC has always depended on consumer awareness and demand for FSC-certified products [...] However, it became clear that we needed to provide our partners with tools that could inspire their customers to choose FSC – an identity that would connect with consumers and be memorable in the retail space (FSC, undated).

If the globally most-recognised forest certification scheme is grappling with low customer recognition after 22 years of operation – the extent of the challenge is clear.

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The second issue which any brand community would have to contend with is consumer confidence. As noted above, confidence in the sustainability of Mozambican forestry operations is at a historic low. Rebuilding consumer confidence would probably require some form of independent audit of company practices. Given that this is costly and already inherent in the second route (affiliation to an existing standard), it might reasonably be asked what the benefits of opting for either route one or route three would bring. Nevertheless, we must remember that the primary consumer of Mozambique's timber is the Chinese trader, and only secondarily the global consumer of Chinese-processed timber products. Might route one or route three, backed for example by tougher due diligence linked to the Mozambique-specific Chinese guidelines, therefore provide an interim trajectory in restoring consumer confidence?

The third issue is one of willingness to pay. Abiding by Mozambican legality in order to gain entry to any of the three routes described above would put any brand community for improved practice at a cost disadvantage compared with the current practice of Chinese timber traders, concession holders and their Mozambican partners. Would Chinese importers be prepared to pay the difference to ensure that their supply of timber was 'legal'? The answer to that question probably depends on whether the Chinese State Forestry Administration puts pressure on Chinese importers to undertake due diligence. In the three sections below, therefore, we explore in more detail what might be possible around the area of brand development.

7.1 Establishing brand community groups and codes of practice

Might brand development – the need to distinguish the good from the bad among Chinese timber traders, concession holders and their Mozambican partners – incentivise better practice among a group of those operators? The formation of commercial forestry groups or associations within Mozambique is certainly not new. Many provincial-level timber associations such as the Commercial and Industrial Association of Sofala Province (ACIS) have long been formed (see Nhancale *et al.*, 2009) and are affiliated to the Federation of Economic Associations of Mozambique (CTA). Yet to date, these have functioned primarily as marketing agencies or lobbyists for the industry with provincial or national government, rather than as brand communities keen to improve the reputation of their products.

Within Mozambique there also exists the Industrial Forum for the Environment (FEMA), a non-governmental organisation established in 1996 by more than 50 of the country's largest private companies with a view to collectively support the private sector in environmental issues. Yet to date, there is no specific forest sub-grouping within FEMA and only two forest-sector companies belong: the matchmaking company Fosforeira de Moçambique and a timber company Moçambique Florestal. Nor does FEMA have a particular set of forest standards or a brand through which to promote them. Nevertheless, the existence of FEMA shows some commitment towards environmental sustainability among the bigger companies.

Without any other existing group to draw on, the creation of a brand community for improved practices in forestry would be a pioneering initiative – and the motivation to establish such an entity would have to come from the Chinese timber traders, concession holders and their Mozambican partners themselves. A group of Chinese operators might wish to distinguish themselves in the marketplace, if only to manage future risks associated with the possible toughening of import regulations on the Chinese side. It is also possible that they might be able to support the development of an equivalent grouping on the Mozambican side – perhaps with some of the simple licence operators who wish in turn to secure longer-term concession access to forest resources.

Credible differentiation in the marketplace would at least have to include some commitment to compliance with Mozambican laws (which is itself the first of FSC's ten principles). But they might also want to think through what other commitments they could offer against the nine other FSC principles which cover workers' rights and employment conditions, indigenous peoples' rights, community relations, benefits from the forest, environmental values and impacts, management planning, monitoring and assessment, high conservation values, and the implementation of management activities.

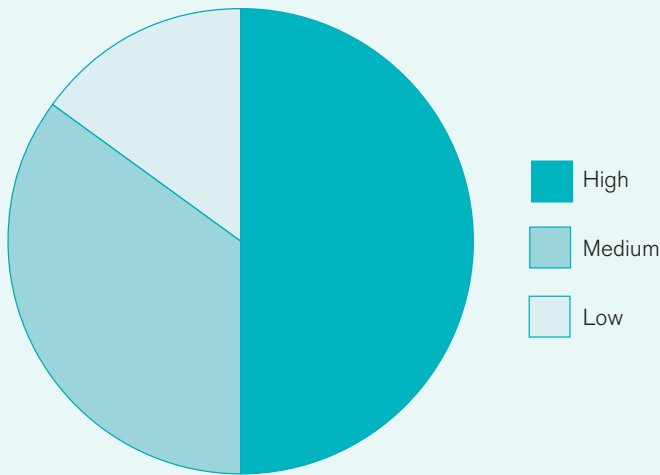
The development of a brand community would also require some form of logo development, use guidance and promotion. This might initially be tailored for the Chinese market and linked perhaps to membership entry requirements into some form of trading association. Whether that is feasible and can be discussed and organised is still very much at the hypothetical stage.

Box 16. Option: creating a brand community group for improved forestry practice

Perception of the authors

Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
****	*****	*****	*****

Option priority as perceived by 26 Mozambican forest experts



7.2 Affiliation with certification schemes

A potentially much quicker route to brand development that would involve improving practice would be certification against an existing standard such as FSC or the Programme for the Endorsement of Forest Certification (PEFC) – the two major global schemes. Mozambique has some track record with the former, but has not explored the latter. As early as 2002, a national workshop on forest certification in Mozambique was convened (Taquidir, 2002). By 2010, the Association for Responsible Forestry in Mozambique (AGREF) had been set up, and a working group led by TCT Dalmann established, en route to the national office for FSC in Mozambique. This eventually bore fruit, leading to the development of a ‘forest management standard for Mozambique’ (SGS, 2015) which specifies precisely what companies need to do to attain certification that would be independently audited by companies (in this case SGS, the world’s leading inspection, verification, testing and certification company).

This in turn led to actual certification of two companies by 2013, to include a total area of 51,000 ha of forest (FSC, 2013) – but one of which did not pursue updating their certified status because of lack of market demand (White, G. conversation

with author, 2015). Four companies currently have valid FSC certificates: Niassa Green Resources; Mpingo Madeiras Lda; Lurio Green Resources SA; and LevasFlor Lda. However, most are plantation companies and do not export to China, instead targeting international markets elsewhere.

A first challenge for using brand development through certification as an incentive for better practice in Mozambique is that both sustainable forest management, and the process of obtaining FSC certification, are costly. The former is costly because FSC companies have to forgo higher volumes in search of ecological sustainability. The latter is costly because the companies have to bear the cost of independent audits. In a recent global market survey of 2,623 companies that had had FSC certification for more than one year, the biggest reason for maintaining FSC certification was cited as market access (43.5 per cent of respondents), followed by reasons relating to corporate commitments to sustainability and responsible forestry (38.4 per cent and 23.7 per cent) and competition from others offering FSC products (10.3 per cent). Only 3.9 per cent of respondents cited getting a higher price for certified products as a reason for maintaining FSC certification (FSC, 2014). In other words, any price premiums are unlikely to compensate for the higher costs of obtaining FSC certification. Of course, there are other advantages of certification, such as better commercial lending conditions.

The second challenge for the use of brand development through certification as an incentive for better practice is that Chinese market demand for FSC-certified product is still low. No existing Chinese forestry company or timber trader is insisting on FSC certification to meet customer demand in China. This is not to say that there are no moves in that direction. Indeed, internal Chinese forestry reforms (see Xu *et al.*, 2010) have led to the highest afforestation rate of any country in the globe, and the new Chinese Forestry Certification Scheme (CFCS) was in 2014 endorsed by the PEFC. FSC certification has also been steadily rising. The first FSC chain of custody (CoC) and forest management certificates were issued in 1999 and 2000 respectively. By 2013, there were 3,278 CoC certificates (FSC, 2013) and by 2015 there were more than three million hectares of FSC-certified forest in China. Consumer awareness had risen such that 34 per cent of customers were at least aware (and 15 per cent were very familiar) with the FSC scheme (FSC, 2015).

Unfortunately, the evidence for FSC certification being used as a lever to improve practice (rather than to distinguish already good practice in the marketplace) is rather thin on the ground. One of the leading critics of FSC certification working at The Forest Trust, which promotes sustainable forest management, cites a long list of FSC failings, among which the most telling perhaps is an endgame of membership rather than transformation (Poynton, 2015). Given the fact that even leading natural forest companies in Mozambique that were FSC certified have not renewed their certification, the prospects for using FSC as a lever for incentivising better practice look slim. Nevertheless, market demand from China might change all that – and, if linked to a branding community of companies committed to better

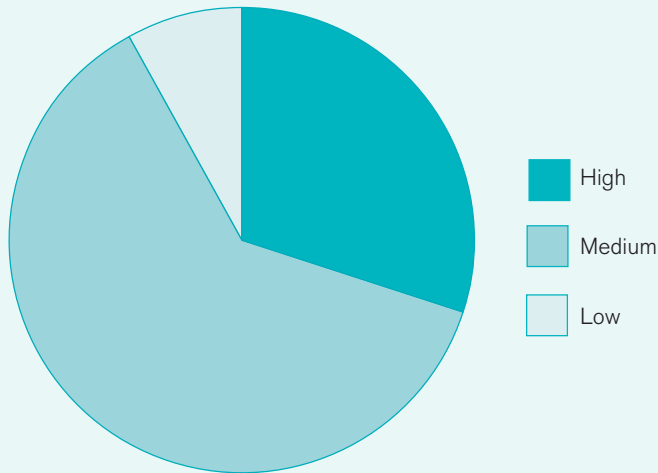
practice, there might in the future be more grounds for optimism. Similarly, if more stringent checks during the process of licence renewal within Mozambique improve the uptake of sustainable forest management, the gap between current practice and FSC-certified practice might diminish along with the associated implementation costs.

Box 17. Option: creating a brand community group by affiliation to a forest certification scheme

Perception of the authors

Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
■■■■■	■■	■■■■■■■	■■■■

Option priority as perceived by 26 Mozambican forest experts



7.3 Independent national awards for good practice

A final route towards brand development that might provide an incentive for improved practice among Chinese timber traders, concession holders and their Mozambican partners would be the development of independent national awards for better practice. Customer awareness and confidence in the scheme would be important initial considerations. It might for example be necessary to ensure that some of the civil society organisations responsible for recent critiques of the forest sector in Mozambique should oversee the design, criteria and selection process for making such awards – to counter possible accusations of corruption or vested interest (that have been regularly levelled at certain figures within government and the private sector).

There is some precedent to draw upon in thinking about independent awards for environmental progress within Mozambique. For example, the SEED Sustainable³ awards for promoting entrepreneurship in sustainable development have been active in Mozambique for ten years (but within a regional context). Supported by the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP) and IUCN, this award has relatively widespread recognition, but is too broad by sector and geographically to provide a strong motive for improving practice among mainstream Chinese timber traders, concession holders and their Mozambican partners.

What might be considered instead is something more equivalent to the Proudly South African label⁴ that targets the national origin (and thereby reputation) of a product – while adding in specific criteria relating to legal compliance and beyond (much as a brand community might do in Section 7.1). On its website, Proudly South African (undated) highlights the benefits of such a scheme:

Members of Proudly South African share a commitment to an uplifting ethos that promotes social and economic change and progress. They are acknowledged for their quality products and services, identified through the Proudly South African logo – an internationally recognized signifier of a proud and dignified country-of-origin brand. The Proudly South African Campaign also brings important benefits that boost members' marketing efforts, promote their products and services in the marketplace and present new business opportunities by keeping members in touch with one another and by providing support with procurement and tendering.

Were it to be possible to advance an equivalent 'Proudly Mozambican' award and logo for companies which agree to comply with a set of criteria, it might be possible to convince companies of the merits of improving practice so as to gain access to the scheme. But the credibility of the scheme would have to be above reproach so as to avoid being discredited to the further detriment of the Mozambican timber brand. Such a scheme would also suffer from the considerable disadvantage that

3. See: <http://seedsustainable.com>

4. See: www.proudlysa.co.za

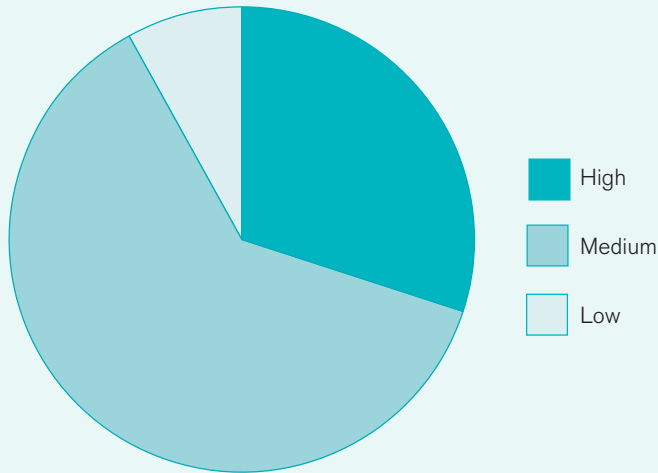
Chinese customers would find much fewer benefits for the use of such a logo in the multiple international markets with which they are engaged. Nevertheless, if launched with enough visibility, it could complement some of the other incentive options described above.

Box 18. Option: creating a brand community group through independent good practice award scheme

Perception of the authors

Likely impact on improved practice	Feasibility within Mozambique	Benefits for livelihoods and forests	Priority
****	****	****	****

Option priority as perceived by 26 Mozambican forest experts



Priority interventions to improve forestry practice

Improving the practice of Chinese timber traders, concession holders and their Mozambican partners has often been approached through the limited lens of better law enforcement. While better law enforcement is certainly one option for addressing these issues, and indeed one that most Mozambican forest experts support, there are a large range of other options to incentivise better practice. Stimulating a constructive discussion about what these other options might be is the main purpose of this report.

The underlying rationale for this broader discussion is that Chinese and Mozambican timber businesses, like any other businesses, are seeking to achieve particular objectives at acceptable risk levels. In order to achieve their objectives they are concerned about particular things that they value:

- Resource access
- Revenue flows
- Business relationships
- Risk management
- Operating efficiencies
- Branding and reputation

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Achieving these values is integral to running a successful business. But because business managers are concerned about these areas, interventions to facilitate or deny access to those values can form powerful levers to improve business practice. Moreover, aligning incentives in several of these value areas to encourage businesses to improve particular elements of their practice will improve prospects for beneficial change. So, for example, making forest access conditional on third-party certification (as has been tried in Guatemala) could be complemented by tax incentives for certified companies, which could be further supported by trade fairs for buyers of certified timber to open up new business relationships. This could be accompanied by longer-term concession terms for certified companies to reduce perceptions of risk, programmes to train operators in reduced-impact logging to improve operating efficiencies, and national efforts to promote Mozambique as a country at the forefront of sustainable logging. The more alignments between the different areas of incentive there are, the greater the chances of beneficial change.

Achieving such strategic alignment requires a rather sophisticated approach to forest governance. It requires the development of a combined package of incentives and approaches that aim to nudge operators in a particular direction. Fortunately, there is currently an ongoing process of law reform within the Mozambique forest sector. This is based on the combined knowledge of national experts backed by a significant body of written evidence (such as DNTF, 2013).

The ongoing process is designing a new Forest Policy and Strategy (Política e Estratégia de Florestas 2016–2026) and also a funding programme in support of that new policy (Projecto Floresta em Pé) and a new Forest Law. The policy and strategy laid out in the first draft had one main objective:

- Promote the protection, conservation, restoration, use and value addition of forest resources across a diversity of goods and services in a rational, responsible and transparent way, to the economic, social and ecological benefit of Mozambicans in the context of sustainable development, and building resilience to climate change.

This general objective is broken down into a series of four specific objectives:

- Environmental objective: to ensure the protection, conservation, restoration, value addition and sustainable use of forests (forest resources)
- Social objective: to promote active and responsible participation of local communities in sustainable management of forest and equitable sharing of benefits
- Economic objective: to increase the contribution of forests to economic development (the economy) both national and local, and
- Institutional and legal objective: to enhance/strengthen/improve the institutional, legal and operational practices for the sustainable and transparent management of forests.

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In order to deliver against these objectives, there will need to be a thorough process of discussion with operators about governance options that create incentives for both Chinese and Mozambican operators to abide by the spirit of the new legislation. Such a process of consultation is now contemplated by the government of Mozambique following the second draft of the new Forest Law – and if taken to the provinces may yet provide a means of agreeing a way forward that will benefit all parties for the long term. It is towards the definition of these specific governance options that this report has attempted to contribute.

8.1 Discussion of the prioritisation process

The categories and types of incentives presented in this research provide a tool for the process of improving the management and use of the resources in Mozambique. The methodology used in this report did not allow for a national representative sampling of forestry expertise and thus cannot be expected to give a perfect picture of the perceptions of the experts in the forest sector. Nevertheless, the results of this study provide some indications about which incentives might be developed further in Mozambique.

Because every individual will have a different perception of priorities (eg see Figure 3 below) the priorities put forward in this report must not be considered as something fixed or immutable. The numerical figures in Figure 3 merely indicate a sequential numerical ranking of the relative importance of each option as seen from the perspective of that interviewee. The method does not allow interviewees to weight as particularly important certain options relative to other options. Nor does

the method provide any commentary on the economic feasibility of each option within the prevailing macro-economic environment (market demand for wood, operational costs and economic activities) – nor the political desire to improve the current situation of forestry sector policies and strategies by all actors.

Those who participated in the survey of possible incentive options felt that policymakers in Mozambique could make use of this incentive framework as a tool to promote sustainable conservation and use of natural resources. It could also be used to help accelerate the approval of some key outstanding legal decrees such as the reforestation tax (Law No 10/99 of 7th June) that is not yet implemented because is still waiting for approval, and closer monitoring of other provisions such as the 20 per cent of forest tax that should be channelled to communities.

One of the observations in conducting the surveys was that to understand each of the options, participants needed to have a firm grasp of forest management and governance issues and the hard economic implications of each of the options, alongside intimate exposure to the actual situation within the forest context in Mozambique. Even with a highly educated audience for this survey, there was a need to elaborate and spell out each of the options in some detail. The problem is particularly acute in the area of economic analysis of the implications of some of these options – which few in the forest sector (including the authors of this paper) fully grasp. This may require further specialist inputs to interpret for government decision makers whether and how best to implement some of the options favoured by sectoral experts. With only a cursory understanding, it would be possible to overlook some options that might in fact offer good prospects for delivering beneficial change. This observation suggests that there may be some need for training in policy options and incentives for good forest governance.

Another observation was that there may be quite different perceptions of priority between different stakeholder groups. For example, there was a general tendency for government forestry staff to emphasise options to do with resource access and law enforcement. Research and technical experts tended to be more open to financial incentives. Private-sector actors naturally emphasise operational training and support. What we have not yet been able to do is to gather the opinions of Chinese business people – but there is a process under way to do just that.

Figure 3. Ranking of all 18 incentive types by 26 forestry sector experts adjusted to display only the first five priorities

Incentive categories and types	Private sector experts					NGOs experts							
	1	2	3	4	5	6	7	8	9	10	11	12	
1. Resource access (concerns over future resource access and stewardship)													
1.1		4	3		4		1						
1.2		5	2		3		5	3			2	2	
1.3		1	1		2			2			1	1	
2. Revenue flows (concerns over future material prosperity)													
2.1				1		1							
2.2							4						
2.3					1	2		5			5	5	
3. Business relationships (concerns over conflict-free relationships)													
3.1								1			3	3	
3.2	4			2		4			5				
3.3									1	3			
4. Risk reduction (concerns over security of operating environment)													
4.1			5						4				
4.2		3	4			3		4			4	4	
4.3	3	2				5	5			5			
5. Operational capacity development (concerns over operating efficiencies)													
5.1				1			3						
5.2				3						4			
5.3	2			4			2		2	2			
6. Brand Development (concerns over reputation with customers)													
6.1	1												
6.2				5					3	1			
6.3	5			2									

1st Cells indicate the 1st highest priority option

2nd Cells indicate the 2nd highest priority option

3rd Cells indicate the 3rd highest priority option

Note: in some cases respondents did not prioritise between their first five priorities and the authors have randomly assigned a sequential numbering to them.

Government experts														Research and teaching institutions experts											
13	14	15	16	17	18	19	20	21	22	23	24	25	26												
		3									3		4												
3	1	3		2	5				1																
	2		1	1	2				4	2		2													
					4		1	1		5															
						5			3		2		3												
			3	3																					
			4						2			4													
						2					5		1												
				4		1																			
			2	5			4	4			4	1													
4							2	2																	
	2		2	5		2		5	5		3		5												
													2												
1		1			3						4														
					1	3				1			5												
5	4	4					3	3			1														
		5				4			5			3													

8.2 Discussion of the main findings

From the initial literature review work, a first observation is that despite many options, there are no stand-out miracle cures for the many ailments with which the Mozambican forest sector has been diagnosed. Each of the incentive options above offers some potential for improving practice. Indeed, more than two Mozambican forest experts perceived each and every incentive type to be high priority. They differed, however, in the incentives which they felt were worth prioritising.

A second observation is that despite the wide divergence in opinion, there were some incentive types that were more widely perceived to merit prioritisation – and that these involved both ‘carrots’ (positive incentives for good practice) and ‘sticks’ (deterrents for bad practice). Four of these top six priorities involve efforts to apply stronger ‘sticks’ or deterrents for bad practice:

- Tightening law enforcement (eg through timber tracking and training of forest law-enforcement officers, customs officers and judiciary)
- Setting up clear systems of legality assurance (eg developing China–Mozambique timber legality verification systems and due diligence requirements)
- Introducing more stringent licensing and licence-renewal procedures (eg duration and requirements of different operator licences and increasing inspection against management plans prior to approval), and
- Insisting on minimum qualified staff or national staff quotas (eg personnel qualifications with proficiency in forest management and processing and/or of Mozambican nationality).

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Two of the top six priorities involve the creation of ‘carrots’ or positive incentives for good practice:

- Extension and training of operators in sustainable forest management (eg strengthening extension service delivery and providing regular training courses in sustainable forest management), and
- Encouraging business associations and networking platforms (eg best-practice membership groups to improve market efficiencies and dialogue between the private sector and government).

It is worth reflecting on the perceived balance in favour of deterrents for bad practice rather than positive incentives for good practice. This could be due to the political legacy of colonial rule in which the government was perceived to have an ordained right to control resources and had a strong mistrust of more local patterns of control. This might be reflected in the prevalence of ‘command and control’ capacities in government authorities, over and above capacities to offer training and resources for sustainable business development. Alternatively, it could have its root in the perceived economic cost of providing positive incentives versus deterring bad practice – although it is by no means clear that actual costs of deterring bad practice are in any way less than the costs of incentivising good practice. Perhaps a broader political discussion is required about what the role of government should be – whether as law enforcer or as educator. This would be an important discussion,

because an over-emphasis on deterring bad practice can lead to a proliferation of bureaucracy and corruption which is then difficult to correct and tends to hamper the emergence of a thriving and sustainable forest sector.

A third important observation is that many of these incentive types have useful and important complementarity. In other words, the likelihood of achieving improved practice would be enhanced if several incentives could be developed simultaneously. For example, if there were a reliable independent system of law enforcement that used modern information technology to track timber flows (to tighten up resource access), it might then be possible to organise a business association based around improved practice (to improve business relationships). From there it might also be easier to establish a brand community group based on that better practice (for brand development) which might make it easier to insist on qualified forest staff (for operational capacity development) with easier negotiation of altered revenue incentives (enhancing revenue flows) and so on. Finding this complementarity should be a key priority within the ongoing forest-law reform.

A fourth observation relates to that law reform process itself. Concerns over illegality led in 2015 to a moratorium on log exports and on the issue of new timber licences. This was then followed by a review of all the forest operators in the country against a set of 31 criteria developed by the Eduardo Mondlane University (UEM). A new draft forest law has been developed, accompanied by a new forest-development programme (Floresta em Pé) with the former subject to a national consultation. Together, the new law and forest development programme have the capability to implement almost all of the incentives described here. But some will be relatively low cost and quick (eg changing resource allocation rules) while others are much more costly and long term (eg extension and training of forest operators in sustainable forest management). Making sure the Floresta em Pé is adequately financed to take on the longer-term positive incentives will be critical to avoid a reform that simply adds quick fixes and bureaucratic steps to a sector already plagued by rent-seeking on the part of some government officials. There should be an agreed minimum package of long-term positive incentives to be set alongside any short-term deterrents for bad practice.

A fifth observation is that more attention needs to be given to the economics underpinning each of these options. For example, the current oversupply from Mozambique of precious timber species into specialist markets for top-quality cabinet making and musical instruments is driving down prices and reducing potential returns to Mozambique (which probably has a sufficient remaining stock of such species to make a readjustment feasible). Introducing quotas and readjusting taxes for such species could be in the long-term interests of Mozambique, but would require further detailed economic analysis. Similarly, the former ban on the export of unprocessed logs of precious species is widely circumvented and might be better replaced with either a blanket log export ban or a well-conceived gradation in log export taxes. But again, this would require further economic analysis.

8.3 Next steps

This report has generated some information on the options for incentives to improve the forest practice of Chinese timber traders, concession holders and their Mozambican partners. The perceptions of Mozambican forestry experts have been surveyed. What is needed now is to conduct a survey in Chinese of the Chinese timber traders – to gauge what areas of synergy might form the best starting points for efforts to improve forest practice. The intention is to follow this report with exactly such an exercise – using Chinese researchers from partner organisations in China to complete the task.

What might then prove advantageous would be to mainstream a discussion of the findings into the process of legislative reform that is currently ongoing. It is absolutely vital that the law reform process creates a policy reform coalition through a broad consultative process. This could be kicked off by a dialogue stimulated by the second draft of the Forest Law or by the findings from this report. It might be useful to have a neutral convener for subsequent discussion processes, perhaps an organisation such as the IUCN with its membership base comprising both government and NGOs.

The dialogue process could help to build clarity about exactly which incentives should be developed in the immediate future and what legislative and institutional provisions would be necessary for that to happen. These might then inform the process of revision of the second draft of the new Forest Law.

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Mozambique still has abundant (though rapidly diminishing) forest resources. Putting in place a suite of complementary incentives for timber operators to improve the sustainability of their practice (economically, socially and environmentally) would be a timely component of the current legislative reform process. An immediate starting point should be to equip the newly formed enforcement agency the National Agency for the Control of Environmental Quality (AQUA), with a modern internet-based data system that could monitor real-time flows of timber and prevent easy circumvention or bribery at law-enforcement checkpoints. To this could be added a range of more positive incentives to build the capacity of operators to improve their technical capacity for sustainable forest management – with benefits in revenue both to the companies involved and to the country as a whole.

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Options for more sustainable forestry among Chinese timber traders and Mozambican partners

Mozambique has seen a huge rise in the volume of its timber exports to China in recent years. Meanwhile, reports of illegality and unsustainable logging have steadily grown. The governments of both Mozambique and China are currently reconsidering how to address this reality – to maintain their important bilateral relationship, and to improve the practices of Chinese timber traders and concession holders and their Mozambican partners. This report contributes by exploring what options exist for incentives that can put in place more sustainable forestry. It identifies six main areas of concern and outlines for each area possible incentives that might be developed to improve practice. Then it reports on the results of a prioritisation process with Chinese and Mozambican forest operators, the Mozambican government and civil society organisations – which has the ambition to identify a set of complementary and prioritised incentives that can be implemented as part of a carefully thought-through sectoral reform process.

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