China in Mozambique's forests

A review of issues and progress for livelihoods and sustainability

Duncan Macqueen (editor)

Contributing authors: Narciso F. Bila, Andrade Egas, Mario Falcao, Ernesto U. Junior, Arnela Mausse, James Mayers, Sheila Menezes, Maria Muianga, Simon Norfolk, Peng Ren, Clare Rogers, Carlos Serra, Eunice C. Sitoe, Jingwei Zhang and Xiaoting Hou Jones











This research report has been prepared as part of the **China-Africa Forest Governance Project** – a multi-country project that seeks to improve forest governance, by promoting sustainable and pro-poor Chinese trade and investment in Africa's forest. Through research, dialogue and joint action with partners in China, Cameroon, Democratic Republic of Congo, Mozambique and Uganda, the project contributes towards improved policy and investment practice in China and Africa, in ways that foster good stewardship of forest resources and benefit local communities. The project is run by IIED with support from the UK government and partnerships with WWF and in-country practitioner teams with a strong track record of governance and enterprise engagement.

As part of this project, we will be producing a series of reports and other thematic and sectoral research products on the state of Chinese investments in African land use in Cameroon, the Democratic Republic of Congo, Mozambique and Uganda. We will also produce a research report on the steps taken by Chinese organisations towards legal and sustainable investments by China in Africa's forests. Once available, all will be free to download at pubs.iied.org.

For more information visit www.iied.org/china-africa-forest-governance-project.

The China-Africa Forest Governance Platform, launched in 2013, is now a well-recognised multi-stakeholder forum which strengthens mutual understanding, partnerships and joint actions on forest governance between China and Africa. Platform participants have also had influence in key international policy arenas. While the China-Africa Forest Governance Project has been the main supporter of the platform to date, other organisations continue to increase their involvement. The platform has thus far brought together forest governance players, including heads of government forest departments from nine African countries; representatives from the Chinese Academy of Forestry; the Global Environmental Institute; the International Institute for Environment and Development; the World Wide Fund for Nature; and other international organisations. As of 2018, the platform has held a range of trans-country dialogues and four major international learning events – two in China, one in Cameroon and one in Mozambique.

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CHINA IN MOZAMBIQUE'S FORESTS

Terra Firma is a Mozambican consulting company specialising in land and natural resource management across Africa. Terra Firm has worked at ministerial level with public agencies, assisting with the appraisal, design and evaluation of land administration projects and the development of land tenure policy. Terra Firma has also worked with CEOs of major private sector entities to assist in identifying land-related investment risks and opportunities, and it maintains strong links to a range of independent research and advocacy institutions across the continent.

The **Global Environmental Institute (GEI)** is a non-profit organisation founded in 2004 in Beijing. GEI explores solutions to environmental issues faced by China and the world. It proposes forward-looking policy recommendations to the Chinese government and, through innovative demonstration projects, fuses best practices in environmental protection, energy conservation and community development.

The **Eduardo Mondlane University** is a Mozambican national university based in Maputo, but it conducts research throughout the country. Its mission is to produce and disseminate scientific knowledge and promote innovation through research. It views research as the foundation of teaching and learning and extension processes, educating generations with human values in order to face the current challenges for the development and benefit. of society.

Sheila de Menezes, Lawyers – Sociedade de Advogados, Limitada (SMA) is a law firm active in several sectors including labour, corporate, real estate construction, renewable energy, industry and intellectual property. SMA specialises in the preparation of legal guidelines and regulations for land use plans, provision of advice on social and environmental responsibility, and drafting of opinion papers on environmental issues.

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The aim of the Natural Resources Group is to build partnerships, capacity and wise decision-making for fair and sustainable use of natural resources. Our priority in pursuing this purpose is on local control and management of natural resources and other ecosystems.

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Cover photo: Villagers walking through the Meceburi Forest Reserve, near Nampula, Mozambique.

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 Options for more sustainable forestry among Chinese timber traders and Mozambican partners. Natural Resource Issues No 33. IIED, London.
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- Muianga, M (2016) Análise de situação de investimentos Chineses qeu afectam o uso da terra florestal em Moçambique. Terra Firma, Maputo. Unpublished draft.
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Acronyms

AQUA	Agency for Environmental Quality Control, Mozambique	HCB HS	Hidroeléctrica de Cahora Bassa Harmonised Commodity
AMOMA	Mozambican Association of		Description and Coding System
	Timber Operators	IIED	International Institute for
CAF	Chinese Academy of Forestry		Environment and Development
CAFGP	China-Africa Forest Governance Platform	LFFB	Forest and Wildlife Law, Mozambique
CBNRM	community-based natural resource management	MITADER	Ministry of Land, Agriculture, Environment and Rural
CITES	Convention on International		Development, Mozambique
CITES	Trade in Endangered Species	ммк	Madeira Maheco Kalnkna
COGERFFN	Forest Resources Management		Company, Mozambique
COGERITA	Committee, Nipiode,	MoU	memorandum of understanding
	Mozambique	Mt	Mozambican metical
DEFRA	Department for Environment,	MW	megawatt
	Food and Rural Affairs, UK	NGO	nongovernmental organisation
DINAF	National Directorate of	ORAM	Rural Association for Mutual
	Agriculture and Forests,	01111111	Aid, Mozambique
	Mozambique	PCF	piling conversion factor
DNTF	National Directorate of Land	REDD+	reducing emissions from
	and Forests, Mozambique		deforestation and forest
DUAT	land-use right, Mozambique		degradation
EIA	Environmental Investigation	RFFB	Forest and Wildlife Regulation
	Agency	RIFPI	Research Institute of Forestry
EU	European Union		Policy and Information
FIP	Forest Investment Programme, World Bank	SFA	State Forestry Administration, China
FLEGT	Forest Law Enforcement	SPGC	Provincial Services of
	Governance and Trade		Geography and Cadastre
FNDS	National Sustainable	SPF	Provincial Forest Service
	Development Fund,	SPFFB	Provincial Forest and Wildlife
FOR	Mozambique		Services
FOB	freight on board	SPFFBZ	Provincial Forest and Wildlife
FOCAC	Forum on China-Africa		Services of Zambezia
EDELIMO.	Cooperation	UEM	Eduardo Mondlane University,
FRELIMO	Mozambique Liberation Front		Mozambique
FSC	Forest Stewardship Council	VPA	Voluntary Partnership
GDP	gross domestic product		Agreement
GEI	Global Environmental Institute	WWF	World Wide Fund for Nature

Summary

China-Mozambique economic relations, investment and trade have grown significantly since they first began in the 1960s. For example, Mozambique now is among the largest African exporters of timber to China, and China is the destination for approximately 93 per cent of all Mozambique's timber exports. Concerns have been raised over the impact of these patterns of investment and trade for Mozambique's forests and the development of rural populations.

This report compiles three years of work of the China-Africa Forest Governance Project to develop evidence on constraints and opportunities for forest resources in productive and resilient land use and trade, to develop capacity and dialogue among relevant stakeholders in China and Mozambique, and to deliver policy and practice improvement opportunities.

Section 1 opens with the history of China-Mozambique relations, justifies the project's interventions and lays out the structure of the report. Section 2 then gives more detail on the nature and scale of Chinese investment in Mozambique and the implications that this has for the forest sector. It draws on a diagnostic report (Muianga, 2016) and a spatial database of timber operators (Muianga and Norfolk, 2017) to highlight the significance of the Chinese presence in Mozambique's forest sector, and how problematic the timber trade still is in terms of legality and sustainability.

Section 3 focuses on the impacts of recent legal reforms to control the situation described in preceding sections, based on further original work (Menezes and Serra, 2017). Assessment of legal reforms that have been introduced since 2010 to try to improve the practice of timber operators leads to the conclusion that so far, these reforms have failed. The section attributes this to high levels of corruption, disorganisation and a failure adequately to implement the new institutional model.

In Section 4 the report summarises new research (Macqueen and Falcão, 2017) on options for incentives to improve the practice of Chinese timber operators and their Mozambican partners. Some 24 different options for such incentives are presented with their prioritisation by Mozambican forest experts. This section concludes with a call to put in place a complementary set of incentives – with particular suggestions on which elements should receive immediate priority.

Section 5 turns its attention to a series of reports which both identified and then investigated the causes of timber trade data discrepancies between declared Mozambican export figures and declared Chinese import figures (Chang and Peng,

2015; Egas et al., 2017, 2018). There appear to be several possible reasons for the discrepancies in the timber trade data between China and Mozambique – including clandestine practices, erroneous equations for calculating the volume of timber in containers, container transshipment processes and data entry procedures.

Community contributions to timber flows in Mozambique is the focus of Section 6, based on a review of one of only two community forest concessions that have operated in the country (Maússe, 2017). The Nipiode community forest concession covers 20,000 hectares and is overseen by five communities. Active participation of communities in timber production is critical to promoting more sustainable and pro-poor China-Mozambique timber trade. Yet even with substantial support from a nongovernmental organisation, the community company Madeira Maheco Kalnkna scarcely managed and ultimately failed to comply with complex legislative requirements, suffering a range of failings, mostly due to inadequate investment in the organisational structure and procedures to make the business work. Suggestions are made as to how communities could be better included in timber value chains in the future.

In Section 7 the report turns its attention to the efforts of the project itself to build evidence and capacity, and thereby deliver changes in policy and investment practice. The report concludes with a number of immediate next steps that will help to consolidate the project's impacts. The ongoing work and office presence of the World Wide Fund for Nature in Mozambique offers hope that at least some of these will be achieved:

- 1. It will be to everyone's advantage that Mozambique and China finally signed in June 2018 the memorandum of understanding that had been prepared in draft during this project period. This will hopefully pave the way towards knowledge sharing, technical exchanges, developing Mozambique's capacity for timber processing, changes in the investment environment to encourage investment in line with timber processing, measures to incentivise sustainability and fighting illegal trade.
- 2. It will prove fruitful to build on the project's **forest-wise park** exchange event that took place between Mozambique and Chinese key stakeholders on 3–11 March 2018 and the resultant forest-wise park collaboration agreement. This could pave the way to significant inward investment for value-added timber processing in Mozambique (see Falcão, 2018). The result could well be a renewed interest in sustainable timber supply which might have the effect of improving operator practice across the country.
- 3. The process of forest law reform needs to be taken to wide consultation and review (see Menezes and Serra, 2017). It will be especially important to update incentives for investment in value-added processes and sustainable forest management in that law reform. It will also be important to ensure that new, simpler provisions exist for community forest concessions linked to land-use rights (DUAT) to

allow simple management planning and sale of logs to third parties in a **new form of community forest concession**, distinct from industrial counterparts. In this way, the ongoing benefits of the Mozambique-China timber trade will be distributed, not among a privileged elite, but to Mozambique's rural people who uniquely have the agency to control what is harvested and where.

- 4. As recommended and agreed by forest experts in Mozambique, the National Directorate of Agriculture and Forests (DINAF) and the Agency for Environmental Quality Control (AQUA) need to agree to establish and use a modern, internet-based, electronic, timber-tracking system that includes a timber operator database (see Muianga and Norfolk, 2017). This will reduce the possibility of circumventing the law, hugely increase government revenues, and reduce work for hard-pressed forest staff in the currently chaotic collection of data on timber licences, harvesting, transport, container loading and export. The system could be developed with support from China to minimise any discrepancies between the two countries in reporting on the timber trade.
- 5. As recommend by Egas et al. (2017) in their report on timber trade discrepancies, volume/weight equations to estimate the timber volumes and weights within loaded export containers need urgently to be recalculated. Vast quantities of timber are currently leaving the country underreported because of these faulty quantification processes. In 2013, Mozambique reported exporting 280,796 cubic metres of timber to China. The amount recorded on arrival was more than double this at 601,919 cubic metres. Relatively quick and inexpensive field calculations can solve a longstanding problem that impacts negatively on Mozambique's reputation.
- 6. The government agency DINAF needs to develop a major programme of incentives to improve the practice of timber operators trying to agree and develop at least a few of the 24 possible incentive types outlined in Macqueen and Falcão (2017). Many of these incentive types can be framed through the forest law reform process. Most are already widely applied in other countries in Africa and beyond.

Introduction to Mozambique-China relations and the purpose of this report

Based on original work by Maria Muianga and Duncan Macqueen (2015)

1.1 Overview of China-Mozambique relations

China-Mozambique economic relations

China-Mozambique economic relations began to emerge in the 1960s, with China providing diplomatic and limited military support to the Mozambique Liberation Front (FRELIMO) during the movement led by Eduardo Mondlane for liberation from Portugal as a colonial power. Mozambique became independent in June 1975, and formal China-Mozambique relationships began. Following independence, China also provided support to FRELIMO and the first president, Samora Machel, in the form of military aid and guerrilla training for the civil war against the Mozambican National Resistance (RENAMO). Despite declaring itself a Marxist-Leninist state in 1978, introducing Sino-Soviet tension into relations, China maintained its support; including help with the disastrous 1983 famine

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(Roque and Alden, 2009). By 1987, Mozambique had begun reforms towards a market-oriented economy, moving away from socialist policies. In October 1992 a Comprehensive Peace Agreement was signed, leading to democratic elections won by FRELIMO, and new cooperation with Western countries and donors – funding over 50 per cent of government expenditure by the mid-2000s. Notwithstanding this move towards the West and a slight lull in relations with China (Carriço, 2008; Ilhéu, 2010; Robinson, 2012), after the war ended, Chinese companies were among the first to re-enter the country, including construction companies and timber merchants (German et al., 2013).

China-Mozambique cordialities were strengthened by the 1997 establishment of a US\$20 million fund to incentivise Chinese companies to do business in Mozambique. In 2001 China and Mozambique established a Joint Economic and Trade Commission, followed by a series of other important bilateral agreements (MFA, 2007; Correia, 2010):

- 2001 agreement on trade; agreement on the promotion and reciprocal protection of investments
- 2002 agreement on human resources development, agriculture and environmental protection
- 2004 economic and technical cooperation agreement for agriculture, health, education and mining
- 2007 agreement to strengthen bilateral trade and economic relations for the period 2008–2009
- 2007 protocol of cooperation on military assistance, and
- 2014 cooperation agreement between the Bank of Mozambique and the People's Bank of China for the management of reserves and monetary policy.

Following the Forum on China-Africa Cooperation (FOCAC) conference in 2000, China announced the forgiveness of US\$22 million of Mozambique's external public debt in 2001. It cancelled US\$52 million between 2001 and 2007, corresponding to all accumulated debt between 1980 and 2005 (Muianga and Norfolk, 2017). China became the largest creditor in Mozambique in 2012, increasing its funding by 160 per cent compared to previous years; thus in 2014, Mozambique's total debt to China stood at US\$886 million dollars. During FOCAC 2015, China announced the forgiveness of non-overdue interest until 2015, and the downward revision of interest rates on credits to be allocated in the coming years. These debt write-offs have been granted because of the difficulties Mozambique faces in paying its external debt, so to maintain good relations and ensure goodwill between countries, China has been relieving or cancelling debt as a form of aid to Mozambique.

Relations have since built on this trade and investment promotion, plus debt cancellation, and subsequently focused on climate change, food insecurity and energy. As elsewhere

in Africa, the commitments made within FOCAC and China's Go Global Strategy – aimed at creating multinational companies, mainly in the infrastructure and extractive industries (petroleum, minerals, wood and others) – are shaping cooperation between China and Mozambique. While Mozambique needs Chinese investment (capital and infrastructure), China needs Mozambican natural resources (Gu and Schiere, 2011).

The claim that Chinese investment is motivated by extracting Mozambique's natural resources (rather than boosting its prosperity) has raised concerns, despite the Chinese government's emphasis since 2006 on efforts such as sending teams of Chinese doctors; expanding student exchange programmes; increasing infrastructure construction; expanding the economy through a commercial network; and granting aid and investment. While some see China's economic growth as a positive development model, others are more critical, comparing Chinese investment to the colonial past due to negative impacts on local trade as well as some illegal actions (Alden, 2007; De Lorenzo, 2007; Konings, 2007; Pollock, 2007; Tembe and Xu, 2013; Zafar, 2007). Those for whom the negative impacts of the Chinese presence in Africa are more significant than the positive argue that China-Africa cooperation could be improved if African governments strengthened their national policies and harmonised regional policies, thereby improving their negotiation position with China, which is a valuable ally for financing and investment (Schiere et al. 2011; Tembe and Xu, 2013).

Regardless of the position one takes, China is one of Mozambique's main economic partners, bringing billions of dollars to the country in investment. Unlike other African countries, Mozambique's cooperation with China can be considered cautious and mutually beneficial, as Chinese trade and investment have helped the country's economic growth by financing projects in a timely manner (Horta, 2011; Taylor, 2006). On the other hand, economic gains in Mozambique from Chinese cooperation (accelerated economic growth and foreign direct investment flow) have been compromised by perceptions of China's unbridled exploitation of natural resources (such as timber, shellfish) and inhumane treatment of the labour workforce (Mabucunhane, 2015).

Concerns over economic relations in the forest sector

In the forest sector, China has become a major export destination for Mozambique. This is a common picture across Africa, as 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 been the destination for 93 per cent of Mozambican timber exports on average (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 (Canby et al., 2008). The literature highlights some concerns about 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 only accounts for 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). Ninety per cent of Chinese timber exports are restricted to just five species, including 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. Associated loss of tax revenues (estimated at US\$146 million between 2007 and 2013) are also depriving Mozambican communities of approximately US\$20 million in the same period (EIA, 2014). The significant contribution of logging to the alarming loss of forest cover in Mozambique (see Figure 1) has been a cause of concern for some time.

O miles 100
Forest cover
Deforested areas

Figure 1. Forest cover change, 2000-2013

Source: Simplified and redrawn from higher resolution maps by DINAF

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). The established practices of these different types of operator differ from each other quite markedly, as subsequent sections show.

In response to these concerns, in 2009 the Chinese government published the *Guidelines* for Sustainable Trade and Investment for Forest Products for Chinese Overseas

Enterprises through the State Forestry Administration (SFA), in order to regulate Chinese investment and encourage the sustainable management and use of forest resources abroad; this guide has been updated to better suit Mozambican regulations and laws. And in 2011, discussions began on establishing a memorandum of understanding between Mozambique and China for cooperation in the forest sector.

1.2 The China-Africa Forest Governance project

The China-Africa Forest Governance Project was launched by the International Institute for Environment and Development (IIED) and partners in 2014 and is dedicated to improving evidence, capacity and joint action for sustainable Chinese investment in Africa's forests. This project aims to create opportunities for improving policy and Chinese company practices in favour of sustainable land use and benefits to local women and men in Cameroon, the Democratic Republic of Congo (DRC), Mozambique and Uganda. Project partnerships in these countries, and in China, focus on progress with the China-Africa Forest Governance Platform,² the Voluntary Partnership Agreements, company due diligence and legality, and improving in-country land-use investments. The project has three central pillars:

- Generating evidence: working with IIED's partners in the four African countries, the project has conducted research into the current status and trends of Chinalinked investments in their forests – focusing on forestry, mining, agriculture and infrastructure. It has also analysed relevant laws and regulations, incentives for companies to operate sustainably and legally, and the impacts of China-linked investments and trade on rural livelihoods.
- 2) Strengthening capacity and dialogue: the project identified a lack of communication mechanisms among the relevant government agencies to share information and discuss overseas forestry investment and timber trade issues. Similarly, the private sector (for example, timber importers and primary processors) are exposed to limited dialogue, exchange and capacity-building activities compared to

¹ Simple licences are five-year licences for extracting 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). ² The multi-stakeholder platform for Chinese and African actors to dialogue, achieve mutual understanding and plan joint action for sustainable Chinese investments in Africa. See more information at https://www.iied.org/china-africa-forest-governance-learning-platform-puts-focus-business-solutions

other stakeholders. The project focused on building capacity and fostering dialogue among these stakeholders – policymakers, private sector actors, researchers, practitioners and journalists – through national, regional and international platforms; training; and work exchanges. It developed innovative approaches to reach previously inaccessible Chinese SMEs engaged in trading and importing timber products from the Congo Basin in order to deliver key information on policy, legislation and timber trade opportunities.

3) Improving policy and investment practice: through evidence, capacity building and dialogue, the project has contributed towards long-term change in policy and investment practices. This has been achieved by: a) engaging with Chinese and African policymakers to change policies, investment and organisational practices to support resilient African land use and a sustainable China-Africa forest product trade; b) adopting and monitoring codes of practice and responsibility agreements by Chinese forest sector companies and land-use investors; and c) supporting companies in achieving verification of good legal practice.

The China-Africa Forest Governance Platform (CAFGP) was set up by IIED and partners in 2013. It is a unique multi-stakeholder platform for dialogue, evidence verification and planning that can bridge the gaps mentioned above. The CAFGP has held international learning events in March 2013 (Beijing, China), June 2015 (Yaoundé, Cameroon), October 2016 (Beijing, China) and October 2017 (Pemba, Mozambique). These have established the CAFGP as the go-to mechanism for these issues by key players in government and civil society from China and Africa. The events have enabled new research findings on the impacts and potential of China-linked land-use investments in Africa to be discussed and disseminated. They have also enabled African and Chinese stakeholders to jointly generate specific plans for policy and business improvements.

CAFGP was born of the recognition that Chinese investments in Africa have increasing impacts on forests, and important implications for sustainability – both in Africa and globally. China has become Africa's biggest trading partner. The continent's trade with China is currently worth about US\$200 billion – driven in part by Chinese government's Go Global Strategy and China's African Policy. Investments by Chinese state-owned and private enterprises, mostly in natural resource sectors, are increasing annually. Many of these investments are in forested or woodland areas, some are directly in forest management and logging enterprises, and many others use timber and other forest products. While logs and lumber from Africa do not yet make up a large proportion of China's forest product imports (about 4 per cent with a value of US\$1.3billion, according to Chinese government statistics), the exports are significant for a range of African countries. For example, 93 per cent of all timber exports from Mozambique are for the Chinese market (EIA, 2013).

In 2003, the European Union (EU) launched its Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan. Voluntary, bilateral agreements between the EU and timber-producing countries formed a key element of the Action Plan. These Voluntary Partnership Agreements (VPAs) were based on verifying the legality of timber production in supplier countries and licensing exports to the EU. But currently, the African VPA signatory countries have yet to establish functional timber legality assurance systems, leaving prospects for safeguarding legal origin floundering. Mozambique was not even a VPA signatory country, in part because of its market orientation towards China rather than Europe.

Since 2008, the amended US Lacey Act has prohibited imports of illegally sourced timber and wood products into the US, requiring US importers to exercise 'due care' in market transactions with supplier countries. The 2010 EU Timber Regulation, which took effect in March 2013, likewise outlawed importing illegally sourced timber, requiring timber traders and industries in EU member states to exercise proactive risk mitigation ('due diligence'). Chinese stakeholders had become increasingly aware not only of the reputational risks associated with China's global forest investment footprint, but also of possible implications for continued market access for Chinese timber and wood product industries and traders. A number of initiatives and guidelines have been developed to promote trade in legal timber and sustainable overseas forest investment. Work has been underway since 2009 to develop a Chinese timber legality verification system, steered by the Center for International Forest Products Trade, an affiliate body of the State Forestry Administration of China located at Research Institute of Forestry Policy and Information (RIFPI), and supported by the UK's Department for International Development and the Department for Environment, Food and Rural Affairs.

In mid-2013, the Chinese SFA and Ministry of Commerce held its first stakeholder meeting on the newest of four sets of voluntary guidelines that are relevant to forest governance, the *Guidelines for Sustainable Trade and Investment for Forest Products for Chinese Overseas Enterprises*. Though these guidelines are voluntary, they represent an effective new tool that can be used with the earlier *Guidelines on Sustainable Silviculture* (2007) and *Guidelines on Sustainable Overseas Forests Management and Utilisation by Chinese Enterprises* (2009). These earlier publications had been the focus of some promotional and training activities (via pilot projects) in several countries, including Mozambique. Stimulated by the launch of the CAFGP, and in preparation for a memorandum of understanding between the Chinese and Mozambican governments supported by the World Wide Fund for Nature (WWF) and IIED, successful training was held with WWF facilitation in 2013 in Mozambique on regulatory frameworks and guidelines, with some 50 Chinese-owned enterprises – small to large – active in the forest sector. These enterprises expressed strong interest in continued networking and several companies appeared keen to be involved in pilot guidelines demonstration work.

A joint programme of China-Mozambique activities

In developing the project's workplan, Chinese and Mozambican partners identified a key set of baseline 'China in Africa' challenges, reflecting more widely shared issues in Africa. For each, they also identified partners who are well positioned to tackle those challenges. These baseline situations are described below:

China

Framed by the imperative described above, the project's focus in China was to be on guideline development, legality assurance system inputs and generating evidence, capacity and impact on forest governance with Mozambican partners. The Chinese Academy of Forestry (CAF) was to be central to this work as the lead government agency on forest research and development, through RIFPI, and had already benefitted from collaboration and inputs from the Global Environmental Institute (GEI). IIED developed partnership contracts with both those organisations. WWF in China had been an active supporter of the guidelines' development and was well placed to help deepen the partnerships. In February 2014, the project began to collaborate with the Forest Governance, Markets and Climate's China programme, to enable the programme to extend its reach without duplicating any activities.

Mozambique

Mozambique was chosen as a focal country for this initiative because of its forest assets base - diverse and substantial at 58 million hectares (ha) - but declining by 219,000ha per year. Mozambique also demonstrated high levels of livelihood dependency on forest resources, a fast-changing land-use investment landscape, and a high proportion of timber exports destined for China (over 90 per cent, as reported above). Among the large-scale investment projects in agriculture, biofuels, concession-based logging and forest plantation establishment, the informal sector thrives. The timber market, for example, is dominated by small-scale enterprises, some of which are Chinese-owned. In Mozambique the project's focus was to build on the government's own concerns over continuing illegal logging (with the National Directorate of Agriculture and Forests, DINAF, as a central project partner); the Mozambique-China memorandum of understanding on supporting sustainable forest management and the timber trade (framed by both governments squarely in the context of the high-level Forum on China-Africa Cooperation and facilitated by WWF); initial work on guidelines, legality and sustainability with Chinalinked enterprises; and on opportunities to engage with agencies that shape land-use investments. A strengthened civil society platform also provided an opportunity for organised and constructive engagement; Mozambican consultants Terra Firma (specialists in African land and natural resource management), Eduardo Mondlane University and the legal firm Sheila Menezes Sociedade Advigados were well-positioned partners for this project.

1.3 Report structure

Report structure: covering efforts to improve evidence, capacity and practice

This report has opened with an introduction to China-Mozambique relations and the reasoning behind the China-Africa Forest Governance project in Mozambique (Section 1), highlighting the project's three main outputs: 1) evidence; 2) capacity and dialogue; and 3) policy and investment practice. In Sections 2–6 the report summarises the body of evidence generated between 2014 and 2018 by the project within Mozambique, each section led by a particular project partner:

- Section 2: China-Mozambique investment. Terra Firma carried out a baseline study to establish evidence on the scale of Chinese investment in Mozambique, published in Portuguese (Muianga, 2016; Muianga and Norfolk, 2017).
- Section 3: Forest legality reforms and their impacts. As the Chinese State Forest Authority worked with Mozambique partners to make specific the guidance to Chinese operators on Mozambican forest law (Yong et al., 2016), a legal firm, Sheila Menezes Sociedade Advogado, undertook desk-based and field assessments of recent legislative changes and their impacts on legality, sustainability and social impact (Menezes and Serra, 2017).
- Section 4: Options for incentives to improve forest practice. IIED and Eduardo Mondlane University (UEM) assessed incentive options to improve the practices of Chinese timber operators and their Mozambican partners (Macqueen and Falcão, 2017).
- Section 5: Trade data discrepancies between Mozambique-China export and import statistics and their resolution. WWF and UEM undertook preliminary analyses followed by in-depth field work to understand the root of the discrepancy in trade figures (Chang and Peng, 2015; Egas et al., 2017).
- Section 6: A case study of attempts to include communities in the timber trade by developing a community forestry concession in Nipiode. Given the importance of community forests in promoting a more pro-poor and sustainable timber trade, mutual aid organisation ORAM contracted a consultant to investigate why the attempt had not proved successful and how things could be made to work in the future (Maússe, 2017).

In Section 7 the report turns its attention to the project's efforts to build capacity and dialogue, and change policy and investment practice, and the report concludes with some suggested next steps to build on what has been achieved.

2

Chinese investment in Mozambique's forest sector

Based on original work by Maria Muianga and Simon Norfolk (2017)

2.1 Methodology

Research on the scale and nature of China-Mozambique economic relations

A 2016 baseline study (Muianga, 2016) reviewed literature on Chinese investment into Mozambique's agriculture, mines, energy and infrastructure sectors across the whole country. The report summarised in this section (Muianga and Norfolk, 2017) follows the 2016 study with a more detailed analysis of the forest sector, focusing on the provinces of Sofala, Zambezia, Nampula and Cabo Delgado. These provinces were selected due to their abundance of forest cover and the prevalence of timber harvesting, processing and export firms with owners of different origins (Mozambican, Chinese and other nationalities). Following an initial diagnostic study, the research took place in three phases: documentary research, field research and data analysis. This chapter is only a summary of the research and the report can be read in full elsewhere (see Muianga and Norfolk 2017).

The first phase comprised a literature review compiling all the available information, whether in printed or electronic form. This literature included annual reports; the

government of Mozambique's *Bulletins of the Republic*, which publishes legal updates; analytical reports; press reports; previous research reports; and also maps and sketches, to obtain accurate information on the location of forest concessions, simple licence operators and local communities.

In the second phase the authors conducted field research, starting in Maputo and Nampula Provinces in 2015, followed by visits to Cabo Delgado, Sofala and Zambezia. Interviews with key informants included 4 local communities, 13 nongovernmental organisations (NGOs), 10 forest concession owners, 5 single licence operators and 6 members of provincial government. The authors also visited company offices, sawmills and timber processing parks.

The third phase involved a review and analysis of the data, culminating in constructing a database on Chinese investment in the forest sector. The database was developed to facilitate public access to the information; prior to the China-Africa Forest Governance project, data from the National Directorate of Agriculture and Forests (DINAF) on forest concessions, with georeferenced simple licences, had not been available to the public.

The authors' account of establishing the database and the findings of their research (Muianga and Norfolk, 2017) are summarised below. The database was based on PostgreSQL, an open source database system known worldwide – among other features it supports the analysis and visualisation of spatial data. The database contains tables that group data according to their relationships; these tables hold information on companies operating in the forest sector (ie forest concessions), with at least one common attribute serving as a basis for connection between tables. The tables were later managed in VFront, which is also open source software, to portray the complexity of the relationship between the company entities and to allow visualisation and analysis of the data for each in an integrated way. Within VFront, besides visualising the information (including maps of concession areas), it is also possible to edit existing data, enter new data and delete unwanted information. In parallel, spatial data on forest concessions, simple licences and local communities were collected; and this information was processed and analysed using Quantum GIS® Software and included in the database.

All information in the database can be viewed through the companies table, which has a set of sub-tables containing the respective company's information, such as all concessions that the company holds, names of people involved, operating licences and species to be logged within their annual allowable cut. It is also possible to view a map of the concession area, which can be enlarged. The database can produce reports in list form, summarising information by province, by company and in more defined ways by using filters, for instance to view timber dealers or exporters only.

The various findings that emerged from the literature review, field research and database analysis are described below.

2.2 China-Mozambique relations beyond forestry: key findings

Scale of economic relations

As noted in the introduction, economic relations between China and Mozambique have been strong and are accelerating. Chinese foreign direct investment in Mozambique started slowly and has changed considerably in recent years as bilateral trade growth has increased. In the period 2000–2010, Chinese investment corresponded to two per cent of total foreign direct investment at the national level, which in the same period was around US\$10.6 billion. In 2008, China became the second largest foreign direct investor in Mozambique after South Africa, with annual investments worth US\$76.8 million; this continued at least to 2013, but with investments rising to US\$228.9 billion in that year.

Chinese investment in Mozambique has focused on several sectors, reflecting a desire to promote Chinese enterprises abroad (China's Go Global strategy). Investment covers a wide range of sectors, such as agriculture, banking, construction, defence and security, education, fisheries, forestry, manufacturing and mining (Jansson and Kiala, 2009; Alves, 2011). The latest trends show that mineral resource extraction is the sector with the highest growth in Chinese investment (Chichava, 2012). Mozambique has a huge interest in maintaining good relations with China and exploiting the benefits of this relationship, such as support in the form of technical assistance donations, interest-free or soft loans, debt cancellation, technical advice and implementing low-cost construction projects. Forestry is not one of the main investment sectors, but massive investment in other sectors may be creating a disincentive to address forest issues – an issue to which we will return below (Bräutigam and Zhang, 2013 Correia, 2010; AIM, 2012; Chichava, 2012).

Data indicate that trade between the two countries was worth about US\$48 million in 2002, US\$70 million in 2004, US\$208 million in 2006, US\$607 million in 2010, US\$1.1 billion in 2012, US\$3.6 billion in 2014, and about US\$2 billion in 2015 (Chichava, 2012; Alves, 2012; Carriço, 2008; Shelton and Kabemba, 2012). This shows a pattern of rapid growth, averaging more than 30 per cent per year (AIM, 2012). In 2011, China was on the list of Mozambique's main export partners with about 6.6 per cent of the volume of exports, behind South Africa (28.9 per cent), Belgium (15.1 per cent), Italy (11.8 per cent) and Spain (8.5 per cent). In 2014, the increasing volume of trade meant China was Mozambique's largest exporting partner with around 28.8 per cent, leading a list that includes South Africa (20 per cent), Italy (7.7 per cent), Belgium (5.9 per cent), India (5.7 per cent) and Spain (5.2 per cent) (CIA, 2015). The growth of exports from Mozambique to China in that three-year period was 22.2 per cent.

The main products exported from Mozambique to China are wood, agricultural products and mineral resources. In terms of imports, the most important are manufactured goods — mainly vehicles and spare parts, domestic appliances and iron and steel articles, clothing, and articles made of plastic and rubber. The data presented in Figure 2 illustrates clearly how timber is by far the most heavily exported product to China, even though investments in this sector are still small.

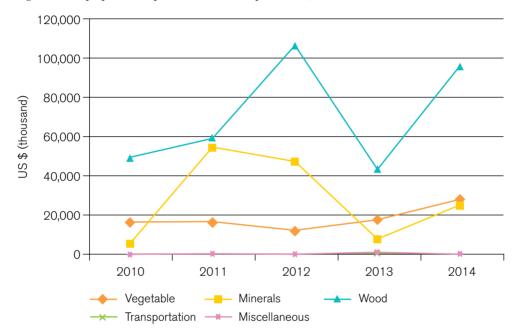


Figure 2. Principal products exported from Mozambique to China, 2010-2014

Source: WITS, undated

Although bilateral trade between China and Mozambique has been growing significantly, there are questions over the benefits to Mozambique, given that the main exports involve the production of raw materials (timber, minerals and agricultural commodities). Therefore, the expectation that Chinese investment in Mozambique might involve transfer of technologies leading to exports based around added-value processing is yet to materialise.

From Figure 2, it can be observed that while Mozambique's imported products from China have increased in the last five years, reaching around US\$700 million in 2014, exports to China have not shown much growth. The data indicate that Mozambique has been operating in a trade deficit with China, growing at an alarming rate, from around US\$50 million in 2010 to around US\$495 million in 2014.

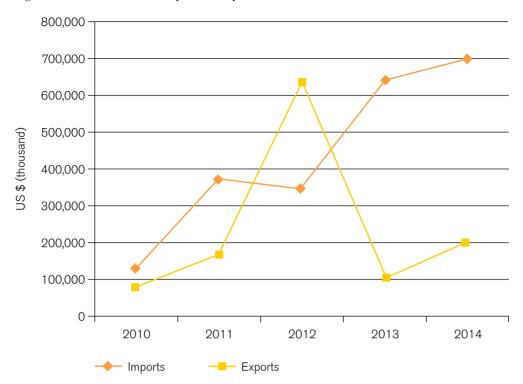


Figure 3. Balance of Mozambican exports and imports to and from China

Source: WITS, undated

Mineral sector

Mozambique is a country rich in mineral resources, possessing reserves of coal, natural gas, graphite, gold, marble, iron ore, pegmatite, diatomite, bentonite, tantalite, precious and semi-precious stones, bauxite, granite, phosphates, beryllium, mica and oil; which makes the mining sector an area of great interest for foreign direct investment. Investments into mineral extraction have focused on key sectors, notably natural gas, coal and a range of minerals, all of which have undergone significant growth. This increase has been underpinned by reforms of the laws and regulations that govern mining activity, opening mining to private investment and introducing a new mining register. By 2013, the country's mineral sector had registered huge investments of about US\$2 billion, mainly due to the growth of coal mining and natural gas research and discoveries. Its main investors were South Africa (Sasol), Brazil (Companhia do Vale do Rio Doce), Australia (BHP billiton) and Ireland (Kenmare). China has also been investing in the mineral sector – albeit on a comparatively small scale.

In 2008 there were only five Chinese companies reportedly operating in various areas of prospecting for coal, precious and semi-precious stones, gold, limestone, heavy sands,

ilminite, titanium and zircon. There were also reports of companies carrying out illegal mining activities backed by Chinese logging capital, but there are no official data to validate this information (German et al., 2013). Since that time, the number of Chinese mineral companies operating in Mozambique has grown. In 2011, several exploration licences were granted to Chinese companies. They included Great Wall Mining in Africa exploiting heavy sands in Nampula Province, in an investment of US\$30 million for the production of 200,000 tonnes of ilmenite, zircon and rutile (Macauhub, 2011). The company also received zirconium and titanium prospecting licences in Zambezia Province, and in Maputo and Sofala Provinces in an investment of roughly US\$130 million (Africa Intelligence, 2014; IPIM, 2013). CIF-Moz Limitada, a company created by the China International Fund in partnership with Mozambican company Gestão e Investimento, also obtained a prospecting licence to explore limestone, clay and iron in Maputo Province. The company Sogecoa Moçambique, which is a subsidiary of the Chinese group Anhui Foreign Economic Construction (Group) Co, obtained prospecting and research licences for gold in Sofala and Tete Provinces respectively, and also signed a contract for the exploration of titanium and heavy sands in Gaza Province along with Yunnan XinLi Non-Ferrous Metals Co Ltd (The Mozambique Resources Post, 2014; AIM, 2014a). Chinese company Ayu Ming is exploring heavy sands in Nampula, while Afrifocos has since 2011 obtained a three-year exploration licence for tantalite in Zambezia (Jornal Noticias, 2013).

Despite these investments, by 2012 Chinese involvement in the mining sector was still not significant and was limited to mineral extraction. Only one company, the China Kingho Group, had a coal exploration licence (in Tete Province; it was also interested in coal prospecting in Niassa Province) and none were active in the natural gas sector. Despite their obvious interest in the sector, Chinese companies have arrived late and had to look for partnerships with local companies and other established foreign operators to access this opportunity (Roque and Alden, 2009). However, by late 2014, the government of Mozambique had signed an agreement with the Chinese Khingo Group to open a coal mine in Tete Province, covering an area of 8,000 hectares (ha) and with a reserve of 504 million tonnes of coal, of which 54 per cent is coke and 46 per cent is thermal coal (Association of Coal Importers, 2015).

Data from 2015 also indicated that Mozambique was becoming a major exporter of graphite, due to the country's abundant reserves and low operating costs, with China as the preferred market (Notícias Mineração, 2015). Triton Minerals was one of the leading companies developing the market, with exploration rights in three concessions in the province of Cabo Delgado. Findings from research by Triton Minerals aroused the interest of several Chinese companies, for example China Aluminum International Engineering Corp Ltd (Chalieco), which sealed a purchase agreement for one-third of Syrah Resources' production, corresponding to 80,000 tonnes per year over three years. Other Chinese companies are also showing interest, including Yichang Xincheng Graphite Co Ltd (YXGC), which has entered into a contract with Triton Minerals to

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supply graphite for 20 years, worth a minimum of US\$2 billion; and Shenzhen Zhongjin Qianhai, which secured financing of US\$200 million and the long-term purchase of about 200,000 tonnes of graphite annually (Notícias Mineração, 2015; BNI, 2015; Proactive Investors, 2015).

Expected growth for Mozambique's mineral sector was colossal – from US\$259 million in 2012 to US\$724 million in 2017, corresponding to GDP (gross domestic product) growth of 1.8 per cent in 2012 and 2.9 per cent in 2017. This growth was expected due to the increased investment in the coal mining sector, making the country a worldwide producer. With the increase in exploration for other minerals and consequent increase in investment in the sector, forecasts in 2015 were of economic growth at an annual average of 7.4 per cent in the period 2015 to 2019 (AIM, 2015). Such predictions, and the Chinese capital involved, have significant weight in Mozambique-China relations.

Agricultural sector

Mozambique is characterised by an estimated area of 36 million hectares of land suitable for agriculture. It has a good network of rivers, favourable climatic conditions and high availability of cheap labour. However, at the present time, the majority of Mozambique's population depends on subsistence rain-fed agriculture. Agriculture's contribution to economic development and poverty reduction is still small. Agricultural cultivation only covers approximately 10 per cent of all available cultivable areas. The family farm subsector is dominant, with almost 90 per cent of cultivated arable land belonging to 2.5 million households conducting rain-fed family farming, characterised by an average area of 1.1ha per family, with only 6 per cent of farmers using quality seeds and 3 per cent using fertilisers. The remaining 10 per cent of cultivated arable area belongs to large commercial farms which focus on commercialisation and export crops (Agronegócio, 2014). In 2014, despite the predominance of rain-fed subsistence farming, the commercial agricultural sector in Mozambique contributed about 24 per cent to GDP and 20 per cent to the country's exports. Between 2013 and 2014 there was growth in the agriculture sector of 9.9 per cent, with cassava, beans and tobacco accounting for more than two-thirds of that growth (BPES, 2015).

Chinese investment in the sector has been expanding in recent years, as a stated priority of bilateral cooperation (along with infrastructure development). Chinese companies are entering Mozambique with the support of Chinese private investment, subsidised loans, financing for large projects and technological assistance. However, the Chinese presence in the sector is considered small, since the export volumes of agricultural products are still low (Correia, 2010; Ekman, 2012; German et al., 2013). Chinese investments in the sector have been directed at modernisation and research. Agricultural modernisation is driven by export markets, suggesting that Chinese investment in the sector is further

motivated by interests in Chinese food security. As early as the 2006 Forum on China-Africa Cooperation (FOCAC), China had committed to establishing the Boane Technology Center, valued at US\$55 million (Chichava, 2011), which became operational in 2011. And in 2007, an agreement was reached between the Chinese government and the Eduardo Mondlane University to establish the Umbeluzi Agrarian Institute in Maputo (Macauhub, 2013).

In terms of agrarian development, the Chinese government has shown an interest in lending in order to rehabilitate and develop important agricultural infrastructure in regions considered essential to boost the sector, such as Chókwe in Gaza Province, the Zambezi Valley in the province of Zambezia and Nguri and Chipende in the province of Cabo Delgado (Chichava et al., 2013). Crops of interest have included staples such as rice, wheat, corn and vegetables or cash cops and biofuels (sisal, sugar, palm oil) (Bräutigam and Zhang, 2013). Mozambique expects to benefit from Chinese technical expertise, both to increase domestic rice production in order to meet the country's food deficit, and to export the surplus to the Chinese domestic market. The governments of both countries agree that large-scale rice production in this region would be of mutual benefit in terms of helping China to respond to the problem of food insecurity and improving Mozambique's capacity (Macauhub, 2013).

In addition to establishing research centres and rice plantations in different parts of the country, another major area of interest to the Chinese government is biofuel production (Roque and Alden, 2009). Mozambique is rich in several raw materials used to produce ethanol, such as cassava, corn and sugar cane, as well as coconut, cotton, peanut and sesame to produce biodiesel. There is also great potential for jatropha and soya production (BNI, 2014). In 2009, the Mozambican government approved the National Policy and Strategy for Biofuels, which chose sugar cane (and sugar sorghum sourced from China) as raw materials to produce ethanol, and jatropha and coconut for the production of biodiesel. Projections indicate that the country has the potential to produce about 5.2 billion litres of ethanol and biodiesel per year from a land area of about 1.6 million hectares (Ecoenergy, 2008).

Biofuel production is attractive to Mozambique because the country is a significant oil importer. For China, investment in biofuels would ensure fuel diversification, which could be a productive investment for the future. From 2005 to 2010, more than US\$710 million was invested by foreign oil companies in Mozambique for biofuel production feasibility projects, which saw vast areas planted with sugar cane, capable of producing 440 million litres of ethanol per year (Macua Blog, 2010). As it is for the mineral sector, Chinese investment into agriculture is an important factor in Mozambique-China relations.

Energy sector

Ninety per cent of the energy produced in Mozambique comes from hydropower. A number of sites throughout the country offer the right conditions to develop projects at a reasonable cost. Mozambique has the highest potential for hydropower generation in the Southern African Development Community,³ estimated at 12,000 megawatts (MW). However, average energy production is 2,279MW, of which about 2,075MW is generated on the Zambezi River by the company Hidroeléctrica de Cahora Bassa (HCB). A significant increase is expected not only in the generation but also in the distribution of energy production with the implementation of new projects such as the Mpanda Nkuwa dam (1,500MW in Phase 1 and 900MW in Phase 2); Lupata (600MW); Boroma (200MW); Lúrio (120MW); the Aggreko's natural gas power plant, with an installed capacity of 232MW; EDM Sasol power plant, with 175MW capacity (Econergy, 2008; CCIABM, 2013; MMO, 2014; Nhamirre and Mosca, 2014; AIM, 2014b).

However, despite all this potential, 90 per cent of national consumption comes from HCB, and until 2014, government sources indicate that only 40 per cent of the Mozambican population had access to electricity – equivalent to about 10 million of a total 23 million inhabitants (MMO, 2014; AIM, 2014b). While these figures are relatively low compared to the rest of the world, Mozambique has the second highest electric grid coverage in southern Africa, surpassed only by South Africa (Nhamirre and Mosca, 2014).

Mozambique is also involved in regional projects such as the Transboundary Cross-Border Transmission Project, which aims to respond to some problems in the transmission system and foster regional economic development. The project is developing a national network to transmit 9,200MW in a safe and stable way from the north to the south of the country and export the surplus to South Africa and to the Southern African Energy Group (RM, 2015). The energy sector raised more than US\$3,238 million in 2014, and the largest investment was made to enable the projects of the Lupata and Boroma hydroelectric projects on the Zambezi River, Acwa Power Moatize in Tete, and the Buzi Thermal Power Plant in Sofala (RM, 2015). China has a stake in the energy sector by providing US\$400 million to complete the construction of 600 kilometres of electricity line. Once again, such investments play into Mozambique-China relations.

³ A regional economic community comprising 15 member states: Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe. See more at www.sadc.int

Infrastructure sector

China has been playing a very important role in the infrastructure sector in Mozambique, with Chinese companies accounting for about 60 to 70 per cent of investment in the sector in the last five years (Macauhub, 2015). The presence of Chinese companies in this sector began to be noticeable in 2006. By 2007 they were leading work on more than a third of the roads in the country and they led about 12 rehabilitation projects for the urban sanitation and water supply networks in the cities of Maputo, Beira and Quelimane, worth about US\$80 million in total (Correia, 2010; Bosten, 2010).

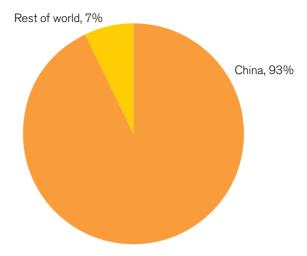
Chinese enterprises are involved in the construction, rehabilitation and modernisation of infrastructure of all types and levels, such as the rehabilitation of Mozambique's International Airport, estimated at US\$130 million; the National Stadium of Zimpeto, valued at US\$52 million; the Joaquim Chissano Conference Center, and several other buildings; Maputo's circular road; and various other infrastructure throughout the country (Macauhub, 2015). Growth in infrastructure investment increased 36.6 per cent between 2013 and 2014 (BPES, 2015).

In February 2015, a memorandum of understanding between China and Mozambique was signed for the construction of the Mozambican-China Cultural Centre, an initiative budgeted at US\$50 million, aiming at the exchange and dissemination of the two countries' cultures (MINEC, 2015). According to Correia (2010), the increasing presence of Chinese companies in the construction sector, together with their aggressive pricing, is outcompeting even European and South African companies, let alone Mozambican companies. Chinese companies also compete for small projects that had formerly been carried out by small national companies, as the latter cannot compete for large works.

2.3 Findings specific to the forest sector Scale of Chinese involvement in the Mozambique forest sector

As noted in the methodology, to assess the extent of Chinese involvement in the Mozambique forest sector, the authors used field research and interviews to augment a literature review, culminating in a detailed spatial database that is being made publicly available within Mozambique. This was done with the background knowledge that in 2015, China was the destination for 93 per cent of Mozambique's timber exports (Figure 4).

Figure 4. China's dominance as a market for Mozambican timber, 2007-2013



Source: EIA, 2013

It was possible to identify and add to the database more than 700 forestry companies that operate in Mozambique as forestry concession operators, simple licence operators, sawmill businesses and exporters. Of these, more than 200 – representing about 29 per cent of the total – have Chinese capital. In addition to the Chinese, who are the largest foreign national community operating in the forest sector, it was also possible to identify more than 15 other nationalities, especially South African and Vietnamese citizens, who are second and third in terms of numbers of investors.

According to published data, in 2017 Mozambique had 1,236 forestry operators, of which 1,025 operate on a simple licence basis and 211 under a forest concession regime (WWF, 2016). This compares with 1,081 operators (198 concessions and 707 single licence operators) in 2015 (DNTF, 2015). Each operator (concessionaire or simple licensee) may hold multiple licences; that is, one operator may have two or more concessions (properly demarcated and licensed areas for logging). Therefore, the number of operators is not proportional to the number of operating licences.

Based on further research by the China-Africa Forest Governance project, it was possible to identify 289 forest concessions (Figure 5), corresponding to 217 forest operators. This is a substantially higher number than World Wide Fund for Nature (WWF) (211) and National Directorate of Land and Forests (198) data. This discrepancy can be explained by the lack of information on name changes for some of the concessions, and lack of information about concessions that have become inoperative over the years. The province of Zambezia presented the largest number of forest concessions (118), followed by the provinces of Cabo Delgado (67) and Sofala (42).

Figure 5. Spatial map of Mozambican forest concessions (simple licences not shown)

Source: Muianga and Norfolk, 2017

Of the 289 forest concessions identified, the authors determined that 60 concessions represented Chinese investment, either in the form of a partnership with Mozambican citizens or totally Chinese. Concessions with Chinese investment represent around 21 per cent of the total, with the majority located in the provinces of Zambezia (20 concessions), Cabo Delgado (16) and Sofala (10). These figures could be much higher, since most of the concessions entered into the database did not have additional information to enable the nationality of the investor to be identified.

As for simple licences, 206 operators were identified and recorded in the database, mostly located in the provinces of Nampula (108) and Zambezia (86). These figures are well below the numbers presented by WWF (2016) and the National Directorate of Land and Forests (DNTF, 2016) – 1,025 and 1,081 respectively. This can be explained by the fact that access to information on simple licence operators has been very difficult

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to obtain. It is not available in the *Bulletin of the Republic*, nor readily accessible from national forest authorities, so the only data available was that which was publicly declared at the time of licensing.

However, according to MF (2010), Sitoe et al. (2012) and Issufo (2012), simple licences are the most predominant regime in the country, due to more simple and affordable administrative procedures for licence acquisition. This large number of simple licences, coupled with poor enforcement of the regulations, partially explains the high volume of timber extracted and the commercial exhaustion of the forest.

Key informant interviews suggested repeatedly that the number of registered forest operators is well below the number of active operators; in other words, a large number are operating illegally. This information could not be confirmed from the authors' field work. However, while Decree No 30/2012 determines that simple licences cannot exceed 10,000ha, it was possible to observe by georeferenced mapping that some exceeded 60,000ha. This is a serious situation, as 1) the requirements for simple licence operation (simplified management plan, non-mandatory processing, and valid for up to five renewable years) do not cater for the sustainable use of resources for such large areas; 2) this facilitates illegal activities, with the area ceded six times larger than the declared area; and 3) it proves yet again the lack of compliance with established licensing rules and supervision of licensed areas. It was also noted that since simple licences are legally exclusive to Mozambican citizens, no data are available on the existence or otherwise of Chinese direct investment in relation to these operators.

Employees of both domestic and foreign operators do not receive a minimum wage (payments are made on a daily basis according to volume cut), nor do they have personal protective equipment.

Structuring and practice of Chinese involvement in the Mozambique forest sector

Several actors are involved in illegal activities in the timber value chain, making it difficult to track and stop fraud. These actors are found at three levels:

- Low level: the people who cut the trees. These can be community members, simple
 licence operators, or even a company holding a concession licence. These low-level
 players do not have the capacity to extract the wood from the harvest site, so they rely
 on links with intermediaries.
- Middle level: intermediaries may or may not be licence holders. They find tree fellers, buy the wood and transport it to the processing sites or ports. Many Chinese operators are at this middle level, since they find cutting trees expensive and labour-intensive. It is more efficient and easier to purchase the wood and transport it. Some of the players at the middle level export, but others sell on to higher level players.

 High level: mostly Chinese entrepreneurs with high purchasing power who export timber, mainly in log form, to China.

The Chinese prefer to act as intermediaries and exporters, but it is not uncommon to find three to four Chinese companies acting together, each of them performing different functions: one supervising the tree felling, another the transport, and another the export – often belonging to different owners.

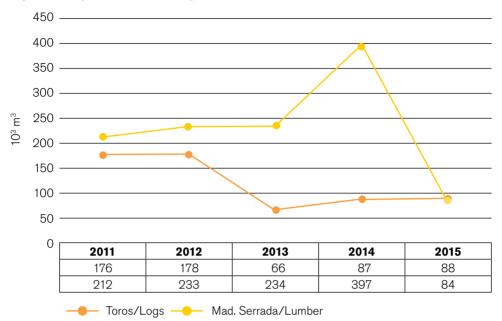
Although Mozambique has more than 100 forest species with potential for wood production, five dominate the trade: *Afzelia quanzensis* (chanfuta), *Dalbergia melanoxylon* (pau preto), *Milletia stuhlmannii* (jambirre), *Pterocarpus angolensis* (umbila) and *Swartzia madagascariensis* (pau ferro), due to demand in the national and international markets. Egas et al. (2013) also identified these species among others as being most affected by irregularities during the harvesting process, such as cutting trees that are smaller than the minimum permitted diameter, cutting outside of licensed areas and illegal cutting.

Trees larger than the minimum permitted diameters have become difficult to find, due to the pressure on logging, which incentivises cutting trees below those limits. Lack of information is also a problem since local tree fellers simply cut trees first and try to sell to those who show interest afterwards. Any wood not bought by Chinese operators is bought by local carpenters for furniture production – except curved or split wood, which is often abandoned in the forest. Forest and wildlife regulations state that 15 per cent of the timber harvesting licence fee is intended for reforestation by the government. However, almost no replanting occurs in licensed areas. Some interviewees argued for non-payment of this fee and direct restocking by operators as a better option.

Of the more than 700 companies entered in the database, 163 have installed sawmills, of which 55 per cent involve Chinese capital. Most of the sawmills identified are located in Sofala (53), followed by Cado Delgado (34) and Zambezia (26). Of the 163 sawmills identified, 97 also export, of which 56 have Chinese capital. The low number of sawmills identified is due to the fact that a large majority of the sawmills do not publish their statutes in the *Bulletin of the Republic*, and a large number operates informally. These data corroborate with those found by Sun et al. (2008), who report that most sawmills are owned by Asian, European and Chinese companies. Chinese sawmill companies are mostly small and anonymous, with weak infrastructure, capital and technology; they focus less on log processing than on export activities, where profits are to be made.

According to data published by the National Statistical Institute for 2011–15, Mozambique's sawn wood production was higher than its log production, by up to three to four times in 2013 and 2014 (see Figure 6).

Figure 6. Wood production in Mozambique, 2011-2015



Source: Muianga and Norfolk, 2017

However, many of the sawmills are low quality, processing only enough to meet the minimum requirements for export and therefore employing few people (Mackenzie and Ribeiro, 2009). Chinese-owned sawmills process a small part of the logs locally, in a rudimentary production with little added value to the final product, which raises the suspicion that the investment in the processing units is only to comply with legal requirements for export authorisation. Chinese sawmills serve more as timber marketing stations than processing units (Sun et al., 2008; Terra Firma, 2007).

In sawmills visited by the authors in the provinces of Sofala and Zambezia, the bought logs were squared – the four edges and bark removed to leave a squared log – then exported with the designation of 'sawn wood'. They found that timber dimensions tend not correspond to the required dimensions for sawn timber established by law – to qualify, boards must be less than 7.5 centimetres thick, crossbeams must be between 13cm and 25cm thick and produced from 2^{nd} , 3^{rd} or 4^{th} class species, bars must be at most 5cm thick, strips of parquet must be at most 2.5cm thick and veneers less than 2.5cm. Some Chinese entrepreneurs who import logs rather than processed wood in Mozambique or other African countries cite three reasons: 1) lack of skilled labour; 2) high transport costs; and 3) lack of markets for waste wood (Ekman et al., 2013). Moreover, timber shipping containers are used to illegally export other resources such as precious stones, ivory tips and rhinoceros horns (see Muianga and Norfolk, 2017).

More than 330 companies export timber, including forest concessions, simple licence operators and sawmill operators. Of these, 168 have Chinese capital. However, of the 330 exporting companies, 194 are exclusively exporters, with 99 companies (51 per cent) involving Chinese investment. According to data from the National Institute of Statistics for the period 2011 to 2015, exports increased from 2011 to 2013, where there was a very high peak, and decreased from 2013 to 2015.

The peak of exports in 2013 can be explained by the fact that the price of timber had increased rapidly, leading Chinese importers to buy more wood to avoid further price increases. Thus, in 2014, imports of logs and sawn timber were greater than demand, due to the high stock levels, which led to a reduction in prices and a slump in exports (Lim, 2014).

With the analysis of export data in the period of 2012 to mid-2015, it was verified that the main exit points for the wood are the ports of Beira, Quelimane and Pemba (Figure 8). In the study carried out by FLEGT (2014), the ports of Beira, Nacala and Pemba are designated as the main exit points, since much of the timber that was exploited in Quelimane was transported to the ports of Beira and Nacala. The increase in production at Quelimane port was due to the increase of the shipping line from four monthly ships to eight. Pemba port was considered the most important for timber exports in 2008, accounting for about 80 per cent of all timber exports in the country (Sun et al., 2008). As noted above, in 2015 93 per cent of Mozambican timber exports were destined for China.

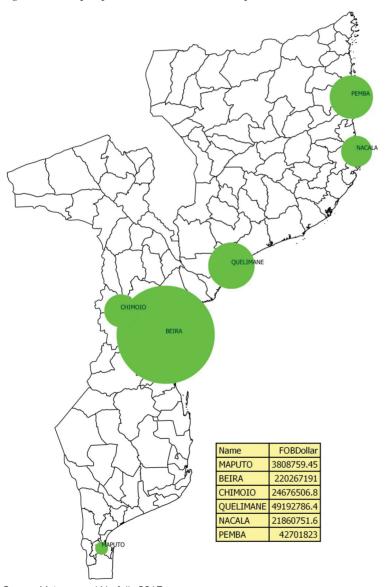
1600000 -1400000 -1200000 -1000000 -800000 -600000 400000 -200000 0 2012 2013 2014 2015 2011 20260 33698 1440647 123386 48462 146143 176836 50671 52636 49844 --- Exports **Imports**

Figure 7. Export of wood products from Mozambique, 2011-2015

Source: Muianga and Norfolk, 2017

Unfortunately, it was not possible to determine from the data obtained how much of this export volume corresponds to log wood or sawdust, and it was also not possible to know which species were exported. Mozambique's exports to China are mainly dark hardwood, which prefers the unprocessed product to avoid a 4–5 per cent import tariff, and because it can be easily resold in large volumes due to high demand. However, there is a market for sawn timber, which requires compliance with market specifications and identifying possible buyers (Huang and Wilkes, 2011; Huang et al., 2013; FLEGT, 2014).

Figure 8. Main export ports for timber from Mozambique



Source: Muianga and Norfolk, 2017 Note: Value in US\$ of freight on board

The data on Chinese involvement in the Mozambican forest sector shows that the export companies are the most highly concentrated. These companies do not have a defined profile. Many of them are engaged in other activities, such as trade in other goods and services, infrastructure construction, and activities not related to the forest sector. From field data, this can be explained by: 1) the ease of meeting export requirements, as opposed to acting as a forest concessionaire; 2) the desire to avoid high operating costs and fees; 3) the weak cash-flow profile of Mozambican timber harvesting operators, which puts the Chinese exporting company in control – dictating the species to be cut, the size of the logs to be bought and their price; and 4) monthly provincial revenue targets for Mozambican customs. If these government targets are not being met, Chinese operators help out by pre-paying their export fees, but part of the deal is sometimes that their containers of timber are not inspected at the time of export. This allows a large number of illegal products to be exported, including wood, precious stones, ivory and rhinoceros tips.

Attempts to control Chinese practice in the Mozambique forest sector

Law enforcement in the Mozambican forest sector has always been perceived to be weak. The forest sector has about 630 inspectors, which is far below the ideal minimum of 1,800 that would allow adequate monitoring (Machirica, 2016). Despite recent purchases of more vehicles for inspectors, agent recruitment and training, and more fixed inspection posts, only a small number of transgressors, vehicles and containers have been seized in recent years.

Enforcement activities have led to some fines being imposed; however, apart from 80 per cent of total fines being paid in 2010 and 2011, the average penalty payment rate is 55 per cent (Muianga and Norfolk, 2017). Infringements include: illegal logging, use of false documentation, cutting logs with a diameter below the recommended level, harvesting or transporting timber more than 10 per cent in excess of the licensed volumes or transit permits, holding outside the authorised area, transporting products without a transit permit or a forest certificate, and passing permits from one operator to another. In 2011, Decree No 76/2011 updated the fines table, with increases ranging from 10,000 to 1,000,000 Mozambican metical (Mt). This resulted in reduced fine payments. Field studies show that there was also an increase in logs abandoned in the forest.

Weaknesses in monitoring are even putting the conservation areas at risk, such as the Gilé reserves in Zambezia Province and Mecuburi reserves in Nampula Province. Not only are local communities and their leaders involved in these illegal activities, but also the Natural Resources and Environmental Protection Force, the Provincial Forestry and Wildlife Services (SPFFB) inspectors and the reserve rangers (Muianga and Norfolk, 2017). And when timber is apprehended, it is sometimes sold back to the offender without fines being imposed – or with fines reduced by the provincial institutions.

Other subterfuges include 1) using forged operating licences and transit permits; 2) using alternative routes to circumvent the inspection posts; and 3) transporting logs in disguised vehicles. For example, several authors document the disappearance of trucks that had been seized at different checkpoints in the buffer zones of Gilé reserve, loaded with ironwood, a species whose logging has been banned since January 2016 (Deffontaines, 2016 and Dias, 2016). SPFFB allocates permits in the vicinity of reserves, even though they know that these operators are harvesting within the reserve.

Interviewees reported cases when multiple copies of the transit permits were seized from the operator, even after the product had been transported from one province to another, or to the port. This means that the operator had not carried out the required procedure of depositing copies 1) at inspection posts and 2) at the provincial inspection post, with the original kept by the operator. This scenario facilitates the sale of transit permits to Chinese entrepreneurs. Regardless of whether operators have permits or not, interviewees state that operators are obliged to pay Mt2,000 in bribes to inspectors at each inspection post to avoid complications and seizure of the wood. Permits are also falsified to conceal excess timber volumes stored on company premises and allow them to be transported to ports or other provinces. However, some NGOs have been working with the SPFFB to train community agents, in order to strengthen their monitoring and to ensure that the SPFFB collect 50 per cent of the fines payable, intended for tax officials, community agents, local communities and any citizen who reports offences.

The forest law, together with its regulations, establishes the transfer of 20 per cent of taxes owed to the state to benefit local communities. The mechanism for channelling and using the 20 per cent are defined in Ministerial Diploma No 93/2005. Prior to the inclusion of local communities in forestry legislation, they only had rights to use the resources for subsistence, were not consulted during the licensing process and did not benefit from any timber harvesting revenues (Sitoe and Tchauque, 2007). However, years after the legislation was created and implemented, not all communities are aware of the legislation and their rights. Communities are generally not consulted adequately, and most are not yet receiving any benefits from logging (Sitoe and Guedes, 2015). The government of Mozambique evaluated the impact of the implementation of the diploma in the beneficiary communities. Five years after its approval, of the 1,089 communities identified as having the right to benefit from the 20 per cent, 861 had been engaged with over the five years (Issufo, 2012). Data published by the National Directorate of Land and Forests (DNTF) in annual reports from 2011 to 2014 verifies that although the revenues obtained by forest and fauna licensing increase each year, the number of local communities identified as being entitled to benefit from the 20 per cent remained the same as in the 2010 report; and the number of benefitting communities failed to rise above 25 per cent of the total number of those entitled to do so (Muainga and Norfolk, 2017). Muainga and Norfolk attribute this to: 1) lack of consultation with communities during inventory processes about their customary rights; 2) lack of government

transparency on the transfer mechanism, complicated by difficulties for communities in opening and managing bank accounts; 3) lack of local employment by forest operators, leading to illegal exploitation by communities in order to get some benefit before the forest is exhausted; 4) lack of NGOs with the resources to support communities in receiving and making good use of the funds. It is now urgent to improve communities' commercial timber rights, or at the very least to improve coordination between local communities and forest operators – for instance to reuse post-harvest 'waste' for charcoal or branch wood for local furniture manufacture. The database developed within the scope of the China-Africa Forest Governance project will help to identify communities that should benefit from logging taxes, as shown in Figure 9.

Legend forest concessions land delimited for community use 200 300 100 400 km Scale 1:7,000,000

Figure 9. Overlap between forest concessions and land delimited for community use

Source: Muianga and Norfolk, 2017

2.4 Conclusions

The database developed is now being finalised and made publicly available following repeated, unsuccessful attempts to interest DINAF in its use (free of charge). Information on the areas delimited for local community use still needs further processing, and the data on timber operators has been almost impossible to access from government authorities despite Mozambique's Freedom of Information Act.

Mapping Chinese investment in Mozambique is a very complex task; the Chinese embassy in Mozambique has no data available, many of the Chinese companies are very small, some are not registered and some are constantly changing their names. Most of China's investment lies in timber exporting companies.

The interviews and analysis in this report suggest that the best way forward for Mozambique is to focus on and incentivise industrialisation and internal forest product processing. This will generate employment and reduce external dependence on woodbased goods, which would boost the national market. It would also create an incentive on the part of those investing in processing to ensure the sustainability of timber supply – which currently seems of little concern to most operators.

Although some communities are informed about their rights, too few benefit from them still. New measures are needed to ensure that communities have greater commercial control over the resources that they alone can patrol; or at least to improve the channelling process of their 20 per cent. Another aspect to be improved is using the collected penalties, since the amounts are sometimes large – these could be used to plan and implement projects with a positive social, economic and environmental impact on the life of the communities. Projects could promote, for example, income diversification; better timber exploitation as well as exploitation of non-timber forest products; and the sustainable exploitation of timber through community concessions (for which there needs to be a revised, simplified format).

Enforcement needs to be improved by implementing new electronic timber-tracking technologies, better enforcement agent training and by including civil society in the monitoring process, as a means of demonstrating more transparency. The database will be made publicly available, to help improve transparency in the forest sector.

3

Forest legal reforms and their impacts

Based on original work by Sheila Menezes and Carlos Serra (2017)

3.1 Introduction

In response to the widespread illegality in Mozambique's forest sector described above, from 2010 to 2012 the Mozambican government introduced a set of legislative measures aimed at improving the legal regime for forests. This included Law No 7/2010, on timber processing taxation; Decree No 30/2012, introducing new requirements for timber harvesting using the simple licence regime; Ministerial Diploma No 293/2012, which increased timber taxes; and Decree No 73/2011, which increased fines and sanctions for breaches of forest legislation.

The China-Africa Forest Governance project had intended, as part of its work, to assess the impact of these reforms. However, there was little time for evaluation, due to significant institutional change following the October 2014 elections, which returned a new government. Plantation forestry remained under the Ministry of Agriculture and Food Security, but the management of native forests and land passed to the new Ministry of Land, Environment and Rural Development (MITADER). In its first year, a forest sector reform was announced by MITADER minister Celso Correia. The head of the project team tasked with assessing the impact of the former reforms was then appointed to lead the process of redrafting forest law. While this was an opportunity, it also required a change in tack on the part of this study.

The overall objective of the research summarised in this section became to analyse the impact of reforming the legal framework for forests in Mozambique. To achieve that objective, the authors defined the following specific objectives:

- 1. To profile and analyse the legal provisions for forests, with a special focus on the legal instruments approved to strengthen sustainability in the forest sector.
- 2. To identify possible signs of improvement or worsening of the forest situation in Mozambique, as a result of entry into force of the new legal instruments.
- 3. To describe and characterise the procedures for administration and management of forests in Mozambique.
- 4. To evaluate the licensing and forest concession system within the model of deconcentration of powers in Mozambique.
- To analyse the forest governance model, identifying the main bottlenecks and/or bottlenecks to implementing a model of transparency for the extractive forest industry, including a reflection on any new institutional model.
- 6. To propose mechanisms and measures to strengthen governance models and forest management in Mozambique.

With so many changes taking place during this analysis, the authors considered this study a baseline against which future impact studies could assess progress.

3.2 Methodology

The research was structured around a starting question: have processes of legal reform in the forest sector, in response to the criticism directed towards it, contributed to improving forest sustainability in Mozambique, in its economic, social and environmental dimensions? The research was based on the following working hypotheses:

- 1. The revision of the legal framework for forests has contributed to improving the administration and management of forests in Mozambique.
- 2. Logging licensing is being accompanied by adequate and effective monitoring and control measures.

The authors carried out a literature review of relevant subjects at national and international level. This work was complemented by data from the National Directorate of Lands and Forests, provincial and district governments, as well as forestry operators' management plans. Next, they carried out a survey and analysis of the legal and institutional framework, including legislation proposed, in force and repealed in the country, considering the context that led to any reform, the reasons for that reform, the possible debates and the final solutions found. The authors also included an analysis of news media, exploring incidents, the geography of occurrence, the typology into

which particular cases fell, the actors involved and other aspects that might prove to be important. A press review was attached to the original document on which this summary is based (Menezes and Serra, 2017). Semi-structured interviews were conducted with different actors, including government officials, magistrates, community leaders, members of local communities, activists from nongovernmental organisations, private operators (including loggers, transporters and buyers), journalists and researchers.

Finally, the authors participated in various seminars, debates, meetings and other events related to the theme, in order to gather diverse perceptions and sensibilities, both in urban and rural areas.

3.3 Findings

The intention of the legal framework

Menezes and Serra (2017) set out to investigate how the legal regime within Mozambique had been structured and then altered, with what aims and with what results. They started with the origins of forest law. They noted that the current legal regime of forests draws heavily on the colonial Forest Regulation of Mozambique approved by Legislative Diploma No 2642, of 20 September 1965. This placed forests under the control of the state and divided them into three licensing categories: 1) areas which could not be licensed or exploited; 2) areas exclusively subject to silvicultural exploitation; 3) areas which could be sold. Licences were divided into: 1) licences for exploitation, of limited quantities and durations; 2) licences for personal consumption; 3) licences for sale; and 4) clearing permits for agricultural purposes. Fees were payable for these licences, and in the case of breaches, licence holders were subject to fines.

Following independence, the legislator approved a new Policy and Strategy for the Development of Forests and Wildlife through Resolution No 8/97, which aimed to contribute to the economic, social and ecological development of the country through the protection, conservation and sustainable use of forest and wildlife resources. This new policy and strategy defined a number of immediate objectives, including a social objective. This emphasised the use and conservation of the resource by communities; the need for community education; and the need for increasing the participation of the rural population and communities as direct agents in integrated management, protection against forest fires, and use and conservation of forest and wildlife resources. There was also an institutional objective: strengthening the organisation and functional capacities at provincial, district and local level in accordance with the requirements of decentralisation and participatory management of natural resources.

With a view to pursuing the social objective in particular, the government defined a number of implementation strategies, including: implementing a network of pilot areas, with communities participating in the conservation and use of forest and wildlife

resources; capacity building; establishing local resource management committees; introducing legal mechanisms to progressively guarantee access to forest resources to local communities; and inventory, demarcation and establishment of management plans, in units of forest areas for community use.

Following this policy and strategy, a new law on forests and wildlife was approved: Law No 10/1999 (LFFB), repealing past forest regulations and all other legislation contrary to that law. The law affirmed that: 1) all forest and wildlife resources are owned by the state; 2) it is up to the state to develop policies for the protection, conservation and preservation of these resources for all generations, but in this process, impact assessment studies must be carried out; 3) in developing these measures, the state should interact with the local community and with the private sector to establish international cooperation whenever necessary; and 4) the responsibility for any forest damage caused would fall on whoever damaged these resources. The LFFB divided forests into 'conservation', 'productive', and 'multiple use'. An exploitation licence is required to fell trees, with associated fees except in cases of personal consumption. There are two main types of licence: simple licence and forest concession agreement.

The legislation envisages enforcement by forest and wildlife inspectors and community agents (to be remunerated on a percentage basis), with all infractions punishable under law, and the forest assets seized and declared lost in favour of the state. Assets should be assigned as follows: 1) sale at public auction; 2) donation of perishable products to social institutions and non-profit organisations; 3) repatriation of living specimens of flora and fauna to their area of origin, or to the nearest protection zones; or 4) return of the instruments to the primary offender, provided they are not prohibited, after payment of the respective fine and compliance with other sanctions.

Decree No 12/2002 approved the LFFB regulation. This regulation is aimed at regulating the implementation of the two main licence modalities – the simple licence (Articles 15 to 24 of the regulation) and the forestry concession (Articles 25 to 36 of the regulation). For example, it defines concession authorisations at three levels: up to 20,000 hectares (ha) must be authorised by the provincial governor, 20,000 to 100,000ha by the Minister for Agriculture, and over 100,000ha by the Council of Ministers. Further detail of requirements for concession holders are given in Menezes and Serra (2017), but a summary list includes the capacity to:

- 1. Establish an industrial processing unit.
- 2. Carry out sustainable exploitation of forest resources in accordance with the approved management plan.
- 3. Respect the rights of third parties in the concession area.
- 4. Allow local communities access to the natural resources they lack for their personal consumption under the LFFB.

- 5. Harvest the existing forest resources in the area, in harmony with the customary norms of the respective local communities, barring legal exceptions.
- 6. Contract sworn inspectors to guarantee inspection of the concession, in accordance with the legal provisions.
- 7. Give preference to local communities in the recruitment of labour for the concession.
- 8. Pay the annual fee of the forest concession and the respective exploitation fees.

Finally, it must be noted that the state had to ensure that 20 per cent of logging and wildlife licence rates were channelled back to local communities. Ministerial Diploma No 93/2005 defined the mechanisms for channelling and using the 20 per cent collected under forest and wildlife legislation. It established that to receive the funds, the community must both be represented by a registered natural resources management committee and have a bank account.

At the time of the approval of the LFFB and its regulation, the forest sector was led by the National Directorate of Forests and Wildlife within the Ministry of Agriculture. Following the elections of 2004, a new National Directorate of Lands and Forests (DNTF) was created by Ministerial Diploma No 202/2005, also under the Ministry of Agriculture. It was responsible for land surveys and registry, and forest and wildlife resources. DNTF did not manage the forest and wildlife resources located within protected areas; these were the responsibility of the National Administration of Conservation Areas, previously under the Ministry of Tourism.

At the local level, forests were the responsibility of the Provincial Directorates of Agriculture, and DNTF was represented by two independent and complementary services: the Provincial Services of Geography and Cadastre (SPGCs) and the Provincial Services of Forests and Wildlife (SPFFB).

The reality emerging in the field

Since the approval of the LFFB in 1999, and the subsequent regulations and ministerial diplomas, many authors and institutions have studied the Mozambican forest issues, constraints and threats of the last two decades. They have made factual observations and proposed recommendations to strengthen forest governance and management. These have been wide ranging and extensive, as summarised below.

Almost as soon as the new LFFB forest law had come into force, there were urgent calls to improve enforcement. Barnes (2001) reviewed forest law enforcement in Mozambique and recommended that a log-tracking system be introduced to deal with inadequate enforcement practices. Del Gatto (2003) made a diagnosis of the increasing illegal timber cutting rates (from an estimated 35–40 per cent in 1997 to 50–55 per cent in 2001), with a loss of revenue to the state rising from an estimated US\$3 million in

1997 to US\$5 million in 2001. Bila (2005) made an exhaustive diagnosis of forest law enforcement, mapping the main problems and providing detailed recommendations to reverse the situation. Ogle and Nhantumbo (2006) sought to study constraints related to forest sustainability, noting both an increase in log exports and weakened government capacity to manage the forest sector effectively, and virtually non-existent reforestation. Emphatic recommendations were made to phase out the unsustainable simple licence regime.

With problems in law enforcement persisting, attention turned more specifically to the issue of corruption. Mackenzie (2006) analysed the variety and severity of problems that affect the forest sector, with the province of Zambezia as a case site, noting excessive and unsustainable cutting but also providing specific evidence of corruption between Chinese timber buyers, local operators and members of government, to maintain the status quo, recommending a full moratorium on logging until these issues had been dealt with. Bossel and Norfolk (2007) looked in detail at logging in the province of Cabo Delgado, with a special focus on Chinese operators, and highlighted a scenario of rapid decline in the biodiversity and commercial wealth of the province's forests - again associated with corrupt practices, as well as non-compliance with forest legislation. Mosse (2008) assessed forest sector corruption in Mozambique, including a mapping of key practices and opportunity structures, identifying several causes behind the illegal logging and resources. Similarly, Ribeiro and Nhabanga (2009) made a detailed analysis in the province of Cabo Delgado, noting poor forest management practices, poor enforcement capacity, and evidence of corruption involving private operators and government officials. Mackenzie and Ribeiro (2009) revisited Zambezia province, and concluded that the forest sector not only does not reduce poverty in the province, but that corruption and illegal activities had paralysed sector development possibilities - criticising the lack of information, transparency, and government reporting that had deteriorated since 2006.

Many authors from diverse institutions provide almost unanimous agreement that the situation was not only bad but deteriorating, proposing critical actions to improve the situation. For example, Mourana and Serra (2010) summarised the many problems identified in the preceding studies and proposed 20 steps to achieve sustainability. The government too, in the form of the National Directorate of Lands and Forests within the Ministry of Agriculture (2013), concluded that inspection within the concessions and simple licence areas was weak, and that illegal logging by third parties was routine. The Faculty of Agronomy and Forest Engineering of UEM (2014) collected six years of data from major cities and ports, and from the sector's annual reports. They confirmed an increase in logging in the last six years, reaching a total of 727,000 cubic meters (m³) in 2012, of which 414,000m³ were consumed in the national market – but most strikingly, with unlicensed (illegal) timber increasing by around 88 per cent from 2007 to 2012 in both domestic and export markets. Tax losses to state revenues were estimated at about US\$11.6 million in 2011.

The Environmental Investigation Agency (EIA, 2012 and 2014) focused on illegal trade in forest species destined for Chinese markets and presented evidence of involvement by government and political figures in the illicit and corrupt timber business, resulting in Mozambican state losses in terms of revenue. For example, in 2014 the EIA estimated illegal logging at 93 per cent, despite the cancellation of dozens of licences following the entry into force of the new requirements for simple licences. They estimated that if demand continued to grow at a rate of 8 per cent a year, key precious and first-class species could be completely extinguished by 2029 - that is, in just 15 years. In the first quarter of 2014 Mozambique became the largest African supplier of imported timber to China, demonstrating the need to strengthen the dialogue between the two countries. A World Wide Fund for Nature (WWF) funded team (Falcão et al., 2015) researched the gap between trade data revealed by the governments of Mozambique and China in the period 2005 to 2013, estimating that timber exports to China were (illegally) 5.7 times larger than the amount officially declared by the DNTF. They also concluded that, despite widespread calls for the abandonment of the simple licence regime, data show that in the period between 2003 and 2013 there was an increase in the number of single licences in each province. This was aggravated by the approval of Decree No 30/2012 of 6 December, which simplified the licensing process under a simple licence regime.

The intention and impact of legislative changes from 2005 to 2012

In direct response to many of the concerns raised above, from 2010 to 2012 the Mozambican government prepared and approved a set of legislative measures aimed at revising the forest legal regime. This included: Decree No 30/2012, covering the new requirements for forest exploration under the simple licence regime; Law No 7/2010, introducing a new 'timber surtax', in which tax rates depend on the degree of processing and are highest for exporting unprocessed logs; Ministerial Diploma No 293/2012, which increases tax rates for timber harvesting; Decree No 73/2011, which increases fines and ancillary sanctions for breaches of forest legislation; and Decree No 30/2012, which approved a plantation forestry regime. Later, Law No 35/2014 significantly strengthened the sanctioning of forest infringements.

Simple licence changes

Decree No 30/2012 introduced significant changes to the simple licence regime, which involved requiring an approved management plan for a contiguous area of no more than 10,000ha, and observing the annual logging quota of 500m³. The new regime involves a contract between state (the provincial governor) and a Mozambican national operator, and extends the time period from one to five years, on a renewable basis. The contract should specify: 1) the volumes per species on the holding; 2) proof of the operator's ownership of the means of logging, haulage and transportation; 3) the duration of the contract; 4)

co-participation and benefits for local communities; 5) the mechanisms for controlling and supervising the activities of the licensed area; and 6) the annual exploitation quota per species. The request for exploration under a simple licence should be addressed to the provincial governor and include the application, accompanied by a proof of national citizenship or constitutive articles published in the *Bulletin of the Republic*, and valid commercial register; a topographical map at a scale of 1:250,000 containing the cartographic elements; a description of the area; minutes of community consultation meetings with the opinion of the district administrator; the applicant's declaration that he or she has not made any other simple licence application throughout the national territory for the requested period, whether as an individual or legal person; and proof of technical capacity to implement the management plan, and means of harvesting, and transporting forest products, through labour contracts signed with technicians, and the title of registration of ownership of the respective means.

Despite these changes on paper, interviewees from the sector indicated that the forestry situation in Cabo Delgado Province and in the country as a whole had not improved (see Menezes and Serra, 2017). The problem, it appears, was never due to the absence of an appropriate legal framework; but the lack of law enforcement, due to weak leadership in the entities tasked with managing forest resources. All interviewees (like the multiple sectoral experts described above) continue to insist that eliminating the simple licensing regime is the way forward, alongside making forest concessions only obtainable through public tender, for a period of 15 years on a renewable basis (rather than the current 50-year period). Some worry that the change increases administrative requirements for operators and will simply lead to an increase in clandestine logging, which, with weakened surveillance, will aggravate the exploitation scenario in the province. Others think that the change has reduced the numbers of simple licence requests and also made it easier for the community to benefit from the 20 per cent of revenue resulting from resource exploitation. All agree that at the very least, the simple licensing scheme should be a bridge towards forestry concessions - that is, it should gradually cease to exist or be a defined 'probationary period' in which management plan scrutiny could form the basis for granting a forest concession.

Differential taxes for processed and unprocessed timber

In response to criticism from very diverse quarters highlighting the importance of encouraging local wood processing, Law No 7/2010 established the timber surtax, approved by Decree No 21/2011. This tax was intended to encourage environmental protection, the sustainable use of resources and to enable the collection of revenues. These revenues could be used for the sustainable development of forest resources, promoting the emergence of new industries for the multifaceted and integral use of forest resources. The tax valuation rates are based on the export of raw or processed wood, adjusted for the degree of processing, and calculated as a percentage of the 'freight

on board' (FOB) price. To determine the FOB price, the Ministry of Agriculture (which oversees forests) provides the reference price for wood and its derivatives to customs every quarter. This is expressed in cubic meters and species (with the exception of finished products, which have different metrics).

Interviewees in Menezes and Serra (2017) felt that the new tax would improve the economy by incentivising value-added processing, which would create jobs to improve rural livelihoods, as well as generating revenues for the country. Currently the tax is paid through customs clearance, and according to the law, should be assigned to reforestation, anti-forest fire measures and the state budget, as well as to the efficient use of human and material resources. Under the terms of the regulation, 60 per cent should be channelled to the state budget, 30 per cent for reforestation and forest management, and 10 per cent for fire fighting. Some experts felt that this should provide an opportunity for modernising the law enforcement system and increasing employment and salaries for law enforcement staff. Other commented that the relevance of the regulation was lost due to the fact that at present, the government had no clear idea of how much wood is being exported because of systemic corruption.

Increasing forest harvesting fees and fines

One of the decisions taken during the study period was to update the forest and fauna exploitation fees through Ministerial Diploma No 293/2012 and Decree No 73/2011, which increased fines and accessory forest sanctions. These measures were approved with a view to contributing to selecting forest operators with the wherewithal to manage the forests well, and to discouraging possible violations of the legal framework on forests.

In their expert interviews, Menezes and Serra (2017) found that these increased fee rates are in fact valorisation of timber resources, which should increase revenues to the state, as well as driving more efficient use of wood by the timber industries. The adoption of this measure led to a reduction in the number of forest operators and the issuance of simple licences. Unfortunately, it has also driven an increase in illegality among Mozambican operators who do not have the resources to pay the new fee. Some interviewees noted that the Chinese operators finance the payments and later use the respective licence to which they are not entitled and which was issued to Mozambican operators for their own harvesting activities, thereby increasing abuses and corruption in the sector. Many interviewees felt that increased fine rates had not solved the problem, but rather encouraged corruption, given that the sector's law enforcement forces have numerous capacity constraints. Law enforcement agents use fixed inspection posts, mobile brigades and fixed teams in the districts – there are few mechanisms to carry out field inspections. The supervisors use their own telephones, and lack radios, means of transport, electronic timber-tracking tools, access to a geographic web-based database that tracks timber flows, and so on. The growth in infractions is accelerating due to this lack of resources and in some cases, connivance with the community itself.

Changes to the penal code

In the context of this urgent need to protect forest resources, changes to the penal code meant that any citizen who extracts, cuts, acquires, sells, displays and exports for commercial purposes wood, coal and other forest resources without proper authorisation or in violation of the licence should be punished with imprisonment and a corresponding fine. However, under Article 352(2) of the criminal code, this penalty is not applicable to the exploitation of forest resources intended for personal use. At the same time, Article 353 of the penal code states that anyone who destroys fauna or flora will be punished with imprisonment from eight to twelve years and a corresponding fine.

The impact of these changes is debateable. For example, after the forest law enforcement operation *Operation Tronco*, which publicly disclosed the results of the infractions, no offender has been punished with a prison sentence. Interviewees in Menezes and Serra (2017) again stressed that the major problem is law enforcement and the agencies responsible for this. Nevertheless, it was agreed that the adoption of the new penal code did complement the LFFB in terms of creating accountability, with those responsible for the destruction of forests penalised for their activities. This represents a step forward in the process of regularisation of infringements resulting from forestry activities, since exploitation without observance of legally established standards is now liable to criminal penalties.

New plantation legislation

Decree No 30/2012 defined a new forest plantation regime, with the object of promoting and guiding the establishment of forest plantations for the purpose of commercial, industrial, energy, and socio-cultural, economic and environmental objectives. It defines three types of planting:

- Conservation forest plantations for multiple and small-scale use, established by the state, natural or legal persons, households, local communities, community associations or organisations, educational and research institutions, with the aim of improving the quality of the environment, rehabilitation of degraded areas or protection of fragile ecosystems.
- Commercial and industrial purposes small-, medium- and large-scale forest
 plantations established by any natural or legal person for the purpose of producing
 raw material or high value-added forest products intended for the domestic market
 and for export.
- 3. Energy purposes forestry plantations established by any natural or legal person for the purpose of producing bioenergy, firewood and charcoal for domestic, industrial or export purposes.

A reforestation fund was also set up, to be capitalised by the reforestation surcharge (part of the fee rates for concessionaires and simple licences) and by 50 per cent of the revenues from the timber surtax, as well as donations towards reforestation. The decree also established rules for forest plantation ownership, the areas that could be covered by the different categories of plantations, and in particular the requirements for commercial and industrial plantations, including the profile of operators, authorisations and responsibilities of investors. Because of the time frames involved, it is too early to assess the impacts of this legislation.

Restructuring the institutional oversight of the forest sector

Presidential Decree No 1/2015 abolished the Ministry for Environmental Coordination and created in its place the Ministry of Land, Environment and Rural Development (MITADER). It defined the powers and competences of MITADER as the central body of the state concerning land and geomatics, forestry and wildlife, environment, conservation and rural development areas. For the first time, the forest sector moved outside the Ministry of Agriculture. Resolution No 6/2015 approved structures within MITADER to include five national directorates (Rural Development, Forests, Environment, Lands, Territorial Planning and Resettlements), one Administrative Directorate (Planning and Cooperation), two offices (Legal and of the Minister) and four departments (Administration and Finance, Acquisitions, Human Resources, and Communication and Image). According to this restructuring, the functions of the National Directorate of Forests (DINAF) included activities in natural forest areas, such as timber and wood fuel (but notably not plantations, which remained under the Ministry of Agriculture and Food Security).

The creation of AQUA

An important new development was the transfer of the forestry law enforcement functions from DINAF to the National Agency for Environmental Quality Control (AQUA). AQUA was established by Decree No 80/2010 as a public institution under MITADER's supervision, tasked (according to Decree No 2/2016) with: 1) developing surveys that indicate levels of contamination or environmental pollution, and interpreting that data to ensure the sustainable development of natural, terrestrial and marine-coastal resources; 2) adopting and implementing measures to improve the capacity for research, monitoring, auditing and control of environmental quality; and 3) implementing land-use monitoring, exploitation and use of forest resources, and environmental quality control. Interviewees of Menezes and Serra (2017) observed that it was too early to assess the impact of this change but they estimated that it would bring great positive impacts in the future, since it would separate out the resource management entity from the law enforcement entity (a necessary step in tackling corruption, provided AQUA can be maintained as an independent entity). Some noted that, since irregularities and illegalities have continued

following this separation, legislative changes will not solve the problem without a change in the mentality of all those putting the new structure into practice and without resources for them to enforce the law.

At the provincial level, the provincial directorates of Land, Environment and Rural Development were created through Decree No 21/2015, which approved the structure of the provincial government. It will be necessary to adjust the staff roles within these directorates now that law enforcement has passed to AQUA.

Forest sector reforms from 2015

Presidential Decree No 13/2015 initiated a process of forest sector reform, arising from the government's observation that forest resources have been threatened due to indiscriminate cutting, logging, charcoal production, shifting agriculture, urbanisation and climate change. The government believes that, if nothing is done, the country risks losing its forestry potential with serious damage to the economy, communities and the environment, worsening its vulnerability to climate change.

Logging ban on ironwood

Enacted to immediately halt the logging of threatened forest species, the government announced a special ban specifically for pau ferro (ironwood) or *Swartzia madagascariensis*. This species has been under great pressure from logging. In the last 11 years, almost 68 per cent of the licensed volume of pau ferro was felled in Zambezia Province and 22 per cent in Cabo Delgado. But the licensed amount has exceeded the permissible annual allowable cut of the species (that is, the sustainable level of offtake that could be replenished by regeneration and growth of the remaining trees). There has been a rapid decline of individual trees with trunks larger than the minimum cut diameter of 30 centimetres. Accordingly, Ministerial Diploma No 10/2016 decreed a special ban on logging pau ferro for a period of five years, starting on 1 January 2016.

A week after the ban's introduction, interviewees of Menezes and Serra (2017) had divided opinions. Some reported an absence of infractions. Others reported encounters with trucks loaded with ironwood and claimed that unbridled and unregulated logging of the species continues. Interviewees reported that the new law enforcement agency's lack of capacity did not allow it proper control of what was being logged. They also claimed that DINAF, the institution responsible for the sector, sells timber that has been seized 'by public auction' back to those who had logged it in the first place.

Suspension of issuing new licences

The government issued a decree in 2016 suspending the authorisation of new licences for two years, to reorganise the forest production areas allocation process, and consequently to ensure the sustainable use of forest resources. This measure has

the advantage of facilitating the inventory, organisation and regularisation of authorised operators; giving time to monitor active operators; and giving time to enact institutional forest sector reforms.

Log export suspension

Under Article 8 of the LFFB, "the State promotes the establishment of industries for the processing of forest products, with a view to gradually increasing exports of manufactured products through specific regulatory measures." However, Law No 7/2010, which created the timber surtax, permits the export of timber in the form of logs for all classes of species except first class. Demand for timber on the international market for certain species, especially those that can be exported as logs, has been increasing steadily – generating high levels of demand and fuelling pockets of corruption. Therefore this law was amended by repealing Article 6, to suspend the export of all logs.

Inspection of forest operators

From 25 November to 15 December 2015, MITADER conducted an evaluation exercise for timber operators throughout the country, except the provinces of Gaza (due to rains), and Maputo (no operators). The process was widely publicised by the media, as it integrated journalists, along with representatives of nongovernmental organisations. It received financial support from the WWF and the World Bank, The Faculty of Agronomy and Forestry Engineering of Eduardo Mondlane University developed the evaluation criteria. The assessment identified 1,081 logging forestry operators, of which 883 operated under a simple licence regime and 198 under forestry concessions. Of the 1,081 forestry operators surveyed, 720 were licensed for the 2015 cutting season. The remaining 361 were not operational, due to weak demand in domestic and international markets, as a consequence of the international economic crisis, mainly in the People's Republic of China, the main importer; and poor technical and financial capacity. The evaluation process covered 881 forest operators, or 81 per cent of the country's total. Of these, 727 operators had simple licences (82.5 per cent) and 154 operators operated under a forest concession regime (17.5 per cent). The level of compliance with forest law and regulations was found to be 45 per cent for simple licences and 57 per cent for forest concessions. Government authorities are now in the process of addressing noncompliance.

Operation Tronco: a timber bust

MITADER, with the aim of addressing the country's forest devastation, launched simultaneous illegal timber apprehension operations in the provinces of Cabo Delgado, Nampula, Zambezia, Tete, Manica and Sofala on 9 March 2017. Among the main infringements detected in the scope of this operation were logging trees below the minimum permitted diameters (usually 30 to 40 centimetres depending on species),

logging more timber than permitted by the licence, and storage, transport and marketing of forest resources without authorisation. For example, in the province of Cabo Delgado alone, the inspectors seized 59,045m³ of wood in the space of one week and issued fines for over US\$1.4 million. In Manica, in the central zone of the country, the operation resulted in the seizure of 37,000m³ of wood and US\$130,000 issued in fines. Faced with this scenario, the National Director of Forests, Xavier Sacambuera, explained that the problem stems from forestry operators logging trees before they reach maturity, many without licences, often during the closed season and with unprocessed timber exports. In total, some 150,982m³ of wood of the umbila, chanfuta, pau ferro, mondzo, pau preto, metonha, methyl and chanato species were seized during an operation that included inspections at the Beira, Quelimane, Nacala and Cabo Delgado ports, Messassa, Nkula and Chacate Preto. Of these, 135,159m³ were logs and 15,823m³ were processed and semi-processed wood.

Controversies have since ensued about how this confiscated wood should be used. Prime Minister Carlos Agostinho do Rosário assured the public that the wood would be used for the production of school furniture. But the Mozambican Association of Wood Operators wanted the wood to be incinerated, as they felt the sale of wood in whatever form merely opens opportunities for corruption or 'legalising the illegality'. Others felt that the wood was not suited to furniture and should be placed at public auction as the law requires. Interviewees of Menezes and Serra (2017) felt that in general, Operation Tronco did not ultimately solve the problems in the forest sector due to some unfortunate flaws in the process, including incorrect application of fines, insufficient time to calculate timber volumes, and failure to keep the timber operators informed of what was happening after Operation Tronco had finished. Despite having shown serious irregularities in the forest sector, these flaws led to fines not being paid, the timber noted as illegal not being marked, with that timber continuing to the shipyards, and the declared value of fines for illegal timber has since been drastically reduced without any clarification of the real reasons from the government. Some interviewees were more positive, however, noting that three cases had been submitted to the Attorney General's Office and some fines are being paid. Yet others felt that with an improved process, the operation should be carried out each year, as it both highlighted and put pressure on operators to abide by the law.

Suspension of logging licences for 90 days

Following the results of Operation Tronco, MITADER ordered the suspension of licence issuance through Ministerial Diploma No 28/2017 for logging in the entire national territory, for all forest operators under a simple licence or forest concession, for a period of ninety days, except those with installed and operational processing units.

A new forest law

Following the approval of a new forest policy and strategy there is a need to start work on developing a new forest law. This will require participation from a broad range of stakeholders, including local communities, national and international nongovernmental organisations, the private sector, higher education and research institutions. The new forest law also needs to consider an approach to building resilience to climate change; restricting logging to the concession regime alone; the provision of an adequate regime for charcoal production; the consolidation of community rights; strengthening law enforcement inspection capabilities; improving procedures for allocating forest rights; and adopting a new institutional framework in line with the enormous and complex challenges of the forest sector. The issue of forest product exports will have to be addressed, an area especially dominated by operators of Chinese nationality.

Creation of the National Sustainable Development Fund

Historically, revenues from the forest sector have been administered by the entity that oversees agriculture, livestock, wildlife and forests. This presupposed the merger of forest revenues with revenues from agriculture, livestock and wildlife – but with little ever returned to forest development. Given the scale of forest revenues, forests effectively financed agro-livestock activities. MITADER has opted to create a mechanism to carry out sustainable development objectives by proposing a new National Fund for Sustainable Development (FNDS). Decree No 6/2016 created FNDS, whose objective is to promote and finance programmes and projects that guarantee sustainable, harmonious and inclusive development.

Comparison with Chinese forest legislation

As China-Mozambique forest relations are set to develop through the newly signed (in June 2018) memorandum of understanding, it was considered instructive to examine how China governs its own forest resources. Some key points are described below. First, in China – unlike Mozambique – forests are ceded to authorised farmers in very large numbers. The Chinese state also establishes the following protection measures: 1) incentives for afforestation and expansion of forest cover; 2) long-term support or financial loans to legal persons and individuals for afforestation; 3) measures to ensure the efficient use of wood; and 4) a forest resource registration system. The Chinese forest law is not only concerned with the conservation and rational use of the timber resource, but with the conservation of forests for soil conservation and water storage. In addition, the Chinese state has established a forest benefit compensation fund which is used to finance planting, for example in shelter forests and special purpose forests. In China there are therefore resources for tree planting, reforestation and forest protection by citizens, and the government is responsible for organising citizen tree planting and reforestation. In both Mozambican and Chinese legislation, the community is expected to

be involved. However, in the cases where timber planting is carried out by state-owned enterprises and institutions, Chinese legislation states that forest resources should be managed by the individual or collective that planted them. If plantations are established by communities, they belong to them. This contrasts with Mozambique, which treats communities superficially and affords them no real commercial control over trees planted or protected on their land.

3.4 Conclusions

The general objective of the research summarised in this section was to analyse the impact of the legal framework reform process for forests in Mozambique. In relation to our first hypothesis, we conclude that at the time of writing this report, the process of revising the legal framework for forests has not contributed to improving the management of forests in Mozambique. The measures approved from 2011 to 2012 were of limited effectiveness and not sufficient to halt the increasing trend of illegal exploitation and export of forest resources, according to correlations between data made public by the national and foreign press, scientific reports published for at least the last two years, and interviewees in top-level positions in MITADER.

On the second hypothesis, the report has not found sufficient evidence to conclude that forest exploitation licensing is being accompanied by adequate and effective control and monitoring measures. Licensing and inspection continue to use highly outdated processes (for example, paper records, visual estimates of volume, hand-drawn maps) without the capacity for control. Law enforcement is currently being transferred to AQUA – but AQUA is still not represented and operational at the provincial level. So monitoring continues to observe the old model, replete with problems. Creating provincial directorates will be indispensable for AQUA's success at local interventions.

The evidence above suggests a failure of the reforms introduced in 2011 and 2012. There is also evidence that illegal operators exploited the period of reorganisation by the forest sector after MITADER was created. The 2011 and 2012 reforms have proven unable to halt the illegal logging and timber exports, according to the Minister of Land, Environment and Rural Development's own recognition that the sector has many problems and requires a structural reform.

There is evidence that the subsequent reforms, initiated in 2015, have not yet been able to produce significant positive impacts on the forest sector. This is due to both the high levels of corruption and disorganisation that continue to exist, and to the delay in setting up the new institutional model. The results of Operation Tronco announced by MITADER reveal the persistence of illegal forest exploitation and trafficking networks, especially those focused on the Asian market.

There is a ray of hope in the ongoing legal and institutional reform process to create a strong central and local basis for a new model of forest governance. The timber surtax was of great symbolic importance, and the separation of law enforcement from resource management may prove highly beneficial in the long run. However, as long as the legal and institutional framework is not fully and properly implemented, and as long as there is a lack of local community inclusion in forest management, the devastating status quo will probably continue.

Recommendations

The main recommendations resulting from this study are:

- Ensure that fundamental aspects such as integrity, transparency and accountability
 are safeguarded in the process of revising forest legislation, strengthening the
 aspects of forest sector sustainability, its role in biodiversity conservation and
 resilience to climate change in the new forest law.
- Accelerate the process of institutional reform, paying special attention to separating the two main components of inventory and licensing versus effective capacity for monitoring and control.
- 3. Continue to carry out law enforcement, but in a judicious and neutral manner.
- 4. Strengthen the channelling of forest resource revenues to benefit communities.
- 5. Develop models of forestry that are controlled by and not parallel to local communities.
- 6. Adopt measures that drive timber processing in the country, in order to add value and reduce imports.
- 7. Oblige certification of loggers.
- 8. Adopt sustainable and rigorous criteria for forest licensing.
- 9. Eliminate the simple licence scheme.
- 10. Improve the capacity of law enforcement officers, including by introducing electronic tagging, databases and drones.
- 11. Improve the capacity of technical staff in forest companies, including hiring technicians trained in forest, environmental and law management.
- 12. Adopt measures to encourage reforestation by concessionaires.
- 13. Define principles and basic rules of environmental management for agricultural activity.

- 14. Assemble and adopt training programmes on legislation, management and monitoring of this resource to key stakeholders on a regular basis.
- 15. Apply fines not only to offenders (loggers) but also to local community members involved in the illegal exploitation of forest resources.



Options for incentives to improve the practice of Chinese timber operators and their Mozambican partners

Based on original work by Duncan Macqueen and Mario Falcão (2017)

4.1 Introduction

As Africa's largest exporter of timber to China, it is vital that Mozambique manages to install sustainable forestry practices that benefit its rural people. As noted above, 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 represents a challenge. So the China-Africa Forest Governance project set out to explore what could be done – and to involve Mozambican experts in that discussion.

This research (published as Macqueen and Falcão, 2017) aimed to map out possible options for incentives to improve the practice of Chinese forestry companies and timber

traders and their Mozambican counterparts. It scoped a broad set of potential options including, but not restricted to, financial incentives.

Specifically, the study considered:

- 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?
- Which of those 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?

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

In summary, the research aimed to take 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. It identified six potential areas of concern for those operators. It then outlined for each area possible incentives that might be developed to improve forest practice. The set of 18 incentive types were felt to reflect the full spectrum of options available (that is, the questionnaire survey of government, civil society and private-sector actors did not reveal further major sources of incentive). Each incentive type was 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 Chinaspecific opportunities. These relate to the characteristics, preferred timber specifications and reputational sensitivities of the Chinese timber market, 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.

4.2 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 (such as 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 in the forest sector, direct involvement in forest 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 the questionnaires by email. The distribution of questionnaires by institution and by province is indicated in Tables 1 and 2.

Table 1. Distribution and return of questionnaires by type of institution

Institution	Amount of submitted questionnaires		Amount of returned 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 2. Distribution of completed questionnaires by province

Province	Institutions					
	Government	Private sector	NGOs	Research and teaching	Total	
Maputo	5	1	2	2	10	
Sofala	3	4			7	
Zambezia	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 was 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 these 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 of the China-Africa Forest Governance 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 International Institute for Environment and Development (IIED) team – will in the future engage Chinese companies in Mozambique with the results of this review process to probe further what options those operators might prefer. Once the survey was completed, data were analysed. A descriptive account of each area of incentive was prepared. This was accompanied by analysis of the views 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. 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.

The framework of possible incentives to improve the practice of forest operators was 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; Lebret, 1961; Sen, 1999; Valkratsas and Ambler, 1999; Alkire, 2002; refined in Macqueen 2013; see also Table 3). 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 3. 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 3. They are based on what Chinese forestry companies, timber traders and their Mozambican partners are likely to be concerned about (what they value). For example, these operators are likely to have concerns over at least six areas of their businesses (see Bolin and Macqueen, 2016) – which are likely to correspond to the concerns of those managing those businesses:

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

Table 3. Framework of options for incentivising better practice

Values		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 community 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 skills and 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

By starting with this comprehensive assessment of potential 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 potential incentives, it will also be possible to detect how seemingly quicker routes to incentivising good practice (such as 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 viceversa. In short – the more incentives can direct individual, company and state practice towards the pursuit of common good in one area (such as care for nature), the more likely it is that those individuals, companies and nation states will pursue common good in other areas (such as 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 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.

Each of the sections that follow explores a set of three potential incentives 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.

4.3 Findings

Resource access, the future control over and rights to Mozambique's forests, is likely to matter to Chinese and Mozambican timber operators. Currently access is licensed through concessions and simple licences (Johnstone et al., 2004). Three options exist to use resource access rules to improve operator behaviour. First, the government could tighten up resource allocation procedures (for example, through concession auction procedures) - although the level of government vested interest in concession management has undermined attempts to propose this (Macqueen and Bila, 2004). Second, the government could alter licence responsibilities, duration and renewal processes. For example, the unsustainable simple licences could be scrapped and much tighter concession inspection and renewal procedures could be applied. Past government promises to remove simple licences and improve concession scrutiny have not yet met with success because of entrenched corruption (Barnes, 2001; Reyes, 2003; MacKenzie, 2006; MacKenzie and Ribeiro, 2009; Egas et al., 2013; EIA, 2013, 2014). Third, the government could tighten up law enforcement - notably by introducing an electronic timber-tracking system. With enforcement staff so stretched, an electronic timber-tracking system would help reduce costs and discourage bribery of low-paid officials - but so far the government has failed to act on repeated independent advice to install such a system (Barnes, 2001; Norjamäki et al., 2007, 2008; Savcor, 2009; Muianga and Norfolk, 2017).

Revenue flows are a vital concern of any forest operator. Past assessments of Mozambican forest operator profitability have shown mixed results - with generally low profitability improved through value-added processing near the harvesting sites (Fath, 2001; Savcor, 2005a, 2005b). Three options exist to use revenue flows to improve operator behaviour. First, revenue-based incentives could be introduced into licence fees, taxes and fines to reward better practice. As long ago as 2002, expert advice suggested that a predominance of volume-based fees would result in perverse effects, such as the creaming off of high-value timber (Rytkönen, 2002). Despite little change in that area, tax reform to reward in-country processing now offers some opportunities to improve operator practice - as they incentivise investment in value-added processing and thereby introduce concerns over resource sustainability to repay those investments. Second, decentralisation of control, such as revenues for timber resting with local communities, could greatly enhance timber values and reduce inefficiencies - but even though 'delegation of powers' legislation was tabled more than ten years ago, the government has not yet passed any such bill. Third, payments for environmental services through the clean development mechanism or for reducing emissions from deforestation and forest degradation (REDD+) could be channelled to those with certified sustainable forest management to incentivise better practice. Unfortunately, almost a decade after the introduction of REDD+ ideas into Mozambique in 2008, no such mechanism exists.

Business relationships with local land-right holders and timber buyers are another area of operator concern. There have been past attempts to group timber operators into associations through structured dialogues and training events to improve practice, including with Chinese operators (Ofumane and Kabubu, 2013; Macqueen, 2015). Three further options exist to use business relationships to improve operator practice. First, greater community forest rights could empower communities, leading to direct negotiations with operators over timber prices and sustainable harvest limits. Yet while 186 communities have had land delimited for community use (Chilundo et al., 2005), only two have managed to get through the rather onerous legislative requirements to gain a timber concession with which to negotiate with timber operators (Nhantumbo and Izidine, 2009) and there is no sign of the government introducing simpler community forest concession systems. Second, operators could be encouraged to form associations with better practice commitments to improve market advantage. Some recent progress seems to have been made in grouping simple licence holders into associations committed to the more sustainable management practices within recently created concessions for them (Nhantumbo and Maússe, 2015). Third, the government and unions could introduce tighter labour standards (see Nhancale et al., 2009). However, unionisation in Mozambique is weak (Blid, 2014) so it might be that the impetus would have to come from operator associations themselves, and there is little indication of this happening.

Risk management is an essential concern for operators working in remote forest landscapes. The repeated accusations of illegal timber harvesting and corruption in Mozambique have led to many attempts at legislative reform (see Menezes and Serra, 2017). The instability this brings is a concern for operators. Three options exist to use risk management to improve operator practice. First, there could be slower-paced, more participatory and better-supported processes of legislative reform. Recent dialogues have shown just how sensitive are both government and operator representatives on this issue (see Mayers et al., 2017), and there remains no structured agenda yet to develop a consultative timetable for legislative reform. Second, the government could develop with China a legality assurance system to counter reputational risks associated with recent reports on illegality. This was proposed to the government by EU delegations under the Forest Law Enforcement, Governance and Trade (FLEGT) action plan but was not taken up by the government of Mozambique. Third, the government could adjust investment procedures and incentives to improve the financial security of operators wishing to undertake third-party certification and to import and install value-added processing machinery that would drive more sustainable forest practice. So far, however, certification in Mozambique is scarcely occurring and has been abandoned on grounds of cost by some operators who once had Forest Stewardship Council (FSC) certification.

Operating efficiencies – the capacity of staff to manage timber extraction and processing operations – should be an important concern for operators. Most staff in Mozambican timber operations have no formal education at all (Savcor, 2005b) and

investment in modern tertiary wood processing has been limited (such as kiln drying, veneer, plywood, mouldings, joinery and furniture) (Ogle and Nhantumbo, 2006). Three options exist to use concerns over operating efficiencies to improve operator practice. First, the government could improve extension and training of operators in forest management. Yet despite some trainings linked to peer-to-peer exchanges (for example, with TCT Dalmann, which involves advanced furniture manufacture), the government authorities are set up to police extraction, rather than educate operators. Second, there could be trade-oriented capacity building and exchanges with major buyers such as China so that operators could better understand processing requirements for imported timber. Early attempts at this have been made within the scope of the China-Africa Forest Governance project. Third, there could be an insistence that operators employ at least one fully qualified forest technician.

Branding and reputation is of concern to operators wishing to improve their market share. The brand identity of Mozambican timber could scarcely be worse, so there might be options to develop branding communities to distinguish themselves from the status quo. Three main options exist to use concerns over branding and reputation to improve operator practice. First, it might be possible to establish brand community groups with improved codes of practice. Yet although many timber operator associations exist (see Nhancale et al., 2009), there is little evidence of robust brand communities developing – in part because of the lack of buyer pull. Second, it might be possible to encourage affiliation with existing certification schemes, such as FSC. While Mozambique does have a forest management standard (SGS, 2015) and did until recently have four certified companies, most of these involve plantation companies not exporting to China (FSC, 2013). Third, the government could develop independent national awards for good operator practice. While there have been regional precedents for this (for example, Proudly South African), this type of innovation has not yet been taken up in Mozambique.

While the historical application across each of these 18 types of incentive has been disappointingly minimal, there are grounds for hope in one or two areas. A summary of the multiple different incentive categories is presented in Table 4. 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 blue with a description of their numerical ranking.

Table 4. Summary of incentives and their potential for beneficial impact

Incentive categories and types for improving the forest practice of Chinese timber traders, 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)

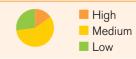


Encouraging business associations and networking platforms (eg bestpractice membership groups to improve market efficiencies and dialogue between the private sector and government)



RANKED 6th

Ensuring adequate labour standards (eg commitments to employ local staff, freedom of association among employees and the development of standards for decent work)



Incentive categories and types for improving the forest practice of Chinese timber traders, concession holders, and their Mozambican partners

Practical potential for beneficial impact - in the opinion of 26 Mozambique forest experts

RISK REDUCTION (concerns over security of operating environment)

Structuring the pace and content of legislative reform (eg developing policy platforms to suit operators with regular consultative processes)



Setting up clear systems of legality assurance (eg developing China-Mozambique timber legality verification systems and due diligence requirements)



RANKED 2nd

Improving investment procedures and incentives (eg promoting and adapting the tax incentives code and specific forestry rebates)



OPERATIONAL CAPACITY DEVELOPMENT (concerns over operating efficiencies)

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

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)



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

BRAND DEVELOPMENT (concerns over reputation with customers)

Establishing brand community groups and codes of practice (eg membership criteria, brand logo development, system of reporting and memberships exclusion/penalties for non-compliance)



Affiliation with certification schemes (eg national standards of forest certification or independent standards, such as FSC and PEFC)



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)



Note: FSC - Forest Stewardship Council; PEFC - Programme for the Endorsement of Forest Certification.

The categories and types of incentives presented in this research provide a tool for the process of improving the management and use of forest 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 provide some indications about which incentives might be developed further in Mozambique.

Because every individual will have a different perception of priorities (see Figure 10) the priorities put forward in this report must not be considered as something fixed or immutable. The numerical figures in Figure 10 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 forest 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. 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 underway to do just that.

Figure 10. Ranking of all 18 incentive types by 26 forest sector experts adjusted to display only the first five priorities

Incentive	Pri	ate se	Private sector ex		perts		_	NGOs experts	expe	irts			Gove	Government experts	int ex	perts	~	esear	ch an	d tea	Research and teaching institutions experts	instit	ution	s exp	erts
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5. Operational capacity developme	capa	city d	evelop	ment	(con	nt (concerns over	over o	operating	ng effi	efficiencies)	ies)														
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6. Brand Development (concerns over reputation with customers)	elopme	ant (ca	oncerr	s ove	ır repu	utation	with o	custor	ners)																
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Note:

Yellow cells indicate the 2nd highest priority option Green cells indicate the 1st highest priority option

Orange cells indicate the 3rd highest priority option

2nd 3rd 1st

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

4.4 Conclusions

From this 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** (for example, through a new timber-tracking system and training of forest law-enforcement officers, customs officers and judiciary).
- Setting up clear systems of legality assurance (for example, developing China-Mozambique timber legality verification systems and due diligence requirements).
- Introducing more stringent licensing and licence-renewal procedures
 (for example, 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 (for example, personnel with qualifications in forest management and processing, and/or Mozambican nationality).

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

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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. Together, the new law and forest development programme described in Section 3 have the capability to implement almost all of the incentives we describe here. But some will be relatively low cost and quick (such as changing resource allocation rules), while others are much more costly and long term (such as extension and training of forest operators in sustainable forest management). Making sure the proposed development programme '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 ban on the export of unprocessed logs of precious species is widely circumvented. It 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.

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 improve operators' technical capacity for sustainable forest management — with benefits in revenue both to the companies involved and to the country as a whole.

5

Timber trade data discrepancies and their resolution

Edited by Clare Rogers based on original work by Andrade Egas, Peng Ren, Jingwei Zhang, Ernesto U. Júnior, Narciso F. Bila and Eunice C. Sitoe (2018)

5.1 Introduction

Many studies have found that across different international trade data platforms, timber export volume statistics reported by Mozambique differ from import volumes reported by China and other importing countries. In 2015, the Global Environmental Institute (GEI) conducted a timber flow study that found major data discrepancies between Chinareported data and those reported by African countries, including Mozambique (Chang and Peng, 2015). The report also summarised previous research that had identified a variety of factors that cause or impact these discrepancies, such as the use of different units and conversion factors, log measurement methods, timber classifications, underreporting and outright smuggling. Given the depletion of Mozambique forest stocks, Chinese involvement in that depletion, and the fact that reforms to improve the situation have not proven effective, accurate data on timber trade flows is essential. This section summarises the findings on the possible sources of these data discrepancies, and recommendations to resolve them.

This section is based on a summary of two studies that took up the research where the GEI 2015 timber flow study ended:

Tackling Discrepancies in Timber Trade Data: Comparing China and Mozambique (Egas et al., 2018) suggests that many of the possible sources of data discrepancies could be controlled and managed during the official import and export procedures. The study investigated the documentation process and data collection of the customs departments and other relevant agencies in both China and Mozambique, comparing data recording and verification procedures in the timber supply chain, as well as the customs procedures between China and Mozambique. It aimed to identify differences and gaps in regulations and implementation and offered recommendations for future studies and customs engagements. This study was based on a literature review, semi-structured interviews with government and private sector organisations, and observations and unstructured interviews on field visits.

Procedures for Registration and Data Verification in the Timber Supply Chain: An Exploratory Study (in Portuguese; Egas et al., 2017) focused on the Mozambique side, in order to understand the timber trade and particularly the data logging procedures in the timber supply chain for export, to determine the likely weaknesses and mis-registration of timber that may lead to statistical discrepancies in timber exports from Mozambique and imports from partner countries. This study was based on a literature review, including of forest legislation and recent studies; semi-structured interviews with government and private sector organisations; and observations and unstructured interiews on field visits, in the city of Maputo and the provinces of Sofala, Zambezia, Nampula and Cabo Delgado.

5.2 Data discrepancies

According to the UN COMTRADE database, while Mozambique exports forest products to several countries, China is overwhelmingly the main destination: more than 93 per cent of the volume of Mozambique's forest-based exports went to China in 2015, while another 12 countries shared less than 1 per cent of the remaining volume. However, several previous studies find that statistics on values and volumes exported by Mozambique differ from those reported by China and other importing countries from Mozambique. For instance, Eduardo Mondlane University (UEM-FAO/FLEGT, 2013) and the World Wide Fund for Nature (WWF, 2015) show that the total volume reported by importing countries was greater than the volume reported by national official statistics – by more than 56 per cent. This corresponds to more than 150,000 cubic metres (m³) of equivalent logs in 2012 and 180,000m³ in 2013.

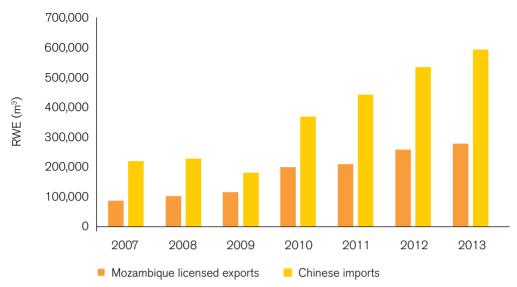


Figure 11. Timber exports to China: Mozambican vs Chinese reports, 2007-2013

Note: RWE – round wood equivalent. Source: Chang and Peng, 2015

In Mozambique and other countries where part of the volume is not licensed due, among other reasons, to the exploitation of unregistered timber (for domestic use as firewood, by local communities for construction, and transporting for sale), the 'volume difference equation' is an alternative method for estimating the volume exploited annually (UEM-FAO/FLEGT, 2013). However, the estimate's reliability depends to a large extent on the accuracy of household consumption data and export statistics. The discrepancy in timber trade statistics between the exporting country and the importer makes it difficult to find even an approximate estimate of the exploited volume, as the source of export data is questionable (whether this source is the exporting or importing country's data).

5.3 Potential sources of data discrepancies in Mozambique

Both reports describe Mozambique's timber trade procedures before and during export, and the data records required at each stage: applying for a licence, harvesting, transporting (requiring transit permits and inspections at strategic checkpoints) and packaging and inspection for export. The reports found potential sources of volume data discrepancy at every stage of this process. The volume errors are not cumulative; one set of errors could be introduced during felling and transport, and a different set during packaging. However, the most significant potential source of error appears to be the equations used to calculate the volume of timber loaded into containers, which could be greatly underestimating the volume of timber exported to China.

During logging

At felling sites, a records book is used to record logs cut at the harvesting site in a given year, in accordance with Articles 18 and 21 of Decree 12/2002. Recorded data includes species and tree diameter; timber volume is calculated using the average diameter of a log with a set formula.

At this stage, inconsistent diameter measurement procedures can create data errors. Once the trees are felled, their cross diameters with bark are measured at the bottom and top of the logs, as well as the length of the logs. However, there are cases where operators measure diameters without the bark, and in others cases the diameters are measured from the beginning of the sapwood to the end of heartwood, a technique called *meio borne*. Taking into account that the licensed volume refers to volume with bark, the later procedures for diameter measurement lead to an underestimation of the licensed volume registered in the records book at the harvesting site and the main landing, as well as in transit permits.

At the main landing site

Where timber is loaded into vehicles for onward transport, the lack of control on volumes that exceed the licensed volume could also contribute to data error. Timber loading is carried out by the operators themselves, who record the volume of timber being loaded on the timber specification form. There is no mechanism for direct and systematic control of loading by Provincial Forest Service (SPF) law-enforcement officers or other government agents. UEM-FAO/FLEGT (2013) found that harvesting volumes in excess of the licensed volume is one of the main irregularities, ranking fourth among eight irregularities for forest concessions and third among six irregularities for simple licence operators. Because field inspection can be difficult and impractical, loading volumes in excess of the annual licensed volume is often overlooked at the main landing site.

Transport checkpoints

Provincial Forest Services are responsible for issuing transit permits that contain information on the volume of timber being transported, in accordance with Article 10 of Decree 12/2002. To transport timber, the operator needs to apply for a transit permit, indicating the amount of wood being transported and the specific means of transport, accompanied by a copy of a certified licence as well as a completed timber-specification form. Transported wood then passes through checkpoints. These are meant to conduct detailed verification of whether the volume is in accordance with legislation. Yet in practice, checkpoint officers check wood species and their diameters and volumes mainly based on their own experience. If there is any suspicion of volume excess, a sample of logs is selected for immediate measurement and the average volume is calculated. The average volume is then used to calculate the total volume of the load, based on the total

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number of logs in the truck. Due to the large variation in diameter, length and shape of the logs, this procedure does not seem to be reliable for detecting any underestimation of the transported volume.

Exceeding licensed volumes from the main landing to the processing unit or shipyard can be caused by a number of factors:

- 1. Transporting loads with valid transit permits but with an undetected volume excess
- 2. Using false transport permits (such as unused permits for previous timber loads), and
- 3. Transporting timber without permits (by circumventing checkpoints or travelling through them when the checkpoints are closed).

These factors may result in checkpoints recording lower volumes than the real volume being transported; it may be in the operator's interest to get more timber to the packing sites than their annual licence allows. The reason for this, as explained below, is that equations used to calculate how much timber is inside containers routinely underestimate that volume. So, if the operators can get additional volumes of timber to the packing sites, they can export it without detection.

Container packaging and inspection

The operator submits an export request to the local customs office in accordance with Decree 21/2011. Once the request has been approved, a packaging assistance team is formed, which includes an SPF law-enforcement officer and an agent of the Mozambican Tax Authority (as per Decree 21/2011). Packaging can be done at a shipyard within or outside the city or within the port area, and the exporter covers all costs of moving the team to the packaging place. During packaging, the SPF officer is responsible for inspecting the volume and species of timber products to be exported, and detecting any irregularities.

However, volume estimation and verification at packaging sites is constrained due to limited time to measure individual boards, planks or logs. Due to high loading volumes and the slow process of loading wood into the containers, packaging usually takes several days and it is practically impossible to count or verify the volume of each log, board or plank with only one SPF officer. To quickly estimate the volume being packaged, a reference volume per 20-foot container is used with a piling conversion factor (PCF), which is the ratio of the solid volume of logs or processed wood to the corresponding container volume. In Mozambique, empirical reference volumes per container of 20 feet are usually applied ranging from 10–12.5 cubic metres (m³) for logs and 13–15m³ for unsquared processed wood. Taking into account that a 20-foot container has an internal volume of about 33m³, the reference volumes adopted correspond to piling conversion factors ranging from 0.30–0.38 for logs and 0.39–0.45 for unsquared processed wood. Thus, it can be assumed that between 30 and 38 per cent of the useful capacity of a

container is filled by the actual volume of logs and between 39 and 45 per cent by the volume of unsquared processed wood. This instinctively seems rather low.

The use of piling conversion factors of volume in containers to solid volume has been recommended in the literature by different authors and for different species due to its practicality for quickly estimating the volume of logs. However, the literature often refers to piling conversion factors for small diameter logs. No piling conversion factors were found in the literature for commercial logs of large-diameter hardwoods. Considering: 1) the piling conversion factor for hardwood logs of 0.65 recommended by CATIE (2012); 2) that firewood logs were used to generate that factor; 3) that the other lower piling conversion factors encountered refer to very small diameter logs; and 4) the piling conversion factor increases as log diameter increases – it is estimated that the real piling conversion factor of logs for export (large diameter logs) should be much higher than the values of 0.30–0.38 used in Mozambique.

These volume differences – between the volume estimated to be within containers using **faulty piling conversion factors** and the real volume in those containers – show how volumes that exceed the annual licensed volume can be packed undetected into containers. These excess volumes then reach shipyards and are exported without being recorded in official export statistics, which are based on the joint packaging assistance report alone – as long as they remain undetected during the processes of logging, landing and transport. Previous research has also suggested other deceptions that can be practised when loading wood into containers (for example, concealing species listed by the Convention on International Trade in Endangered Species, CITES, behind more regular legal timber).

5.4 Potential sources of data errors in China

China employs many methods across different stages to ensure that the imported timber is in accordance with domestic regulations, as well as the international CITES agreement. The customs procedure involves product verification (by confirming the required product information, including the Harmonised Commodity Description and Coding System (HS) code), then electronic document verification, followed by manual verification by customs officials.

China's customs procedures also maintain a complete record of all the timber products being imported through customs. But despite being a fairly thorough process, potential misrepresentations and risks still exist and may allow timber products to pass through customs with an incorrect record. There are four main ways by which differences between data reported by the two countries can exist.

Forged documents

First, it is unclear how the Chinese customs and the China CITES office distinguish between real and forged documents from exporting countries such as the certificate of origin and the CITES export licence. While presentation of these documents is required for product and document verification processes, **these documents are usually photocopies rather than original copies**, thereby raising the risk of using forged documents.

Different data-recording methods

Different data-recording methods are a second reason for the difference between China's and Mozambique's figures. During the document verification stage, possible **price arbitration may lead to differences** in values recorded by the two countries. Also, while many countries conduct trade statistics using the fiscal year, **China customs trade data statistics reflect the calendar year**. With these differences, it is necessary to compare the time periods used by Mozambique and China. Additionally, it should be noted that when cross referencing the trade data reported by different countries, **only the first six digits of the HS code can be used**, as inclusion of the seventh and eighth digits vary by country.

Log and sawn wood classification

There is anecdotal speculation that China and Mozambique's differing timber classification standards can also result in data discrepancies. For example, in China sawn wood is defined as wood that has undergone a certain amount of processing. This 'extent of processing' for sawn wood in Mozambique is comparatively much lower: in fact, logs that are roughly cut into pieces may be classified as sawn wood in Mozambique. This difference in log and sawn wood definitions can result in **unmatched data feeding into the different classifications**.

Transshipment

It is also worth noting that transportation may create potential issues in documentation and recording. In fact, timber shipments from Mozambique usually transfer through other countries and regions for repackaging and sorting, such as Comoros, Singapore, Malaysia and Hong Kong, before continuing to China and other Asian countries (Ekman et al., 2013). There are also accounts that some timber exports from Mozambique are actually first transported to Tanzania, Zambia and Uganda, and then shipped out from these countries. **Such complicated transportation routes may confuse the country of origin records at Chinese customs**, as well as the country of destination records at Mozambican customs.

5.5 Analysis combining the Mozambique and China procedures

Analysis of Mozambican export procedures shows that circumventing checkpoints and volume estimation errors are potential errors along the supply chain, and that volume estimation errors during packaging should be highlighted as the major potential error. When using reference volume per container to estimate the total volume of timber being packaged and exported, if each container is completely filled it can actually hold more than the volume that is officially recorded. This can cause significant differences between the officially recorded volume and the actual exported volume.

It is as yet unclear whether such differences also explain the trade data discrepancy, as reported by the two countries respectively. Abiding by official procedures, the Chinese customs verify imported timber volume by checking contracted volume and export permits from Mozambique, which should therefore reflect the same volumes recorded in Mozambican official records. If timber that had circumvented Mozambican checkpoints were to enter Chinese customs, the only possible way would be through the use of forged documentation to match the actual imported amount. In cases where Chinese customs conduct an examination and discover that the actual volume is larger than the documents have claimed, it is classed as timber that has been illegally smuggled and therefore is not reflected in the official import records.

As noted above, transshipment may also introduce data errors. For example, in the case of transshipment in Hong Kong, the sealed packages may be opened and the timber redistributed to different countries. The destination country as recorded at the Mozambican customs may therefore be Hong Kong. As the Chinese customs requires information about the country of origin, Mozambique would still be in the record, no matter where the timber was transferred and re-packaged. As such, the import volume recorded in China might exceed that of export in Mozambique, which is in accordance with the pattern observed in UN Comtrade data in 2014 and 2015.

While comparing Mozambican and Chinese procedures for the export and import of timber products, the different methods and styles of data management in the two countries were found to have complicated the comparison. For example, in Mozambique it seems that the estimation of volume is based on the reference volume per container, while the Chinese customs rely solely on the claimed volume, except for occasional irregularity checks. Also, the first-order unit for the timber trade record in China is weight in kilograms, instead of the commonly used volume unit of cubic metres in Mozambique. Additionally, China uses HS codes for timber specification, but Mozambique does not use it, making it difficult to compare the same kind of export and import. The official data records kept by Mozambican SPFs and national forestry departments were

found to be different to the UN Comtrade database, further confusing the analysis of data discrepancies.

5.6 How can data discrepancies be resolved?

Resolving these data discrepancies and producing accurate data on timber trade flows is essential, given the depletion of Mozambique forest stocks, Chinese involvement in that depletion, and the fact that reforms to improve the situation have so far proven ineffective. The underestimates of timber loaded into containers potentially drive other irregularities in timber concessions, protected areas and community lands, where companies want to get more timber into the landing sites than their licensing arrangements allow. How can these discrepancies be resolved?

Both reports summarised here recommend more streamlined and accurate information management on the Mozambique side, as well as cooperation between China and Mozambique to better regulate timber supply chains and manage customs procedures to fill the gaps. Officials in both countries acknowledge that resolving this problem is in their mutual interest, and a dialogue is emerging, as evidenced by the recent customs exchange described below.

Recommendations for Mozambique

- Establish an integrated electronic forest information management system, including data logging throughout the timber supply chain, which allows remote data entry to be synchronised by a central database. Particular attention should be given to recording the geo-referenced origin of the felled wood, with a view to improving monitoring and increasing the transparency of information on licensed timber movements.
- Study the possibility of establishing more reliable and expeditious methods for verifying transported volumes at inspection posts.
- Carry out rigorous studies taking into account the various identified parameters
 to obtain more accurate piling conversion factors for wood export volumes (for
 processed wood only, given the recent export ban of timber logs), and to confirm the
 hypothesis that faulty PCFs are leading to a significant underestimate. Alternatively,
 a system based on weight rather than volume could be developed, as this might be
 easier to verify.
- At the packaging stage, accompany calculations of timber volume in containers with a piece-by-piece measurement from randomly sampled containers (Article 12 of Decree 21/2011). This would require larger packaging assistance teams or forming new teams for the purpose, given the amount of work involved.

Recommendations for China-Mozambique cooperation:

- Strengthen the current regulations and implementation which govern licensing, harvesting, transport and export – with particular attention paid to investing in equipment to more reliably estimate volumes, both at checkpoints and with more reliable conversion factors to estimate timber volumes loaded within containers, as recommended above.
- Investigate opportunities for close collaboration between the two countries, to
 construct an electronic system that can better integrate the processes and data. For
 timber and other products that need monitoring from the start of their supply chain
 through to export, a tracking system may also be a good idea to allow for consistent
 data matching throughout the whole supply chain, as recommended above.
- Develop mutual recognition of trade restrictions and possible use of the Convention on International Trade in Endangered Species – including species for which specific export restrictions exist within Mozambique that need recognition by Chinese customs authorities.
- Establish a platform for exchanging data on containers of traded timber between
 the National Agency of Environmental Quality Control (AQUA), the tax authority of
 Mozambique and importing countries, in order to reconcile weight and volume data of
 the exported containers with the same data on arrival at their destination.

5.7 Customs exchange workshop

In response to the recent studies calling for closer cooperation between China and Mozambique on timber trade data discrepancies, a workshop on Mozambique-China Timber Trade Customs Procedures was held in Maputo, Mozambique on 26–27 February 2018. Facilitated by WWF-Mozambique and GEI, with Professor Andrade Fernando Egas of Eduardo Mondlane University, five participants from China and nine from Mozambique, the event formed a custom exchange for relevant stakeholders from both countries. The main objectives were:

To compare China and Mozambique customs procedures for import and export, including examining the declaration forms and lists of required documents, to identify potential differences and gaps that may risk leading to undocumented transaction data as well as illegal timber trade. Identifying these risks could help combat the illegal timber trade by providing recommendations to the Mozambican government on better policy-making and implementation capacities, and potentially combat corruption within the government.

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- To consider the possibility of building an electronic customs data system in Mozambique to streamline and synchronise data records from the provincial to the national level, in response to the main findings of *Procedures for Registration and Data Verification in the Timber Supply Chain* (Egas et al., 2017).
- To discuss statistical methods at the national level, and the possibility of uploading data to international databases such as UN Comtrade.

Participants also visited the customs office and port in Beira, Mozambique and observed how the Mozambican customs clearance system manages data from declaration forms and various required documents, as well as how statistics are managed.

According to feedback from delegates, the discussion and the study tour helped both Chinese and Mozambican participants to come away with a better understanding of the differences in the customs clearance procedures between China and Mozambique, especially the different measurement and data recording styles that can cause difficulty for comparison and potential discrepancies. More importantly, the discussion led the Mozambican stakeholders to better understand the various responsibilities of different departments in Mozambique in terms of issuing timber trade policies, implementing and monitoring the implementation of these policies, and managing data for national statistics. They identified the need for better coordination between these departments so that timber trade data could be recorded and managed in a unified manner. It was not yet decided which department in Mozambique would upload the data to international databases like UN Comtrade, although it was agreed that a unified system would help better correct the data uploading to international systems. The customs representative from Mozambique also raised the issue of corruption during the meeting, something the country is aiming to combat.

The visit to Beira port gave all participants a better idea of how customs clearance is completed using an electronic system. Following discussions with the Chinese delegation, it was agreed that the system needs more harmonisation to link data between different sections, including document checking, scanning, packaging and shipping. Additionally, more rigorous timber export controls are needed. For example, the certificate of origin required for timber export can be issued by the Chamber of Commerce, which is not considered an official authority, and is said to be easily obtained.

In terms of potential collaboration between Chinese and Mozambican customs on building electronic customs systems, the Chinese customs information technology experts proposed that any solution should be tailored to Mozambican needs rather than directly copying Chinese systems, due to the different development stages of each country. The Chinese delegation also introduced a customs capacity-building programme that China has been facilitating for African nations, and proposed that the Mozambican customs

officials use this programme to learn from China's customs development in order to find the best solution for Mozambique.

A visit from a Mozambique forestry delegation to China took place in March 2018, and a memorandum of understanding has been signed in June 2018 between the Chinese and Mozambican governments. Participants from both countries have promised to continue discussion on customs cooperation to facilitate data sharing and management, and better implement timber trade policies.

Case study of a community concession: Nipiode

Based on original work by Arnela Maússe (2017)

6.1 Introduction and analytical framework

For many years, communities have managed Mozambique's forests with little overall change in forest cover. Traditional land-use practices, such as shifting cultivation, burning for animal hunting, renewal of pasture and extraction of honey constituted minor forms of disturbance that allowed the evolution or renewal of the ecosystem. But with the arrival of the market economy, the increasing demand for natural resources due to growing populations at home and abroad, and the dependence on them for consumption and commercialisation, have begun to erode those historic patterns of sustainability (Maússe, 2013). The upsurge in Chinese demand for timber is exacerbating those trends.

As noted in Section 4, the Mozambican state has established a legal framework to guide the exploitation of forest resources while ratifying various protocols, treaties and conventions. Recognising that there are limitations to the effective coverage of services, both in terms of promoting good forest management practices and monitoring forest operations, in 1995 the state adopted a model of participatory forest management.

The legal framework for this model rests in the Forest and Wildlife Policy and Strategy, the Forest and Wildlife Law (Law 10/99), and the Forestry and Wildlife Regulations (Decree 12/2002). Within those texts, community-based natural resource management (CBNRM) is the approach that puts the participatory management of natural resources model into practice. Various models of CBNRM exist (Sitoe and Tchaúque, 2007), including public-private conservation partnerships, community farms and agroforestry systems, community plantations and community forest concession in partnership with the private sector. It is the latter model of CBNRM that is most relevant to the topic in view here – China in Mozambique's forests. Communities could potentially play a major legal role in supplying timber to Chinese operators (moving away from the widespread clandestine felling of timber that on occasion involves community members). Yet, to date, only two community businesses have managed to acquire timber concessions – and their operational history has not been successful.

The Nipiode community concession is one of the few initiatives in which communities managed to acquire a concession. They were represented by the Nipiode Forest Resources Management Committee (COGERFFN), giving them rights to use an area of forest land for exploitation of forest resources based on the forest concession regime. Although several previous reports have urged the devolution of forest resources to communities as a basic premise for sustainable forest management, in this case the community forest business was not successful.

This section, based directly on the work of Maússe (2017), aims to identify and describe the different factors that contributed to the failure of the Nipiode community concession and why it did not end up supplying the export market. It intends to: 1) describe the context; 2) describe the community concession's model of operations; 4) identify the potential causes of the initiative's failure; and 5) identify opportunities for better models of community supply for the future.

6.2 Methodology

Following a desk study review, field work was carried out in the Nipiode community concession. Located in the districts of Mocuba and Mulevala, it has an area of 20,000 hectares (ha) covering a total of five communities: Merça, Namaquita Velha, Nigula Velha, Mariha/Muadua and Muaquiua-Sede. Figure 12 shows the location map of the Nipiode community concession area.

miles km R. Mitali R. Namiruculo R. Melela Sample plots **Boundaries** Rivers Roads Vegetation: Field Dense deciduous forest Forest with shifting cultivation Open woodland Delimited area

Figure 12. Location of the Nipiode community forest concession

Source: Maússe, 2017

The study combined qualitative and quantitative methods. Qualitative data collection techniques included direct observations and semi-structured interviews with key informants (civil society organisations, Zambezia Provincial Forestry and Wildlife Services, COGERFFN members, COGERFFN leaders and community leaders). We also conducted interviews with groups (members of the community). The work team had access to the traditional leaders (*régulos*) of four communities: Merca, Nigula Velha, Namaquita Velha and Mariha/Muadua. Table 5 summarises those interviewed during the data collection process.

Table 5. Interviewees in the research process

Institutions	Position of those interviewed	Number of interviews
ORAM-Zambezia	Head of ORAM	1
SPFFBZ	Head of Unit	1
COGERFFN	Members of the committee	10
Community leaders	Traditional leaders of four communities	4
Leaders of COGERFFN	Ex-president	1
Local communities	Community members	14
TOTAL		31

Note: ORAM - Rural Association for Mutual Aid.

In order to assess concession land use, a map of land cover was drawn through geographic information system programmes and a few 'ground-truthing points' (geographic coordinates) were visited to verify the map. This information was necessary to meaningfully discuss any future recommendations for revitalising the forest concession. Figure 12 shows the different types of land cover/use within the Nipiode community forest concession, as well as the ground-truthing points sampled. Data analysis triangulated information from the interviews with the Provincial Forest and Wildlife Services of Zambezia (SPFFBZ), the Rural Association for Mutual Aid (ORAM), COGERFFN, community leadership and local community members.

6.3 Findings

The political context

In Mozambique, forests constitute state assets and their use is governed by rules (policies, regulations and laws) established by the state. The CBNRM model legal framework was developed in 1995 and recognised the effective participation of the main actors and users of natural resources as a tool to achieve the sustainable use of natural resources. Under the forest and wildlife policy, strategy, law and regulations, communities are afforded rights to free subsistence use of forest resources. Exploitation for commercial purposes, however, requires communities under Article 14 of Forestry and Wildlife Law to follow the procedures for simple licences or forest concession agreements. Forest concessions offer an opportunity for long-term resource rights, but require compliance with several rules to ensure the sustainable and efficient use of forest resources, such as a management plan, installed equipment for the primary transformation of logs into

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sawn timber, established means for reforestation, and so on. For local communities, the costs involved in the entire process for obtaining either a simple licence or concession are prohibitive. As a result, many communities get involved in illegal timber supply (such as in the provinces of Manica, Sofala and Zambezia), providing timber to local carpenters and to furtive and even licensed operators operating in their area.

Nevertheless, the Forest and Wildlife Law also provides for the creation of participatory management councils, consisting of members of the community, the private sector and NGOs working in a particular area; and community management committees, constituted by community members. These institutions in theory provide a framework around which commercial community forest businesses could be built. According to Matakala and Mushove (2001), the devolution of rights over resources to communities was seen by the government as an important element for the involvement of communities in their protection. Since 2000, several donors have put money into the country to operate national programmes of community land delimitation to help secure such rights. Civil society organisations such as ORAM have worked extensively on this area, and the Community Land Initiative has facilitated financial resources for various service providers throughout the country to delimit community land. Having a land-use right (DUAT) and approved land-use plan, including existing resources, is not enough for communities to exploit forest resources for commercial purposes. However, with the right to use land at the community level, it is possible to develop partnerships with the private sector aimed at accessing licences, and even starting the process of forest resource exploitation.

Genesis of the Nipiode Forest and Wildlife Resources Management Committee

Land delimitation by ORAM in the province of Zambezia included the communities of Muaquiua-Sede, Nigula vieja, Mariha, Merça and Namaquita Velha. During a dissemination exercise on land law and community rights over land, the local population raised the issue of pressure on forest resources resulting from illegal partnerships between communities and traders. As well as degrading forests, benefits only accrued to a few individuals (often community leaders). In many cases, the traders with whom the agreements were signed did not have a robust economic structure, and they ended up abandoning the logs in the forest and failing to pay workers – which greatly irritated community members. The state also lost revenue from logging (from which 20 per cent is deducted and rechannelled to the benefit of those communities). The communities therefore requested the support of ORAM to reverse this situation.

With the technical and financial support of ORAM, community consultations were held in 2007 about establishing a community forest concession by formally registering a management body. The Nipiode Forest Resources Management Committee was therefore constituted, initially with 13 members, as 2 to 3 members were elected from each of

the 5 communities covered in the proposed community forest concession area. In 2016, COGERFFN members were reduced to 10 members (8 men and 2 women). The initial objectives were to set up a management structure to sustainably manage the concession area. In order of priority, the understanding of that committee's objectives included: preventing illegal activities; protecting the forest from fire; developing sustainable practices; generating income for the communities; and establishing a forest business on behalf of the communities.

ORAM continued to support COGERFFN, and approximately 80 per cent of respondents (committee members and community members) reported having benefited from a number of training sessions with a range of content (in order of perceived emphasis): institutional management, forest law enforcement, forest management, nursery establishment and seedling production, financial management and forest restoration. A consultation process for identifying the concession area was also conducted by ORAM with the support of the Provincial Service of Geography and Cadastre (SPGC) and the Provincial Service of Forests and Wildlife (SPFFB), allowing a 20,000ha community forest concession to be legalised, covering the five communities that make up COGERFFN - four belonging to the district of Mocuba and one to the district of Mulevala. The committee and the communities set up working groups to put into motion the various objectives of the committee's constitution. Since surveillance is the most important element for protecting the resource, a group of nine called G9 was created in each of the communities, whose task was to oversee monitoring of the concession for illegal activities. In addition, small groups were set up to raise community awareness of good practices (fighting uncontrolled fires, carrying out the management plan, seedling production in the nursery and reforestation).

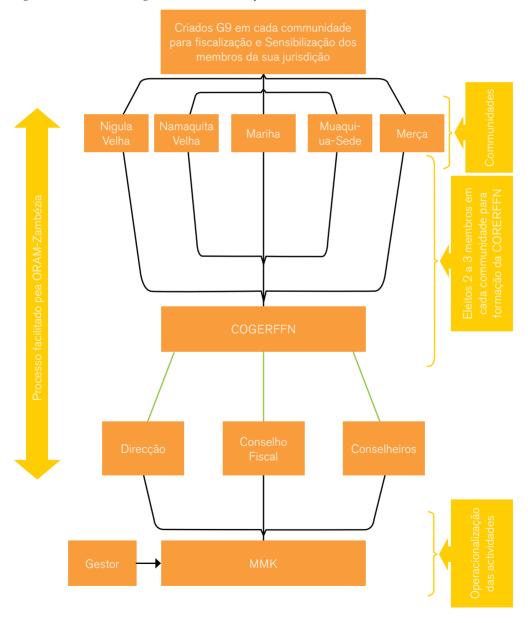
Business model to implement the Nipiode community forest concession

Land and forest rights are only one step towards operating a community concession. ORAM continued with the process of raising funds to buy sawing equipment and a minicarpentry to transform the wood into other products, particularly sawn wood. They also worked to help the community delimit sequential logging blocks, demonstrating good forest management practices, as part of preparing the management plan. Given the need to create a business management unit, ORAM also helped establish a local company called Madeira Maheco Kalnkna (MMK).

This company was constituted from elected members within COGERFFN, the chair of the committee also being chair of the company MMK. A management position was conceived within MMK. The idea was that a professional individual would be brought in, to support the management of the enterprise, oversee investments to support production, seek markets for company products, define diversification strategies in line with market trends

and contribute to the economic viability of the enterprise in order to produce profits. The institutional arrangement that was established included this manager, elected community representatives, private sector partners and ORAM (but not the state) – all based on trust, without any documents indicating the rights and responsibilities of each party. Figure 13 shows the institutional arrangement established for operating the forest enterprise – with the monitoring G9 groups linked to five communities, represented by COGERFFN (and three advisory groups) overseeing a commercial company with a hired manager.

Figure 13. Institutional arrangement of the community forest concession business MMK



Because of MMK's organisational fragility (especially in financial accounting), it was agreed that customers should make advance payment for any volumes of desired product, through a deposit in the company bank account. The deposit slip was then presented to the company for processing and delivery of the products. Withdrawals were made from the company's account according to the company's needs. This strategy allowed the company to have the liquidity to cover production expenses but to avoid the circulation of large amounts of cash within the company, in a context of weak financial oversight.

History of MMK business activity within the Nipiode community forest concession

The MMK company started operating in 2009, and all those involved began to work towards achieving the MMK objectives. The G9 in each of the communities intensified their surveillance, along with some members of COGERFFN, which in turn reduced the volume of illegal harvesting in the concession (although some partnerships between local leaders and illegal loggers continued). In 2011, COGERFFN decided to allocate part of the 20 per cent received from government to buy mobile phones to make communication more flexible. This investment improved G9 operations.

Under MMK's first management period (2009 to 2011), a support plan was designed, with ORAM providing a forestry engineer/manager to train the group in forest management and in the demarcation of cutting blocks. The ORAM-appointed staff member worked closely with MMK's president-elect, who was at the same time the chair of MMK's first COGERFFN. This arrangement marginalised some members.

As the company did not have any working capital, it was agreed to collect the raw material (logs) abandoned by illegal loggers. These raw materials produced the first tables, sales of which allowed expenses to be paid (fuel, workers' wages) and created a small amount of working capital. However, not all products made a profit - leading to the decision to sell logs, especially ironwood – which at the time was the most attractive species in terms of price and high demand in the market. This scheme created substantial working capital, but according to interviewees, much of the working capital was not put back into the business, and the company quickly reached a state of insolvency. This led to deep discontent, especially since large volumes of wood had been extracted from the community concession, with no return to the community. Consequently, the communities began to demand from MMK their share of profits and all the other social benefits promised to them, such as building bridges and supplying coffins. In 2011, MMK divided the funds that remained (Mt127,000) between the five communities, amounting to Mt25,400 each. Other social benefits were provided on a regular basis, such as the provision of wood for coffins. The atmosphere remained tense, culminating in new staff being elected to both COGERFFN and MMK. However, the lack of funds, accumulated debt and a lack of experience within the company worked against them. The

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same strategy used by the previous incumbents was adopted, selling timber to licensed operators. But the same situation was repeated: with funds allegedly not reaching the company account and private-sector buyers not always appearing to pay for the wood extracted.

MMK's situation then became even more precarious when it was fined by SPFFBZ after being caught sawing fresh wood during the closed season. The fine applied was Mt531,270.80 and resulted in COGERFFN's bank account being closed. The SPFFBZ fine demoralised the group, because there was no possibility of finding the money to pay it. MMK closed in 2013. Closing the doors of the company led to local frustrations, with work tools looted and infrastructure damaged beyond repair. Several years after this event, the infrastructure is degraded and beyond economic repair.

While former COGERFFN and MMK staff state that it was the lack of working capital that led to problems, the absence of a functional accounting system created room for diverting money that could have been invested in the company's economic growth. The lack of a business plan, economic feasibility studies of the venture and applied value chain research meant that managers did not have real control over what was going on. In addition, the sawmill operation costs were extremely high, since all the input acquisition and banking took place 100 kilometres (km) from the enterprise.

Several years later, the basic problem of combating illegal loggers that led to establishing the COGERFFN constitution continues unabated. While some community members still carry out surveillance and resource protection, some illegal loggers have links to local leadership and use firearms as a means of intimidation. So far there has been no move to support COGERFFN in rebuilding the business. Given this lack of hope, the community leaders are also ready to embrace a plantation establishment by Portucel to grow eucalyptus for later sale to its factory in a deforested strip within the concession.

6.4 Conclusions

Increasing scarcity of timber resources due to illegal logging drove the Nipiode communities to form their forest concession. However, setting up a committee and legalising a community initiative are not enough to make it succeed, even if people are motivated and committed to the cause. The legal framework makes it difficult for communities to manage concessions; simplified requirements are needed. It seems reasonable to consider the DUAT as the concession contract, mainly because the DUAT contains the land-use plan, which indicates the areas for forest exploitation. An inventory and management plan are still important to ensure that the volume of annual allowable timber harvesting and measures for forest management are stated. On the other hand, a requirement for wood processing seems excessive for poor rural communities, who could

easily sell direct to other processing facilities. Some factors affecting the performance of the Nipiode community forest concession are outlined below.

Institutional arrangements

The roles of the various partners in supporting community forest concessions need to be better defined. The government authorities need to integrate CBNRM into local development plans, provide technical support and monitor community-company partnerships. Local business management committees need to ensure better representativeness, gender equity, defined mandates, and rules for decision making, transparency and accountability to the community. Private-sector partnerships require better facilitation and education to ensure partnerships with local communities who have land-use rights. NGOs need to support value chain research, linkages with the market, training and information services, agreements and fair prices. Typically, organisations have areas of focus for their work and cannot be experts in all areas. For example, supporting the process of conceiving an idea through to managing a fully-fledged community initiative requires diverse areas of theoretical and practical knowledge, given its complexity (including biophysical and socioeconomic aspects). Although ORAM opted to hire some technicians in the forest area, its lack of in-depth business understanding may have limited its ability to monitor and redefine or adapt intervention strategies.

Partnerships

The first result that a community-based natural resource management initiative usually achieves is to organise communities around land-use rights, but business management capacity and financial resources for implementing new commercial ventures are often lacking at the community level. It is therefore important to establish partnerships. Matakala (2004) highlights some conditions for a successful partnership that include the need to develop communities' legal status; sign written agreements; promote institutional strengthening; allow sufficient time for partnerships to mature; encourage the participation of all partners in decision making; and develop an operating policy and a legal framework of work. These conditions aim to safeguard the vital interests of the community, since it is in a less privileged position than the partners. Communities can develop partnerships with the state, private sector, civil society organisations, or nongovernmental organisations. For the Nipiode community initiative, several aspects of partnership were not properly addressed. Although ORAM was considered the community's main partner, its work was more focused on formalising or legalising the initiative and finding solutions to make the initiative operational. There was no formal written agreement to guide their relationship or partnership, and the time ORAM allowed for follow-up and facilitation was not enough to empower the committee, to stimulate a sense of community ownership of the initiative, or to allow a consolidated vision for implementing the initiative, including a model of partnerships.

Community rights

Returning resources to communities is understood as a practical way of encouraging community involvement in their protection or conservation. Hardin's (1968) paper, *The Tragedy of the Commons*, predicted that individuals exploiting a common resource would inevitably fall into the trap of overexploitation and destruction. However, the possibility that users would find ways to organise themselves is not factored in. In Nipiode, the communities became aware of the exhaustion of forest resources that they depend on for their subsistence. This created the desire to find solutions to promote the sustainable use of resources – their interest in organising to regulate forest resource exploitation was closely linked to their strong dependence on those resources. With the Nipiode communities' rights returned, a context was created for attracting investments through partnership. However, due to other structural and organisational constraints on the committee, they lacked the strong, functional synergies that could have implemented the community project by capitalising on a sense of secure ownership.

Homogeneity of communities

In Mozambique, communities are defined as groupings of families and individuals, living in a territorial district (or smaller locality), which seek to safeguard common interests through the protection of housing areas, agricultural areas (whether cultivated or fallow), forests, sites of cultural interest, pastures, water sources, hunting and expansion areas (LFFB, Decree 12/2002). However, the 20,000ha scale of the Nipiode community forest concession exceeds one locality or district. The concession area comprises five communities, four of which are located in the district of Mocuba and one in the district of Mulevala. In Nipiode, the forest resource subject to collective management is not homogeneously distributed, opening up possible tensions between the different community groups (for example over revenue sharing). Although MMK's focus was on processing wood logs into boards and other products as a way of adding value to wood and thus reducing the need for tree cutting, the opportunity presented by the ironwood market at very attractive prices (three times more than the other species of the same class), caused the company to deviate from its objectives of sawing wood to the sale of logs. This challenged the collective management arrangements and financial accounting processes. The strategy of involving everyone in resource protection can work, especially if everyone is committed to the cause; however, attention should be paid not only to outsiders who may overexploit the resource, but also to members of the community and even the management committee.

Market access

MMK directed its attention to the production of wooden boards with little processing equipment. This was one possible option for wood processing, but it had many technical and financial limitations. Although an economic feasibility study of the timber production project was not carried out, a low supply of boards in the domestic market contributed to a high level of demand for this product (from traders selling to Maputo). However, being able to sell products easily is not enough in itself to generate profits. The offer price must include the entire cost structure involved in the production, with a profit margin, to increase the company's capital and allow possible reinvestments in various areas. MMK's production costs were extremely high, mainly because of the logistics – the sawmill was more than 100km from the company and dependent on third-party services (see below). The major constraints at community level in terms of the market were: 1) a lack of skills to analyse costs and benefits; 2) the cost of operations being high and not adjusted to the prices set; 3) a lack of initiative to diversify, for instance to include various niche consumer products; and 4) weak capitalisation of the management group's experience in increasing production efficiency.

Costs and benefits

Tangible benefits, such as wood for classroom furniture or infrastructure, are one of the greatest incentives for community participation in collective management initiatives. Although MMK was established as a company to produce lumber as a way of generating money, distributing tangible benefits to the communities continued to be a challenge. The prices for the sale of planks were low compared to the cost of producing them. MMK's cost structure was quite heavy, mainly because of the costly transport logistics of replenishing fuel stocks, oil and other maintenance products and parts. Customers should have deposited money for their chosen product into the MMK account prior to delivery. But the MMK account and nearest bank was in Mocuba, about 100km from the sawmill. This meant that withdrawing money to cover the account holders' expenses for travel, food and lodging, plus purchasing fuel and oil for the sawmill, was only possible in Mocuba. Seasonal disruption to transport between Mocuba and Nipiode also contributed to interrupting activities, thus reducing the machinery and operators' daily output. These costs were not included in calculating the price. Looking at this cost structure, the practical solution would have been for MMK to focus entirely on selling logs to other national enterprises involved in wood processing. But it took a whole year to reach this conclusion, and although it would have been possible to obtain a total of Mt127,000 in the second year of the business, this sum was not reinvested in the business due to pressure from the communities to distribute benefits. Additionally, the equal division of value between the five communities created tensions because some traditional leaders, such as Queen Marta of Namakita Velha, felt that the distribution criteria should take

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into account the areas of forest exploitation – some communities had more forest than others. Moreover, some community leaders invested their portion of the money in common goods, such as equipping classrooms, while in other communities it was used by leaders for personal purposes. The resulting discontent led to the group's common objective disintegrating into individualism, or the unregulated extraction of resources by communities to meet their own needs. This discontent has even caused community leaders to authorise illegal logging in the concession area for timber extraction. Some community members and the committee were involved in these schemes, dismantling the entire context created for the CBNRM through the initiative.

Conflict management

In initiatives that advocate collective action, it is essential to establish transparency as a key element and to have fair rewards for equivalent investment of time and resources. It is also essential to establish working rules, as well as clear sanctions in case of infractions. Applying sanctions must be exemplary, as agreed, and without any exception. In the Nipiode concession, the distribution of benefits was not equitable, nor commensurate with the effort that communities undertook in protecting the resource. The lack of an internal conflict management structure contributed to tensions between communities and the leadership.

Incentives

The process of designing the Nipiode initiative generated many expectations in terms of tangible benefits, and this motivated communities to support it. Three of the main incentives motivating community members' involvement were job creation; better living conditions by constructing health posts and furnishing schools; and the division of profits between the participating communities. Although the initiative was capable of generating this incentive package, a lack of organisational structure and capacity undermined their delivery. The other incentive that motivated community members was compensation to G9 monitoring teams of 50 per cent of any fines imposed, according to Article 112 of the Forest and Wildlife Regulation (RFFB). Decree 93/2005 also assures the return of 20 per cent of the value of licences paid by the operators to the communities where the operator has their forestry. These two forms of community rewards are additional forms of encouragement for communities to engage in forest protection. However, the government's failure to comply with these payments, particularly with regard to Article 112 of the RFFB, has demotivated the population.

Summary of factors leading to failure

Among several aspects discussed in this section, the factors contributing to the failure of the Nipiode community concession included:

- The NGO facilitator's follow-up or support period of the community being too short at three years, which did not allow time for the appropriation and consolidation of the initiative, or the adaptation or redefinition of more effective operational strategies based on the lessons learned.
- 2. The lack of government support or a robust institutional arrangement with clear definition of the roles of the various institutions. This contributed to the fact that the single facilitative organisation (ORAM) had to play a variety of roles, including those not within its domain. The organisation's technical knowledge limitations in some areas contributed to an inadequate transmission of knowledge.
- 3. An inadequate understanding of, or capacity to establish, a true CBNRM approach rather than a 'top-down' intervention approach.
- 4. An imbalance of power between the communities and the NGO facilitator, creating a context where communities had little capacity to negotiate or present their points of view, culminating in expectations that were misaligned with the project.
- 5. The absence of working capital (mainly in the early stages of the project) and high operating costs, coupled with a lack of robust partnerships, which contributed to the company adopting illegal strategies, such as selling log wood to licensed and unlicensed operators to alleviate insolvency problems.
- 6. The profusion of informal partnerships between community members and the private sector, without a clear and documented indication of how the partnership should function, including the responsibilities, rights and obligations of those involved.
- 7. The absence of an organised accounting structure for transparent and effective financial control, coupled with a lack of economic feasibility studies, business plans, investment and reinvestment plans.
- 8. The lack of clarity among the communities about the period of investment and the need to reinvest profits, generating an environment of mistrust between the management unit and the communities. This resulted in early sharing of profits without a plan to create working capital.
- Disputes over the mechanism for sharing benefits equally between communities, regardless of the availability of the resource and the need for collective management effort.
- 10. The displeasure of community leaders that the initiative did not consider any incentive for themselves.

11. The people's weak commitment to collective management of the resource, due to the government's failure to share revenues from apprehending illegal loggers or tax revenues from adjacent loggers.

Lessons for other community forest concessions

According to discussions with all the actors, several aspects could be done differently in the future – whether restructuring the Nipiode concession or developing a different model. First, any community forest business should be properly structured with posts and divisions for management, accounting, human resources, operations, and marketing and sales with persons competent to those tasks. Second, the board of the company should ideally include elected members from the communities involved in the DUAT pertaining to the concession – and ideally from a single community, and not several competing communities with different forest areas and commercial stocking levels. Third, start-up investments need to be calculated and secured -in the case of Nipiode this would include repaying debts owed to government and suppliers, renovating destroyed equipment and an adequate budget for cash flow. Fourth, there would need to be more stable and proactive support from partners, such as government and NGOs like ORAM, alongside more clearly negotiated contracts with private-sector buyers. Fifth, proper zoning and block planning of timber extraction would be a must, as would be the development of a properly costed business plan, underpinned by market analysis of different production options. Sixth, legislative reform should enable a special regime for community forest business, which removes bureaucratic obstacles and unrealistic expectations of communities' ability to run advanced processing facilities.

Final considerations

Community-managed concessions seem a very attractive CBNRM model, which could generate income for poor rural communities while improving supervision and forest law enforcement. But as noted above, it is fundamental that Mozambique's legal framework on forests and wildlife is adjusted so that special consideration is given to community concessions, which need to be implemented in a different way from conventional industrial concessions. Active involvement by communities in CBNRM initiatives is critical, but it is not sufficient for the successful implementation of the approach without considerably greater attention being given to organisational structures and benefit sharing.

Despite the failure of Nipiode, the underlying profitability of sustainable log extraction (but not timber processing) is still solid. If communities are to have a greater involvement within the timber trade – and the impact of Chinese demand for timber to therefore have a more positive economic impact for those communities – changes are required that go beyond over-subsidised pilots within poorly designed policy frameworks, towards legislative reform and investment in communities as key actors in the timber market.

Improving evidence, capacity, policy and practice in China-Mozambique forest issues

7.1 Using better evidence and developing capacity

2013

The year before the China-Africa Forest Governance project began, in 2013, the Chinese government invited the Mozambican government and civil society partners to take part in the **1st international learning event of the China-Africa Forest Governance Platform**, held in Beijing on 5–6 March 2013. Discussions at that event focused on how to bring about more concerted efforts to generate evidence of China-Mozambique interactions, develop capacities to improve those interactions and implement changes in policy and practice. It was this set of discussions that ultimately confirmed Mozambique's place within the project. And at that time, there were perceived gaps in evidence of

the scale of Chinese investment and trade in Mozambique, the impacts of government measures to regulate it, and the options to improve practice.

2014

When the project started in 2014, the International Institute for Environment and Development (IIED) had already been working with the government of Mozambique, NGO and private-sector actors. This included work to improve forest governance, such as 10 years of interaction through the Forest Governance Learning Group (Salomão et al., 2014); to install inclusive REDD+ implementation mechanisms, such as five years of work on South-South REDD and then Testing REDD+ (Nhantumbo and Maússe, 2015); and to improve opportunities for locally controlled forest enterprises, such as three years of including Mozambique in the Forest Connect alliance (Nhancale et al., 2009). The World Wide Fund for Nature (WWF) had also been working to try and improve practices by Chinese and Mozambican timber companies and had established groups of Chinese timber operators in both Sofala and Cabo Delgado Provinces. Eduardo Mondlane University had been working with CIFOR to study Chinese timber operators in Cabo Delgado (Ekman et al., 2013).

Notwithstanding these substantial past bodies of research and action, in 2014 Mozambique's National Directorate of Land and Forests (DNTF) were particularly sensitive to working with NGO groups, owing to the recent series of reports by the Environmental Investigation Agency (EIA 2012; 2013; 2014) accusing the government and private sector of widespread corruption and illegality. In 2014, the government response to those accusations was already underway (see Section 3.2).

In mid-2014, a first step was taken to form and develop terms of reference for a **coordination group for the project within the country**. Terms of reference were prepared and agreed between IIED, WWF, Terra Firma and Associação Ambiente, Conservação e Educação Moçambique. Meetings took place during visits by international teams (IIED, WWF-China, WWF Eastern and Southern Africa Programme Office) to ensure coordination between various activities. The coordination group drew up an initial work plan, which they discussed with DNTF, focusing on the threefold elements of improving evidence, improving capacity and making changes to institutional policies and practices. DNTF complained at that time about the extent to which independent projects were not channelling money directly to the government to tackle the issues outlined by the EIA.

In terms of evidence, two initial priorities were agreed. The first of these was agreed to be a diagnostic or scoping study on the extent of resource use and the **scale of Chinese investment within Mozambique.** A draft report was prepared by Terra Firma in 2014, expanded and reviewed in 2015 and eventually made available to the public (see Muianga, 2016). A second priority was to conduct a review of the **impact of**

recent legislative changes aimed at resolving the problem, and the changes' practical implementation (or lack of) in the field, with an interrogation of the underlying causes. This review was initiated in early 2015 but then stalled for two years because, following the elections, one of the lead authors was drawn into the new Ministry (MITADER) to oversee the drafting of the new forest law.

In terms of capacity development, the project held a workshop on 26-27 June 2014 in Beira (Sofala Province) involving 15 Chinese companies, the Director of DNTF, the Sofala Province Director, several Mozambican provincial DNTF personnel and a Chinese delegation involving personnel from the Chinese State Forest Authority (SFA), the Chinese Academy of Forestry (CAF) and the China Green Carbon Fund. The aim was to explore initial ideas on how to improve the sustainability and legality of forest use. An important part of this process was training to clarify Mozambican law for Chinese operators, the original nature of the forest law and regulations, and recent changes to the legislation. DNTF provincial personnel reported on the scale and nature of Chinese involvement in the timber trade in Zambezia, Nampula and Sofala (estimated then at 120 Chinese companies of which 33 were concessionaires). Chinese operators explained the lack of legal clarity, the multiple demands for fine payments at multiple checkpoints, and the culture of 'paying oneself out of' difficult encounters with officials. With existing Chinese State Forest Authority guidelines for Chinese timber operators overseas, it was agreed that an immediate priority would be to develop a Mozambique-specific version of those guidelines (see Yong et al., 2016).

During those early interactions in 2014, it was felt by WWF that the interest from some Chinese companies in establishing processing capacity was not matched by their understanding of the legal incentives to support such investment (which already existed). It was agreed that **further assessments of Chinese companies** seeking to make such investments into value-added processing were needed, as they would have a strong incentive to secure a sustainable supply of raw materials (compared with the Chinese timber trader model, which pre-finances timber extraction through simple licences with a short-term operating mentality). This question was also raised by operators: "What incentives could the Mozambican government provide for those companies that operate legally and are interested in secondary processing?" WWF also began to engage with three companies who signed up for future capacity-building work (see Section 7.2).

This private sector questioning over possible incentives led to a research study by IIED and UEM to explore **options for incentives to improve the practice of Chinese timber operators and their Mozambican partners**. Starting in 2014, the project team at IIED researched a complete spectrum of possible incentive measures, including an analysis of 18 types of incentive for improving Chinese forest and timber operations (see Section 4). UEM then assembled information on historical attempts to develop those 18 different types of incentive in Mozambique. A questionnaire survey of Mozambican

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forest experts from government, civil society, academia and the private sector in 2015 then led to a prioritisation of the incentives. The process was recorded and published in a book (see Macqueen and Falcão, 2017) and formed the basis of subsequent discussions with government.

Also in 2014, WWF continued to facilitate interactions between the government of Mozambique (DNTF) and the government of China (SFA) on the **development of a China-Mozambique forestry memorandum of understanding** (MoU) that has now been signed (in June 2018) and should frame future collaborations in the forest sector. This involved both discussion between the parties during meetings around the Forum on China-Africa Cooperation (FOCAC), and at that time, exploring a civil society organisation alliance and piloting a Chinese Timber Legality Verification scheme with CAF.

Meetings with DFID-Mozambique and the European Union in 2014 covered the prior attempts to engage DNTF on the European Forest Law Enforcement, Governance and Trade (FLEGT) action plan – which had been rejected by the Mozambican government. In relation to support from the UK Department for International Development to economic development in the Beira Corridor, it was suggested that a closer look was needed at timber flows in the ports.

2015

During 2015, the Global Environmental Institute (GEI) conducted a study with Mozambican colleagues to provide an in-depth analysis of the most recent data for the trade between China and four African countries, including Mozambique. The study was in two parts. The first part analysed Chinese customs data and Chinese data on UN Comtrade, to understand the basic China-Africa timber trade situation, its product composition and developing trends. The second part explored the extent of the **China-Mozambique timber export-import trade data discrepancy**.

Following the earlier scoping/diagnostic report, Terra Firma started to develop a database of timber operators in Mozambique to improve understanding of the Chinese operator make-up in concessions and simple licences. By early 2015, Terra Firma had developed a relational database that triangulates and consolidates different data sets on concession and simple licence registrations, authorised annual felling volumes and timber transport (see Section 2). The China-linked component of these registrations and timber flows was to become the focus of fieldwork in five provinces (Nampula, Cabo Delgado, Sofala, Zambezia and Niassa). The database idea had been presented to DNTF in early project meetings in an attempt to interest them in its development (to help regularise the chaotic nature of the forest sector).

The DNTF director and staff rejected the notion of developing the database and denied Terra Firma's request for access to SPFFB records in the provinces, despite the

government of Mozambique having signed a Freedom of Information Act. Nevertheless, work on the database from publicly available information continued and the now populated database was presented to the newly constituted National Directorate of Agriculture and Forests (DINAF) in May 2015. The idea was that the database could easily be adapted to both track the spatial extent of forest concession and the timber flows from harvest site to port. The project team had transferred the database onto an open-source platform to improve ease of use and development.

Progress in 2015 was slowed by the election cycle, in which recent critical international reports over corruption in the Mozambican timber sector had made this a politically sensitive topic. However, Mozambican delegates did participate in the 2nd international learning event of the China-Africa Forest Governance Platform. Held in Yaoundé, Cameroon on 22-25 June 2015, this was a multi-stakeholder event discussing Chinese trade and investment impacting Africa's forests. This four-day dialogue meeting was one of the first multi-stakeholder dialogues in Africa to bring together Chinese, African and international stakeholders on these issues. From the Mozambique side, discussions focused on how to better integrate the Mozambican government in leading a national process of dialogue, supporting the development of a timber operator database, and assessing with customs how to reconcile trade data between China and Mozambique. A commitment was made to have a national process of dialogue between government, civil society and the private sector to update people on new evidence of timber flows, the impacts of recent legislative changes, the practices and value chains of current concessionaires, and the options for incentives to improve practices. There was also a strong commitment to conclude the memorandum of understanding between China and Mozambique, with a focus on: reconciling trade data; improving added-value processing within Mozambique; strengthening law enforcement; and capacity building and training. A field visit was organised to forest areas and to Kribi, Cameroon's new deep-sea port and surrounding infrastructure, which was built with Chinese investment.

2016

In early 2016, findings of early research in Mozambique on plantation investments, were shared at meetings with the World Bank, and research on law enforcement and support to the private sector with the Forest Investment Programme. There was felt to be considerable scope to build on the forest database being developed by Terra Firma, and to develop a new overarching **vision for the forest sector** that built on early diagnostic work as the Forest Investment Programme got underway.

In order to improve Chinese operator understanding of Mozambique legislation, Terra Firma worked with CAF to document Mozambican forest, investment and labour law. Summaries of these laws were translated into Chinese within the new **Mozambique**-

specific Guidelines for Sustainable Trade and Investment for Forest Products for Chinese Overseas Enterprises and were distributed to Chinese operators.

In an attempt to engage the leadership of DINAF in a serious discussion on the database of timber operators (and its potential for improving law enforcement), as well as on broader options for incentives to improve practice, the project offered to support a national forest forum meeting in Quelimane on 20–22 September 2016. At the forum, the diagnostic and database on timber concessions and timber flows were disseminated to key stakeholders – leading to discussions with the new law enforcement agency AQUA, who agreed to explore the use of the timber concession and timber flow database. Sadly, this initial promise later fell through.

The forum did succeed in engaging key government actors; the private sector, including Chinese companies; and civil society organisations. The forum disseminated verified key findings from the project and identified key potential partnerships, including building a partnership between a Chinese pilot company and a local timber association to collaborate towards a sustainable timber processing centre; and initiated a conversation with the World Bank on the possibility of supporting a sustainable timber processing centre in Mozambique. There were also discussions of group business formation (for simple licence operators grouping to form larger concessions). The options for incentives to improve practice were publicly endorsed by Mozambican timber operators – including the priorities highlighted in Section 4. WWF had prepared and presented a gripping portrayal of the changing Chinese timber market, with specific insights on options for value-added processing within Mozambique.

While the ongoing process of revision of the forest law was not presented in Quelimane, Mozambique team members continued to be active in submitting inputs, drafting text and commenting on the forest law reform processes. This included WWF inputs into a review of timber operator practices, with a report out by the end of 2016. The original project ambition to look at the impact of legislative changes in 2011–12 became a much more active process of helping to enact new legislation and action to gather feedback on this (see Menezes and Serra, 2017). But there was also a need to add in new analysis, not only on the 2011–12 reforms but also the ongoing adjustments following the new government in 2015 – which reshaped the main institutions responsible for forestry (see Section 4). The effects on forestry operations of all these changes were analysed by Menezes, Espada and Serra, a firm of lawyers.

Also in late 2016, Mozambican participants took part in the **3rd international learning event of the China-Africa Forest Governance Platform**, on 24–25 October 2016 in Beijing, China. Mozambique delegates presented on the current engagement in policy reform. There was felt to be great potential for them to contribute to phasing out the currently unsustainable simple licence regime, potentially introduce a new concession

format for communities, and develop a new national fund that receives forest revenues and reinvests them in line with sustainable forestry. It was also at this event that initial thoughts began to take shape about creating some form of forest product park in Mozambique; perhaps building on the ideas of 'sustainable forest product development parks' in Ghana, Gabon and China (Tran-Thanh et al., 2017).

2017

Having screened various Chinese operator options with whom to work more closely, WWF in Mozambique began a more in-depth association with a Chinese company (Mr Forest Ltd) establishing an industrial park in the north of Querimbas – which was making a substantial investment in processing and is striving for lower cutting volumes. Discussions with the team identified this initiative as particularly pertinent for Mozambique. By supporting companies investing in value-added processing, the motivation to maintain sustainable timber supply would be incentivised.

The data on the trade data discrepancies between Mozambique's declared exports and China's declared imports had been of some concern to multiple stakeholders in the preceding year. So in 2017, the China-Africa Forest Governance project commissioned the Eduardo Mondlane University to conduct a **Mozambique trade data analysis** (Egas et al. 2017 – see Section 5). This research on the trade value chain and customs data collection was designed to support action to eliminate trade data discrepancies. This research was cleared and approved by the forest agency DINAF in Mozambique – and focused on possible sources of errors in the way timber volume and weight data were collected and recorded along the value chains. The resultant report, which was published and presented at the Pemba event, described below, led the Mozambican government to realise the need to revise the timber volume equations for container loading, and to develop customs staff's capacity to enter Comtrade data.

Mozambique has not developed strong rural community involvement in sustainable forest management – requiring them to abide by the same onerous conditions as industrial companies in taking out concessions. Because of this, many communities collaborate with illegal logging crews, to earn at least some money from the rapidly diminishing forests. In a couple of cases, community concessions had been applied for and granted with the help of NGOs such as ORAM, but have failed to develop a robust business structure and subsequently failed. The project was interested to understand both the reasons for past failures and to learn how communities might better be included in the timber value chain in the future. ORAM were therefore contracted to research the **reasons for failure of community forest concessions** at Nipiode (see Maússe, 2017, and Section 6). The outcome of this work was to feed directly into the new Forest Investment Programme plans to revitalise community forest concessions.

With so much useful evidence and governance change in Mozambique, the project team proposed that the **4**th **international learning event of the China-Africa Forest Governance Platform** should take place in Mozambique. The government of Mozambique and Governor of Cabo Delgado kindly agreed to host the event and in October 2017, more than 90 Chinese and African stakeholders met in Pemba,

Mozambique. The event, facilitated by IIED and Terra Firma, focused on ways to develop innovative pro-forest and pro-poor business initiatives in the context of Chinese investment in African natural resources.

WWF's work with Mr Forest Ltd was highlighted at that platform event – and the intention had been that a field visit would take participants to see Mr Forest Ltd's inward investment in value-added processing. Unfortunately, a security situation prevented that visit, but instead the project later funded a set of media stories and **a film to showcase the beneficial impacts of Chinese value-added investment in Mozambique**, particularly for a Chinese audience. This film complemented several previous exchanges in which the project funded at least four Chinese journalists to investigate Chinese company impacts on the forests of Mozambique.

2018

Building on the new evidence on timber trade data discrepancies, the project team organised a **China-Mozambique Custom Exchange Event** which took place in Mozambique on 26–27 February 2018, facilitated by WWF-Mozambique and GEI (see Section 5.7). The main objectives of the event were to convene a custom exchange for relevant stakeholders from China and Mozambique, to compare Chinese and Mozambican customs procedures for import and export, including declaration forms and lists of required documents; and to identify potential differences and gaps that may lead to risks of undocumented transaction data as well as illegal timber trade. The exchange event also drew on Egas et al. (2017) to discuss the opportunity to build an electronic customs data system in Mozambique, streamlining and synchronising data records from provincial level to the national level. This led to discussions about the statistical methods at the national level and how Mozambican data was uploaded to international databases, such as UN Comtrade. Five participants came from China and nine from Mozambique.

At the 4th international learning event of the CAFGP, the Chinese delegation had given presentations on how major timber processing parks had been established to enhance the competitive advantage of the Chinese wood products industry. The China-Africa Forest Governance project had been exploring with government and private-sector partners the possibility of developing a similar industrial park concept to attract Chinese investment into value-added processing within Mozambique. In order to explore these issues further, a 'forest-wise' Park exchange event between Mozambique and Chinese key stakeholders was organised. The project came to define 'forest

wise' parks as industrial timber processing areas that are well-regulated and managed, emphasising local value-added processing and ensuring legality and sustainability of all timber or other forest products utilised. The visit took place on 3–11 March 2018 and was facilitated by the Chinese Academy of Forestry and IIED, with 7 participants from China and 11 from Mozambique. The main objectives of the event were to: 1) identify the key requirements to develop one or more forest-wise parks in Mozambique under current socioeconomic and political conditions; 2) identify the potential opportunities and barriers in initiating and implementing forest-wise parks in Mozambique; 3) discuss the key lessons for Mozambique to ensure social and environmental benefits from forest-wise parks; and 4) identify the essential steps to take to make forest-wise parks a reality in Mozambique.

A background research paper looked in detail at the context and options for such a park in Mozambique (Falcão, 2018). It proposed **next steps for realising a forest-wise park**:

- 1. Sign a memorandum of agreement between Mozambican and Chinese governments on cooperation on industrial forestry parks to facilitate more Chinese investment (now signed in June 2018).
- Conduct field research and stakeholder consultation to identify where to establish
 the park, taking into consideration the proximity to raw materials and availability of
 necessary infrastructure, conduct a profitability study and undertake a social and
 economic environmental study.
- 3. Identify a finance mechanism from within the China-Mozambique spectrum of options.
- 4. In consultation with relevant government agencies, develop the park's land-use planning, to clarifying construction and operation responsibilities of the park as well as the leading companies.
- 5. Construct the park's infrastructure and supplementary facilities, including logistics, finance and business services.
- 6. Promote investment into the park through preferential policies to attract high-quality enterprises.
- 7. Manage the park and provide related services.

7.2 Influencing policy and practice

2014

In the first year of the China-Africa Forest Governance project, one of the key team members, who had been engaged to assess the impacts of recent legislative changes on Chinese operators, was instead invited by the new government into the new ministry, MITADER, to help with a **forest law reform process.** As part of that process there were several invitations to comment on proposed new legislative ideas. This opened up an immediate formal channel through which project partners could comment on the proposed drafting of new legislation.

Further comments and advisory notes were submitted with the aim of strengthening some of the new provisions for law enforcement (drawing on Macqueen and Falcão, 2017). The very early drafting of the new forest law and the corresponding national forest development programme, Floresta em Pé, have inputs that draw on research findings presented above.

2015

Training Chinese operators in Mozambican legislation formed a central part of WWF work in Mozambique, and they supported the development of Mozambique-specific guidelines for Chinese forestry operations. Detailed summaries of the legislation relevant to Chinese operators were prepared, from start-up to export, to assist with the development of a Mozambique-specific version of the *Guidelines on Sustainable Overseas Forest Management and Utilisation by Chinese Enterprises*, drafted by project partner CAF. The guidelines were formally published by the Chinese State Forest Administration. This was the first time a bilaterally specific set of guidelines has been produced, and with project funding, CAF undertook a mission to consult government and civil society on the content of these revised guidelines and on plans for CAF to contribute to the training needs of Chinese operators in Mozambique.

With those guidelines in view, WWF organised Chinese company assessments and training on sustainable forest management in Mozambique. **Three Chinese companies** (Sawerscap, Xin Jian, MOFID) agreed to pilot sustainable forest management initiatives and took part in a training and planning event with a Chinese forestry delegation hosted by WWF in January 2015. Sawerscap started a due diligence process with WWF support and an initial feasibility study for carbon management – the first Chinese company in Mozambique to show such commitment. Additional companies have since expressed strong interest, such as Madeiras Alman. Further engagement and practical training was undertaken in May 2015.

As part of a general attempt to respond to international criticism, in 2015 MITADER conducted an evaluation exercise of timber operators throughout the country with financial support from partner WWF and the World Bank. The Faculty of Agronomy and Forestry Engineering of Eduardo Mondlane University developed the evaluation criteria. In the assessment, 1,081 logging forestry operators were identified, of which 881 were surveyed, or 81 per cent of the total number of operators in the country; of these, 727 operators (82.5 per cent) had simple licences, while 154 operators operated under a forest concession regime (17.5 per cent). The level of compliance with forest law and regulations was found to be 45 per cent for single licence and 57 per cent for forest concessions. Some **321 timber operators were suspended** over failure to comply with the law (see Section 3.2).

By late 2015, staff linked to the China-Africa Forest Governance project had helped draft new **legislation separating out law enforcement from the new forest authority DINAF and putting it into the independent hands of the agency AQUA**. The intention was to reduce the possibility of conflicts of interests between staff of DINAF who were both responsible for law enforcement and had commercial ties to certain logging concessions. The decree finalising this change was passed in early 2016.

2016

Alongside training in sustainable forest management (which had some uptake as described above) a **wildlife protection training** was organised for Chinese timber companies in April 2016. This was recognised as vital, given the scale of illegal wildlife trade and its forest links. The training was well received by the companies despite the sensitivity of the issues, and several reported new scrutiny and practices as a result. It was jointly hosted by TRAFFIC and WWF in collaboration with the Chinese government, and included the CITES office, SFA, China Customs, the National Forestry Police, the Chinese embassy in Mozambique and the China International Contractors Association, and was supported by the Mozambican government. The training was attended by 70 representatives of state-owned enterprises, private businesses, timber companies and local residents in Mozambique.

In addition to this work with Chinese timber operators, significant progress was made in the capacity of China-Africa engagements in Mozambique. For example, six key forestry-related civil society organisations developed strategies and **messaging for FOCAC** on Chinese investments in land use. The project provided support for **establishing the secretariat for a civil society alliance platform** on forestry's integration in land use in Mozambique.

2017

Better practice for timber operators in the country was encouraged by peer-to-peer exchange visits between Mozambican operators and Chinese timber buyers and processors in China. The aim was to improve the knowledge of Mozambican operators on processing importing firms' specifications. The first exchange took place from 25 June to 1 July 2017 and was facilitated by WWF, with all 11 participants from Mozambique. The main theme of the study tour was Chinese timber processing technology and processing centres, together with the local policy frameworks that have supported their development. The Mozambican delegation met with SFA in Beijing, and later visited forest farms in Linvi (Shandong province), Taicang port (Jiangsu province), and a timber production mill in Nanxun (Zhejiang province). The trip enabled the delegation to achieve significant learning about secondary processing technology and policy incentives in China, as well as to better understand timber supply chains for Mozambican timber in China, including the status of due diligence in these supply chains and particularly their social and environmental aspects. The intention was to increase Mozambican officials' awareness and ultimately to strengthen Mozambican law enforcement through sharing Chinese experience.

Although not supported by the China-Africa Forest Governance project, MITADER's decision to launch an illegal timber apprehension operation on 9 March 2017 in the provinces of Cabo Delgado, Nampula, Zambézia, Tete, Manica and Sofala did reflect the new mandate of **AQUA** as the forest law enforcement agency. Among the main infringements detected in the scope of this operation were the logging of trees below the minimum diameters, which are usually 30 to 40 centimetres depending on species, logging more timber than is permitted by the licence, and storage, transport and marketing of forest resources without authorisation. In the province of Cabo Delgado alone, Operation Tronco seized 59,045 cubic meters of wood, and fines were issued for above US\$1.4 million.

Throughout the project, partners, especially WWF, worked closely with Mozambican and Chinese governments to develop the **China-Mozambique memorandum of understanding on forestry**. By 2017 a final draft had been prepared. WWF facilitated further discussions about when the MoU might be signed through a China-Mozambique delegation visit to China in 2017. The advanced draft includes commitments on knowledge sharing, technical exchanges, developing Mozambique capacity for timber processing, changes in the investment environment to encourage investment in line with these commitments, measures to incentivise sustainability, and fighting illegal trade. The MoU was finally signed in June 2018.

The project team also worked closely with the WWF to link in discussions on improving legality in project countries within the Zanzibar Declaration.⁴ Representatives who had made commitments on improved coordination to reduce illegal logging within the Zanzibar Declaration were invited to the 4th international learning event of the CAFGP at Pemba in Mozambique. During animated discussions at that event, representatives from different countries made **commitments to expanding Zanzibar Declaration countries and to addressing cross-border trade issues**.

2018

The China-Mozambique customs exchange visit helped both Chinese and Mozambican participants to come away with a clearer understanding about the differences in the customs clearance procedures between China and Mozambique, especially the different measurement and data recording styles, which can cause difficulty for comparison and potential discrepancies. The Chinese customs IT experts have proposed that the solution needs to be tailored to Mozambican needs, rather than directly copying Chinese systems, due to the different development stages of both countries. The **Chinese delegation also introduced a customs capacity-building programme** that China has been facilitating for African nations, and proposed that the Mozambican customs officials could take the opportunity to learn from China's customs development and find the best solution for Mozambique.

Following the forest-wise park exchange event between Mozambique and Chinese key stakeholders on 3–11 March 2018, a **forest-wise park collaboration agreement** was drafted and signed by the Ghanzhou Feishang Supply Chain Management Company Limited, the Shunjinyuan Africa Investment Company Limited, and FUNDINVEST SA. The agreement is mainly to form a long-term strategic collaboration in the forest sector in Ganzhou City Nankang district and Mozambique. The strategic comprehensive collaboration will mainly include training Mozambique technicians in the furniture supply chain, and establishing a timber supply chain platform, forest industry park and furniture industrial system.

⁴The Zanzibar Declaration on Illegal Trade in Timber and other Forest Products is a regional agreement signed in 2015 between the national forest agencies of Kenya, Madagascar, Mozambique, Tanzania and Uganda.

7.3 Conclusions: what has worked well, not worked well – and challenges

What has worked well

Set against a backdrop of widespread illegal logging in Mozambique and a change of government within the project period, the China-Africa Forest Governance project partnership made some steady progress in ensuring greater engagement between Chinese authorities and private-sector operators and their Mozambican counterparts. The use of bilingual Chinese/English and Portuguese/English staff by both IIED and WWF helped to create better communication, and a gradual development of trust between the two parties (for example, towards signing in June 2018 of the memorandum of understanding on forestry between the two countries).

Long histories of work in both China and Mozambique by international partners, such as IIED and WWF, enabled key contacts in both countries to be engaged during the project period. Indeed, some of the in-country partners were drawn into more elevated positions during the change in Mozambican government that occurred early in the project cycle. This opened up direct channels for inputs into the legislative reform process surrounding the new forest law and development programme Floresta em Pé.

The regular events of the China-Africa Forest Governance Platform in both China and African contexts, with field visits, helped to improve the mutual understanding on the issues at each stage of the value chain – from timber harvesting and preliminary processing in Mozambique, through customs and shipping, to import and further processing in China. Backed by a series of high-quality reports, spatial databases and participatory surveys, evidence was improved about what was happening at each of these stages. It was possible to more from generic considerations to specific attempts to solve problems (such as the effort to improve Mozambique timber export data collection and upload it to UN Comtrade). The increasing level of open and frank discussions was a testimony to the utility of these platforms.

Moving from generic to specific issues helped to give the process momentum and motivate continuing engagement. For example, the generic guidelines for Chinese companies operating overseas were improved by the translation of the Mozambican legislation into Chinese in a new Mozambique-specific *Guidelines for Sustainable Trade and Investment for Forest Products for Chinese Overseas Enterprises*. This helped to involve and engage Chinese operators in training run by WWF.

It became clear during the project period that progressive reforms within Mozambique towards better law enforcement were unlikely (for example, through a timber-tracking system – despite project partner Terra Firma creating a timber operator database which could have served that function). It also became clear that China was not ready to roll out

a legality assurance scheme. So the project shifted focus toward Chinese operators who were keen to invest in value-added processing within Mozambique. Such investments strengthen operator concern for a sustainable supply of raw material. This flexibility maintained interest in the process by key decision makers in both countries (ultimately leading to an agreement between Chinese and Mozambican operators to develop plans for a forest-wise park in Mozambique for value-added processing).

Peer-to-peer knowledge exchanges – both between government and private-sector actors from Mozambique and their Chinese counterparts, and between media officers from both countries – proved instrumental in building personal relationships and understanding that provide the foundation for joint action.

What has not worked well

Despite high levels of interest and engagement by the Mozambican government at the first event of the China-Africa Forest Governance Platform in Beijing in 2013, it proved very difficult subsequently to get any meaningful engagement from the Mozambican government, especially during the period immediately prior to and following the 2015 elections. In part this was because the government was recovering from some relatively high-profile allegations of widespread timber-related corruption from the Environmental Investigation Agency. But it was also simply the fact that the government authorities carried out major internal restructuring processes within the main forest agency (from MINAG to MITADER and from DNTF to DINAF).

The deteriorating market situation for Mozambican timber exported to China had a major influence on the availability and interest of in-country Chinese operators. The Chinese economic slowdown greatly reduced demand for timber. At the same time, the moratorium on log exports that was put in place during the post-election period further curtailed the timber trade. Many of the companies that had been operating in Mozambique left, including several that had had very positive plans for investment in value-added processing linked to piloting sustainable forest management. This reduced the intended project impacts.

Some constructive interaction took place between IIED's project and the World Bank Forest Investment Programme (FIP) team (a very well-resourced programme within the Mozambique forest sector that was just beginning as the project became established). But early opportunities failed, which initially had seemed interesting, such as joint work towards government installation and use of the timber operator database to provide accurate data on timber flows within Mozambique. They were initially rejected by the government as unnecessary on the grounds that "a government database already exists" and then later replaced by a completely new and parallel FIP-funded attempt to create such a database with another lead agency. It is unclear how those two government positions could be reconciled.

The timber trade data discrepancies between Mozambique and China were assessed in some depth. Unfortunately, the findings came quite late in the project cycle, and one of the key recommendations was to urgently revisit the volume/weight equations used to calculate how much timber was inside export containers. The sharp cut-off deadline for the end of the project forced the abandonment of plans to recalculate those equations.

Finally, following the forest-wise park exchange event between Mozambique and Chinese key stakeholders on 3–11 March 2018, a forest-wise park collaboration agreement was drafted and signed by three companies. Unfortunately, this did not include signing by any representative of the Mozambican Association of Timber Operators (AMOMA) because, despite their participation in the exchange, the AMOMA members sought to pursue individual business deals and the chair was unable to attend. Hopefully this can be remedied in the future.

7.4 Next steps: opportunities to make further improvements

There are a number of immediate next steps that will help to consolidate the impacts of the China-Africa Forest Governance project. The ongoing work and office presence of WWF in Mozambique offers hope that at least some of these will be achieved.

First, it will be to everyone's advantage that Mozambique and China have finally signed the memorandum of understanding that has been prepared in draft during this project period. This will pave the way towards knowledge sharing, technical exchanges, developing Mozambique capacity for timber processing, changes in the investment environment to encourage investment in line with that, measures to incentivise sustainability, and fighting illegal trade.

Second, it will prove fruitful to build on the forest-wise park exchange event between Mozambique and Chinese key stakeholders on 3–11 March 2018 – and the resultant forest-wise park collaboration agreement. This could pave the way to significant inward investment for value-added timber processing in Mozambique (see Falcão, 2018). The result could well be a renewed interest in sustainable timber supply – which might have the effect of improving operator practice across the country.

Third, the process of forest law reform needs to be taken to wide consultation and review (see Menezes and Serra, 2017). It will be especially important to update incentives for investment in value-added processes, and sustainable forest management within that law reform, and to ensure that new simpler provisions exist for community forest concessions linked to DUAT that allow simple management planning and sale of logs to third parties with processing capacity. In this way the benefits of the Mozambique-China timber trade

will be distributed to the benefit of Mozambique's rural people who uniquely have the agency to actually control what is harvested and where.

Fourth, as recommended and agreed by forest experts in Mozambique, DINAF and AQUA need to agree to, establish and use a modern internet-based, electronic timber-tracking system that includes a timber operator database (see Muianga and Norfolk, 2017). This reduces the possibility of circumventing the law and reduces work in the currently chaotic collection of data on timber licences, harvesting, transport, container loading and export. The system could be developed with support from China to minimise any discrepancies between the two countries in the reporting on timber trade.

Fifth, as recommend by the Egas et al. (2018) report on timber trade discrepancies, new volume/weight equations to estimate the timber volumes and weights within loaded export containers urgently need to be recalculated. Vast quantities of timber are currently leaving the country under-reported because of these faulty quantification processes.

Sixth, the government agency DINAF needs to develop a major programme of incentives to improve the practice of timber operators – to try to agree and develop at least a few of the 24 possible incentive types outlined in Macqueen and Falcão (2017). Many of these incentive types can be framed through the forest law reform process.

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After decades of growth in China-Mozambique economic relations China is now the destination for approximately 93 per cent of all Mozambique's timber exports. Meanwhile, an alarming loss of forest cover has raised concerns over the impact of this trade on Mozambique's forest and rural development. How can the China-Mozambique timber trade foster better stewardship of forest resources in Mozambique and benefit poor men and women? This report compiles three years of work of the China-Africa Forest Governance project to develop evidence on constraints and opportunities for forest resources in productive and resilient land use and trade, to develop capacity and dialogue among relevant stakeholders in China and Mozambique, and to deliver policy and practice improvement opportunities.

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