



# Chinese trade and investment and its impacts on forests

A scoping study in the miombo woodlands

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Working Paper 84

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Laura A. German, L.A., Schoneveld, G.C., Wertz-Kanounnikoff, S. and Gumbo, D. 2011 Chinese trade and investment and its impacts on forests: A scoping study in the miombo woodlands. Working Paper 84. CIFOR, Bogor, Indonesia.

Cover photo by George C. Schoneveld. Billboard at the Sino-Hydro construction site, Kariba, Zambia

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# Abbreviations

AAC	Annual allowable cut
CATIC	China National Aero-Technology Import and Export Corporation
CCS	Chambishi Copper Smelter
CEPAGRI	Center for Agricultural Promotion (Mozambique)
CGA	Cotton Ginners' Association (Zimbabwe)
CJIC	China Jiangxi International Corporation
CMAC	China National Construction and Agricultural Machinery Import and Export Corporation
CNMC	China Nonferrous Metal Mining Company
CNTC	China National Tobacco Corporation
CPI	Investment Promotion Centre (Mozambique)
CSFAC	China State Farm Agribusiness Corporation
CSR	corporate social responsibility
ECA	export credit agency
ECZ	Environmental Council of Zambia
EMA	Environmental Management Agency (Zimbabwe)
FDI	foreign direct investment
FOCAC	Forum on China–Africa Cooperation
FRELIMO	Liberation Front of Mozambique
GDI	Golden Driven Investments
MDG	Millennium Development Goal
MFEZ	Multi-Facility Economic Zone (Zambia)
MINAG	Ministry of Agriculture (Mozambique)
NFCA	Nonferrous Company Africa
NORINCO	China Northern Industries Corporation
ODA	Official development assistance
SINOMA	China Building Material Industrial Corporation
TIMB	Tobacco Industry and Marketing Board (Zimbabwe)
ZAFFICO	Zambia Forestry and Forest Industries Corporation Limited
ZCCM	Zambia Consolidated Copper Mines
ZCCZ	Zambia–China Economic and Trade Cooperation Zone
ZCMT	Zambia–China Mulungushi Textile Joint Venture
ZCTF	Zimbabwe Conservation Task Force
ZDA	Zambia Development Agency
ZESA	Zimbabwe Electricity Supply Company
ZFU	Zimbabwe Farmers Union
ZMDC	Zimbabwe Mining Development Corporation

# Acknowledgements

This working paper is a product of the project ‘Chinese trade and investment in Africa: Assessing and governing trade-offs to national economies, local livelihoods and forest ecosystems’, managed by CIFOR and implemented in conjunction with ICRAF-China and the University of Leipzig. The project was made possible by a grant from the German Federal Ministry of Economic Cooperation and Development (BMZ-GTZ-BEAF Contract No. 81121785). The authors also express their appreciation for the contributions made by project partners, namely the Instituto de Investigação Agrária de Moçambique (IIAM)/Plataforma para Investigação Agrária e Inovação Tecnológica (PIAIT) and the Universidade Eduardo Mondlane (UEM) in Mozambique; Copperbelt University in Zambia; and the University of Leipzig’s Institute for African Studies in Germany. We acknowledge in particular the assistance of Mário Falcão at UEM in providing orientation to fieldwork and reviewing

the Mozambique paper; Carlos Dominguez and Carmelia Chebeia at IIAM/PIAIT for providing an institutional home and much-needed logistical support; and David Englehardt for providing data to help orient our prioritisation of commodities in the region. We also acknowledge the many individuals from government agencies (forestry departments; ministries of agriculture, mining, finance, industry and commerce; environmental protection and investment promotion agencies; customs), embassies, civil society and farmers’ organisations, international organisations and the research community in the three focal countries for the time taken out of their busy schedules to share their knowledge and experiences with us. We thank Andrew Wardell and Louis Putzel for the excellent comments provided on an earlier draft, Jeff Walker for his graphic design assistance, and the efforts of colleagues in CIFOR’s Information Services Group for their assistance in ushering this publication through its final stages.



# Summary

China's diplomatic and economic presence in Africa has grown considerably in recent years. From the establishment of the Forum on China–Africa Cooperation (FOCAC) and efforts to strengthen diplomatic, cultural and economic relations with African nations to the rapid growth in Chinese foreign direct investment (FDI) and bilateral trade, this relationship is likely to continue to play a defining role in African economies. These trends are important for African nations that see this relationship as an opportunity to catalyse much-needed investments in infrastructure and industry, and to stimulate job creation and exports. At the same time, however, it has raised concerns among civil society and traditional development partners alike, which question whether the limited transparency or conditionalities in lending will undermine long-term development through increased indebtedness and competition with African industries or by slowing advances in governance. The research community has taken a keen interest in this dynamic and has begun to shed light on its implications for economic development in the global South.<sup>1</sup> A number of recent studies also explore how China's growing wood-processing sector is shaping the global timber trade and related impacts in source countries.<sup>2</sup> However, limited attention has been given to understanding how growing Sino-African trade and investment is shaping forests through extra-sectoral drivers (e.g. in the agricultural or mining sectors) or how broader trends in economic cooperation and diplomacy are shaping resource access and related impacts.

The aim of this report, and the project in which it is embedded, is to shed light on this debate through a comparative analysis of patterns of aid, trade and investment with Chinese and other 'development partners', and their social, economic and environmental implications for key sectors shaping African forests (agriculture, forestry, mining). Towards this end, this report explores the diplomatic and economic relations between China and three miombo woodland countries (Mozambique, Zambia and Zimbabwe). Emphasis is placed on the

identification of key patterns of Sino-African trade and investment in sectors of interest, as a means of identifying trends of importance to forests and exploring key themes for more in-depth research. The report is a synthesis of three country reports: a report on Mozambique by German and Wertz-Kanounnikoff (in prep), a report on Zimbabwe by Schoneveld and Gumbo (in prep) and a report on Zambia by Schoneveld, German and Gumbo (in prep).

As the product of a scoping study, this report faces several limitations which should be highlighted. First, the report draws heavily on official data on trade, investment, forest cover and investment; these data are highly variable in terms of quality and detail, and in some cases are of questionable validity. For example, exports reported by case study countries often contrast sharply with Chinese import data for those same commodities. We nevertheless draw on these data and data discrepancies to illustrate trends and possible governance shortfalls. Second, with bulk of the data drawn from key informant interviews, secondary sources and personal observation, many of the findings remain to be substantiated and nuanced through further research. Finally, many interviewees found it difficult to differentiate between Chinese state-owned and private enterprises, and between companies headquartered in China and those run by ethnic Chinese; this generated some confusion in attributing particular behaviours to particular sets of actors. Where possible, clarifications are made on state vs. private ownership and company origin. However, efforts to do so were limited by information availability and efforts to define this more clearly may have resulted in some inaccuracies.

Findings suggest that Chinese aid, trade, investment and influence are expanding rapidly in the southern Africa region. While China's presence in the region dates back to the liberation struggles in all three countries, the magnitude of economic and diplomatic cooperation has grown considerably in recent years. Chinese development assistance and corporate engagement in Africa fall within a wider umbrella of economic and diplomatic cooperation enshrined within the Forum on China–Africa Cooperation, the Forum on Economic and Trade Cooperation between China and Portuguese-speaking Countries (in the case of Mozambique) and a number of bilateral trade,

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<sup>1</sup> Jenkins and Edwards (2006); Broadman (2007); Alvarenga (2008); Rotberg (2008); Taylor (2009).

<sup>2</sup> Mackenzie (2006); Canby *et al.* (2007); Milledge *et al.* (2007); Mackenzie and Ribeiro (2009).

investment protection and aid agreements. Chinese official development assistance (ODA) in the region is increasingly coming in the form of loans rather than grants, reflecting the Chinese government's desire to distance itself from traditional donor status in favour of 'win-win' economic cooperation of a largely commercial character. In the case of Mozambique and Zambia, many of these loans are concessional. While diplomatic ties between China and Zimbabwe remain strong, Chinese ODA has been limited and loans are on less concessional terms than to any other African country.<sup>3</sup> The influx of capital is playing a key role in revitalising infrastructure, investment and trade in the region. However, the tendency for aid to be project-based rather than general budget support (and thus poorly aligned with national poverty reduction strategies), limited adherence to contemporary norms on development lending, prominence of tied aid and limited transparency associated with bilateral agreements<sup>4</sup> have raised concerns about competition with domestic firms, debt sustainability and social and environmental safeguards.

Both sides have actively pursued bilateral trade. Although the focal countries make a relatively minor contribution to Chinese imports, China represents an important trade destination for regional exports. The region's imports from China are dominated by manufactured goods, while imports to China consist primarily of wood and wood products (Mozambique), metals (Zambia and Zimbabwe) and agricultural commodities (all countries). Chinese FDI, stimulated by China's 'Going Out' or 'Going Global' strategy, is equally significant, most notably in the construction and mining sectors. In Mozambique, with Chinese state and private interests in just two mining concessions worth US\$835 million and many prospecting licences in the hands of Chinese firms, mining is clearly receiving the bulk of investment capital. The same is true for Zambia, where 98% of FDI pledged by Chinese firms targeted the mining and manufacturing sectors. Mega-investments in copper mining in the country have given China a 44% share of total FDI pledges since 2000. Recent Chinese investments in Zimbabwe are much smaller, with Chinese FDI stock less than 4% of Zimbabwe's total FDI stock in 2008.

The presence of Chinese firms in the agricultural sector varies between countries, with a very strong presence of Chinese private firms in cotton and

tobacco contract farming schemes in Zimbabwe, and a more modest presence of private and state-owned companies in cotton and jatropha production in Zambia. However, Chinese markets have a defining role in agricultural trade in all countries, particularly for sesame (in the case of Mozambique), tobacco (Zambia and Zimbabwe) and cotton (Zimbabwe). More research is needed to assess the socio-economic and ecological impacts associated with the Chinese presence in the sector. Tobacco is of particular interest in this regard, given the historical linkages between tobacco curing and deforestation in the region, the reported lack of interest among Chinese tobacco firms in Zimbabwe in adopting practices to reduce this impact, and the economic benefits associated with the ability of one Chinese firm to offer above-market prices to Zimbabwean farmers. There is also an indication that the burgeoning trade in sesame with China has had a favourable impact on smallholder livelihoods (as evidenced by widespread shifts from cotton to this crop); however, it could also have a negative impact on forests if claims about susceptibility to pests requiring frequent shifts to new agricultural plots are true. With all countries, it is difficult to draw any conclusions at this stage about whether production, labour and environmental practices vary between Chinese and non-Chinese firms. Chinese firms also hold two of the largest biofuel investments in the region, with 79 300 ha recently secured by a state-owned enterprise in Zambia and 20 870 ha in Mozambique. While this is certain to displace woodlands, such impacts are likely to result from host country efforts to channel investments to less densely settled areas of the country and could feature in many non-Chinese ventures as well.

In the forestry sector, Chinese firms and markets clearly have a defining presence in Mozambique, and to a lesser extent in Zambia. China's share in Mozambican timber exports has risen sharply, from a low of 10% in 2001 to 82% by the end of the decade, according to official statistics. The value of the Sino-Mozambican timber trade reached US\$134 million in 2010. While many large-scale investors have recently entered Mozambique to invest in timber plantations, the presence of Chinese firms and markets is only seen in timber harvested from natural forests. The value of Mozambican timber imports reported by China were found to far exceed the value of exports reported by Mozambique to all trade partners, suggesting a significant loss of tax revenue on US\$361 million in trade with China in the 2001–2010 period. Data also show high levels of exports of unprocessed logs (from 100% to 83% in the 2001–2007 period), despite official policies

3 World Bank (2008).

4 Most of these are in the multimillion-dollar range, but some are worth several billion dollars.

to promote processing prior to export. A log export ban implemented in 2007 seems to have reduced the proportion of unprocessed logs in exports. Yet the decline suggested by Chinese imports data is much more subtle than that indicated by data reported by Mozambique; the former data suggest that 76% of exports to China remain unprocessed. Furthermore, nearly 100% of exports classified as processed are processed only minimally, suggesting very limited achievement vis-à-vis official policy objectives. Irregularities in the operations of concessionaires and merchants of both Chinese and Mozambican origin point to significant weaknesses in law enforcement. In Zambia, Chinese companies hold 25% of concession licences, and companies operated by ethnic Chinese and Taiwanese and South Africans were found to be involved in the timber trade – all exporting to their countries of origin. With large concession areas, very low reported export volumes and a depressed domestic timber market, concerns have been raised over the destination of Zambian timber. While Chinese operators were found to be actively engaging pit-saw operators and simple licence holders in the two countries, the uniqueness of this economic niche and related social and environmental impacts have yet to be confirmed.

Sino-African trade in mining-related exports was found to be significant for Zambia and Zimbabwe, with copper and chrome the primary exports, respectively. The most notable presence is in Zambia, where Chinese capital injections into the Zambian mining sector at periods of economic uncertainty have helped to restore jobs and stabilise the trade balance. China is the second largest importer of Zambian copper, and the state-owned China Nonferrous Metal Mining Company (CNMC) acquired an 85% share in the Chambishi Copper Mine in 1998. In 2008, the Chinese and Zambian governments signed an agreement to develop Zambia's first Multi-Facility Economic Zone in Chambishi, expected to house six different mining sub-industries. Poor labour relations, displacement of communities with no compensation and overly generous incentives undermining the capacity of the country to capitalise upon its resources through private investment have been raised as key concerns linked to Chinese investments in the sector, although many of these concerns were raised with respect to private rather than state-owned firms. In Zimbabwe, Chinese investments in chrome processing have enabled an industry badly affected by low international prices to recover rapidly. Large numbers of small ethnic Chinese chrome processors also purchase illegally mined chromite ores, enabling

artisanal miners to overcome formal barriers to market entry but causing a surge in illegal chrome mining. Zimbabwe was also found to be mortgaging many of its mining assets to Chinese companies as collateral for Chinese development assistance and loans, raising concerns that Zimbabwe could lose control over valuable resources on terms that do not provide for long-term net benefits. In Mozambique, foreign investors had a very limited formal presence in the mining sector until very recently, when the country initiated a host of reforms to attract investments into the sector. Recent discovery of a massive coal deposit has led to a number of large-scale investments, with a Chinese state-owned enterprise holding a 40% ownership in the US\$2 billion Zambeze Coal Project and 9 billion tonne coal reserve. While this is one of the very few Chinese concessions, there has been a recent surge in prospecting licences, many of these from private Chinese firms. Further research is needed to assess the extent to which corporate practices vary by country of origin, and related social and ecological impacts.

The above highlights a number of priorities for further research. The established relationship between Chinese trade and forests, weak evidence of differentiated corporate practices and a clear policy challenge related to enhancing inward investment and value addition make further research on the timber sector in Mozambique a clear priority. This research would aim to make a balanced assessment of the economic and ecological impacts of the two main business models in the forestry sector (concessions vs. simple licences), inter-firm differences within each model, and the level of participation in each model by firms and actors of different countries of origin. In doing so, it would contribute to the identification of opportunities and barriers to realising sector aims overall, and via the concession model in particular. A second prominent topic for further research relates to the observed tendency of traders of Chinese origin to engage small-scale operators in all sectors (cotton and tobacco farmers, artisanal chromium miners, pit-saw operators), in both the formal and informal sectors. Through a comparative assessment across at least two sectors, research would seek to establish the uniqueness of this economic niche and identify the local livelihood and ecological impacts associated with it. A wider look at the role of Chinese bilateral diplomacy in shaping the conditions faced by economic operators in focal countries is also of interest, most notably the implications of high-level agreements and public sector finance to private firms operating abroad on the economic positioning of Chinese firms and its implications for forests.

# Sumário

A presença diplomática e econômica da China na África tem crescido consideravelmente nos últimos anos. Desde a criação do Fórum de Cooperação China-África (FOCAC) e os esforços para fortalecer as relações diplomáticas, culturais e econômicas com os países Africanos até o rápido crescimento do investimento estrangeiro direto (IED) e do comércio bilateral, é provável que essa relação continue a desempenhar um papel determinante nas economias da região. Estas tendências são importantes para as nações Africanas que veem essa relação como uma oportunidade para catalisar investimentos necessários na infraestrutura e indústria, e para estimular a criação de empregos e exportações. Ao mesmo tempo, no entanto, isso tem levantado preocupações entre a sociedade civil e os parceiros tradicionais de desenvolvimento, os quais questionam se a transparência limitada ou as condicionalidades vinculadas aos empréstimos irão prejudicar o desenvolvimento a longo prazo, através de um crescente endividamento e a competição com as indústrias Africanas, ou por meio da desaceleração dos avanços na área de governança. A comunidade de pesquisadores tem mostrado um grande interesse nesta dinâmica e começou a lançar luz sobre as suas implicações para o desenvolvimento econômico no hemisfério do sul<sup>5</sup>. Uma série de estudos recentes também explora como o crescente setor de processamento de madeira na China está moldando o comércio mundial de madeira e seus respectivos impactos nos países fornecedores de madeira<sup>6</sup>. Contudo, pouca atenção tem sido direcionada para compreender como o crescente comércio e investimento Sino-Africano estão impactando as florestas através de vetores extra-setoriais (por exemplo, setores de agricultura ou mineração) ou como as tendências mais amplas na cooperação econômica e diplomática estão moldando o acesso a recursos e os impactos associados.

O objetivo deste relatório e do projeto em que ele está inserido é lançar luz sobre este debate, através de uma análise comparativa dos modelos de ajuda,

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5 Jenkins e Edwards (2006); Broadman (2007); Alvarenga (2008); Rotberg (2008); Taylor (2009).

6 Mackenzie (2006); Canby *et al.* (2007); Milledge *et al.* (2007); Mackenzie e Ribeiro (2009).

comércio e investimento com os chineses e outros “parceiros de desenvolvimento”, e as suas implicações sociais, econômicas e ambientais para os setores-chaves (agricultura, silvicultura, mineração) que estão configurando o setor florestal Africano. Para esse fim, este relatório examina as relações diplomáticas e econômicas entre a China e três países com florestas de miombo (Moçambique, Zâmbia e Zimbábue). A ênfase é colocada sobre a identificação de padrões-chave do comércio e do investimento Sino-Africano em setores de interesse, como um meio de identificar as tendências importantes para as florestas e explorar temas-chave para investigação em maior profundidade. O relatório é uma síntese dos relatórios de três países: um relatório sobre Moçambique por German e Wertz-Kanounnikoff, um relatório sobre o Zimbábue por Schoneveld e Gumbo e um relatório sobre a Zâmbia por Schoneveld, German e Gumbo (todos os três em preparação).

Como o produto de um estudo exploratório, este relatório enfrenta várias limitações que devem ser destacadas. Primeiro, o relatório se baseia fortemente em dados oficiais sobre o comércio, os investimentos, e a cobertura florestal; esses dados variam muito em termos de qualidade e detalhe, e em alguns casos, são de validade questionável. Por exemplo, as exportações registradas pelos países incluídos nesses estudos de caso muitas vezes contrastam fortemente com os dados de importação Chinesa para aquelas mesmas mercadorias. No entanto, utilizamos esses dados e as suas discrepâncias para ilustrar as tendências e as possíveis deficiências de governança. Em segundo lugar, como a maior parte dos dados provêm de entrevistas com informantes-chave, fontes secundárias e observação pessoal, muitos resultados ainda precisam ser comprovados e estudados em maior detalhe através de novas pesquisas. Finalmente, muitos dos entrevistados acharam difícil diferenciar entre empresas estatais e privadas Chinesas e empresas sediadas na China, e aquelas que são administradas por pessoas de origem étnica Chinês. Isso gerou alguma confusão na atribuição de determinados comportamentos a determinados conjuntos de atores. Sempre que for possível, são feitos esclarecimentos sobre propriedade estatal versus propriedade privada, e sobre a origem da empresa. Contudo, os esforços para realizar tais esclarecimentos foram limitados pela

disponibilidade de informações e os esforços para definir isso mais claramente podem ter resultado em algumas imprecisões.

Os resultados sugerem que a ajuda, o investimento, o comércio e a influência Chinês estão se expandindo rapidamente na região sul da África. Enquanto a presença da China na região remonta às lutas de libertação nos três países estudados, a magnitude da cooperação econômica e diplomática tem crescido consideravelmente nos últimos anos. A assistência ao desenvolvimento e o engajamento do sector privado da China na África situa-se num contexto mais amplo de cooperação econômica e diplomática consagrada no âmbito do Fórum de Cooperação China-África, o Fórum de Cooperação Econômica e Comercial entre a China e os Países de Língua Portuguesa (no caso de Moçambique) e uma série de acordos de comércio bilateral, de proteção de investimentos e de ajuda. A Assistência Oficial da China para o Desenvolvimento (AOD) na região é cada vez mais apresentando-se na forma de empréstimos ao invés de subsídios, refletindo o desejo do governo Chinês de distanciar-se de sua condição de doador tradicional em favor de uma cooperação econômica estilo ‘ganhador-ganhador’, de caráter em grande parte comercial. Nos casos de Moçambique e Zâmbia, muitos desses empréstimos são preferenciais. Enquanto os laços diplomáticos entre a China e o Zimbábue permanecem fortes, a AOD Chinesa tem sido limitada e os empréstimos estão em condições menos preferenciais do que para qualquer outro país Africano<sup>7</sup>. O influxo de capital está desempenhando um papel-chave na revitalização da infraestrutura, do investimento e do comércio na região. No entanto, a tendência de fornecer ajuda baseada em projetos, ao invés de apoio ao orçamento geral (e, portanto, mal alinhada com as estratégias nacionais de redução da pobreza), com limitada aderência às normas contemporâneas sobre empréstimos para o desenvolvimento, a proeminência da ajuda condicional e a limitada transparência associadas aos acordos bilaterais<sup>8</sup> têm levantado preocupações sobre a concorrência com empresas nacionais, a sustentabilidade da dívida e as garantias sociais e ambientais.

Ambos os lados têm buscado ativamente o comércio bilateral. Embora os países alvo ofereçam uma

contribuição relativamente pequena às importações Chinesas, a China representa um importante destino comercial para as exportações regionais. As importações de produtos Chineses na região são dominadas por manufaturados, enquanto as exportações para a China consistem principalmente de madeira e produtos madeireiros (Moçambique), metais (Zâmbia e Zimbábue) e produtos agrícolas (todos os países). O IED Chinês, estimulado pela estratégia da China de “voltar-se para fora” ou “ação global”, é igualmente significativo, principalmente nos setores de construção e mineração. Em Moçambique, com os interesses do estado Chinês e da iniciativa privada em apenas duas concessões de mineração avaliado em \$835 milhões de dólares e com muitas licenças de prospecção nas mãos de empresas Chinesas, claramente a mineração está recebendo a maior parte do capital de investimento. O mesmo é verdade para a Zâmbia, onde 98% do IED empenhado por empresas Chinesas estão destinados aos setores de mineração e manufatura. Mega-investimentos em mineração de cobre no país deram à China uma quota de 44% do IED total empenhado desde 2000. Recentes investimentos Chineses em Zimbábue são muito menores, com o IED chinês representando menos de 4% do IDE total do país, em 2008.

A presença de empresas chinesas no setor agrícola varia entre os países, com uma presença muito forte de empresas privadas Chinesas em contratos de cultura de algodão e tabaco no Zimbábue, e uma presença mais modesta das empresas privadas e estatais na produção de algodão e jatropha em Zâmbia. No entanto, os mercados Chineses têm um papel determinante no comércio agrícola em todos os países, particularmente para gergelim (no caso de Moçambique), tabaco (Zâmbia e Zimbábue) e algodão (Zimbábue). Mais pesquisas são necessárias para avaliar os impactos socio econômicos e ecológicos associados à presença Chinesa nesse setor. O tabaco é de particular interesse, devido às ligações históricas entre a secagem do tabaco e o desmatamento na região; a falta de interesse registrada entre as empresas Chinesas de tabaco no Zimbábue para a adoção de práticas visando reduzir esse impacto; e os benefícios econômicos associados à capacidade de uma empresa Chinesa de oferecer preços acima do mercado para os agricultores de Zimbábue. Há também uma indicação de que o florescente comércio de gergelim com a China tem gerado um impacto favorável sobre os modos de subsistência dos pequenos agricultores (como evidenciado pela substituição generalizada do algodão

7 World Bank (2008)

8 A maioria desses acordos bilaterais está na faixa de multi-milhões de dólares, mas alguns deles têm valores de vários bilhões de dólares.

por esta cultura). Contudo, isso também poderia ter um impacto negativo sobre as florestas, se alegações sobre a susceptibilidade às pragas e a necessidade de fazerem mudanças frequentes para novas áreas agrícolas são verdadeiras. Em todos os países, ainda é difícil tirar conclusões – neste momento – sobre se as práticas de trabalho, produção e meio ambiente variam entre empresas Chinesas e não-Chinesas. As empresas Chinesas também possuem dois dos maiores investimentos de biocombustíveis na região, com 79 300 ha recentemente assegurados por uma empresa estatal em Zâmbia e 20 870 ha em Moçambique. Embora é certo que isso cause a conversão de florestas, esses impactos provavelmente resultarão de esforços do país anfitrião para canalizar investimentos para áreas menos densamente povoadas do país, e poderiam também fazer parte de muitos empreendimentos não-Chineses.

No setor florestal, as empresas e mercados Chineses têm uma presença claramente definida em Moçambique, e, em menor medida, em Zâmbia. A participação da China nas exportações de madeira de Moçambique aumentou consideravelmente, de 10% em 2001 até 82% ao final da década, de acordo com estatísticas oficiais. O valor do comércio de madeira Sino-Moçambicano atingiu 134 milhões de dólares americanos em 2010. Enquanto muitos investidores de grande escala entraram recentemente em Moçambique para investir em plantações de madeira, a presença de empresas e mercados Chineses só é vista em madeira extraída de florestas nativas. O valor das importações de madeira de Moçambique relatado pela China excede em muito o valor das exportações relatado por Moçambique para todos os seus parceiros comerciais, sugerindo uma perda significativa na receita fiscal no comércio com a China no período de 2001-2010, da ordem de 361 milhões de dólares americanos. Os dados também mostram níveis elevados de exportação de toros não processados (de 100% a 83% no período 2001-2007), apesar das políticas oficiais para promover o processamento antes da exportação. A proibição de exportação de toros implementada em 2007 parece ter reduzido a proporção de toros não processados nas exportações. No entanto, o declínio sugerido pelos dados de importações Chinesas é muito mais sutil do que o indicado pelos dados relatados por Moçambique: os dados anteriores sugerem que 76% das exportações para a China são de toros não processados. Além disso, quase 100% das exportações classificadas como toros processados referem-se a produtos minimamente processados, o que sugere uma conquista muito limitada em

face dos objetivos da política oficial. Irregularidades nas operações das concessionárias e comerciantes de tanto de origem Chinesa como Moçambicana apontam fraquezas significativas na aplicação da lei. Em Zâmbia, as empresas Chinesas têm 25% das licenças de concessão, e empresas operadas por pessoal de origem étnica Chinesa, Taiwanesa e Sul-africana estavam envolvidas no comércio de madeira – todos exportando para seus respectivos países. Com grandes áreas de concessão, registros de volumes de exportação muito baixos e um mercado doméstico de madeira deprimido, foram levantadas preocupações sobre o destino da madeira de Zâmbia. Enquanto os operadores Chineses estavam ativamente envolvidos com serradores artesanais de pequena escala e detentores de licença simples nos dois países, a singularidade deste nicho econômico e os respectivos impactos sociais e ambientais ainda precisam ser confirmados.

O comércio Sino-Africano de mineração relacionado com as exportações foi significativo para Zâmbia e Zimbábue, com o cobre e cromo sendo as exportações primárias, respectivamente. A presença mais notável é em Zâmbia, onde as injeções de capital Chinês no setor de mineração em períodos de incerteza econômica têm ajudado a recuperar empregos e a estabilizar a balança comercial. A China é o segundo maior importador de cobre da Zâmbia, e a estatal Companhia Chinesa de Mineração de Metal Não-ferroso (CNMC) adquiriu uma participação de 85% na mina de cobre Chambishi em 1998. Em 2008, os governos da China e da Zâmbia assinaram um acordo para desenvolver a primeira Zona Econômica de Multi-Empreendimentos de Zâmbia, no Chambishi, a qual espera-se que abrigue seis diferentes sub-indústrias de mineração. As principais preocupações relacionadas aos investimentos Chineses no setor foram associadas com as relações precárias de trabalho, o deslocamento de comunidades sem qualquer compensação e incentivos excessivamente generosos deteriorando a capacidade do país para beneficiar-se de seus recursos através de investimentos privados. Todavia, muitas dessas preocupações foram levantadas com relação ao setor privado em vez de empresas estatais. Em Zimbábue, os investimentos Chineses no processamento de cromo permitiram que uma indústria bastante afetada pelos baixos preços internacionais pudesse recuperar-se rapidamente. Um grande número de pequenos processadores de cromo de origem étnica Chinesa também compra minério de cromita extraído ilegalmente, permitindo que mineiros artesanais superem as barreiras para a entrada no mercado formal, mas causando um surto

de mineração ilegal de cromo. Os resultados também mostram que o Zimbábue estava hipotecando muitos de seus ativos de mineração para empresas Chinesas como garantia à assistência ao desenvolvimento e empréstimos Chineses, levantando preocupações de que o Zimbábue poderia perder o controle sobre seus valiosos recursos em termos de não verem benefícios líquidos ao longo prazo. Em Moçambique, os investidores estrangeiros tiveram uma presença muito limitada no setor de mineração até muito recentemente, quando o país iniciou uma série de reformas para atrair investimentos para o setor. A recente descoberta de um enorme depósito de carvão levou a uma série de investimentos de grande escala, com uma empresa estatal Chinesa assegurando a propriedade de 40% do Projeto de Carvão de Zambeze, com valor estimado de dois bilhões de dólares americanos e uma reserva de 9.000 milhões de toneladas de carvão. Embora esta seja uma das poucas concessões Chinesas, tem havido uma recente onda de licenças para prospecção, muitas das quais por empresas privadas Chinesas. Mais pesquisas são necessárias para avaliar até que ponto as práticas empresariais variam pelo país de origem, e os respectivos impactos sociais e ecológicos.

O panorama apresentado acima destaca uma série de prioridades para futuras pesquisas. A relação estabelecida entre o comércio Chinês e as florestas, as fracas evidências de práticas diferenciadas entre empresas e um claro desafio político relacionado ao aumento do investimento interno e adição de

valor fazem com que mais pesquisas sobre o setor de madeira em Moçambique seja uma clara prioridade. Esta pesquisa teria como objetivo fazer uma avaliação equilibrada dos impactos econômicos e ecológicos dos dois principais modelos de exploração no setor florestal (concessões versus licenças simples), das diferenças entre empresas dentro de cada modelo, e o nível de participação em cada modelo por empresas e atores procedentes de diferentes países. Deste modo, contribuiria para a identificação de oportunidades e barreiras para alcançar os objetivos do setor de um modo geral, e em particular através do modelo de concessão. Um segundo tema de destaque para futuras pesquisas refere-se à tendência observada entre comerciantes de origem Chinesa de envolver pequenos operadores em todos os setores (produtores de algodão e tabaco, mineiros artesanais de cromo, serradores artesanais de pequena escala), em ambos os setores formal e informal. Através de uma avaliação comparativa entre pelo menos dois setores, a pesquisa buscaria estabelecer a singularidade desse nicho econômico e identificar os impactos ecológicos e sociais associados a ele. Um olhar mais amplo para o papel da diplomacia bilateral Chinesa na formatação das condições enfrentadas pelos operadores econômicos nos países estudados também é de interesse, principalmente as implicações dos acordos de alto nível e do financiamento pelo setor público às empresas privadas que operam no exterior para o posicionamento econômico de empresas Chinesas, e suas implicações para as florestas.





# 1. Background and justification

## 1.1 Evolution of Chinese aid, trade and investment in Africa

African trade is rapidly re-orienting from the 'Global North' to the 'Global East' (Carmody and Owusu 2007). China's trade with Africa has exploded over the past few years as demand for imports has risen to fuel the rapidly expanding manufacturing sector, making China Africa's third largest trading partner (Rich 2007). China has also become a significant source of foreign direct investment (FDI) and development lending, with investment by state-owned and private commodity corporations rising rapidly due to government support programmes (Asche and Schüller 2008). This has fuelled a new symbiosis between Africa and China, with China's demand for raw materials responding to Africa's relatively abundant supply of energy, minerals, timber and land, and growing demand in Africa for Chinese manufactured goods (Rotberg 2008). During the recent financial crisis, Chinese economic activities and investment remained robust even as many companies scaled back operations. Trade and investment in timber, agricultural cash crops and biofuels already pose challenges to forest sustainability (Canby *et al.* 2007, Milledge *et al.* 2007, German *et al.* 2010, Mandondo and German 2011). This Africa–China symbiosis could therefore be 'the making of Africa' by creating jobs, export processing zones and investments in education and infrastructure, or it could undermine long-term development via imported labour, competition with African goods, resource depletion and by slowing advances in governance (Rotberg 2008).

China's role in Africa is of interest because of changes not only of degree (per cent trade with different world regions, volume of trade), but also of kind. Qualities which are reported to set China apart from other development partners include: (1) a collaborative state-business approach to foreign policy, enabling Chinese firms to bear the risks that hinder investment by other players (Edinger 2008); (2) the limited transparency of high-stake negotiations involving foreign aid, trade and investment (Huse and Muyakwa 2008); and (3) a 'no questions asked' policy regarding terms and conditions of development lending – viewed

favourably by African leaders keen to maximise self-determination and minimise non-tariff trade barriers, but having the effect of loosening social and environmental safeguards (BIC 2006). Chinese firms have been criticised for violations of anti-corruption, environmental, labour and social standards in Africa (Asche and Schüller 2008), raising concerns about the sustainability of extractive activities (de Wit 2007). However, prior analyses of the contributions of Chinese investments to long-term economic development in Africa suggest a high degree of variation between sectors, fail to derive clear conclusions on welfare impacts from existing data (Asche and Schüller 2008) or analyse local social and environmental impacts without a balanced consideration of social benefits (White *et al.* 2006). Additional research is clearly needed to clarify China's role in shaping long-term development prospects in the region.

## 1.2 Characteristics and livelihood importance of southern Africa's forests and woodlands

Forests and woodlands cover significant areas throughout southern Africa, estimated at 67% in 2005 according to official statistics (Table 1). The miombo woodlands are the predominant forest type and 'the most extensive tropical seasonal woodland and dry forest formation in Africa', covering around 2.4 million km<sup>2</sup> (World Bank 2008: 1). With an estimated 8500 species of higher plants and 54% plant endemism, the woodlands' significance to global biodiversity conservation is well known.

Equally significant is the miombo's importance to local livelihoods. The region is inhabited by approximately 75 million people, and an additional 25 million urban residents rely on wood or charcoal sourced from these woodlands for their energy needs (Campbell *et al.* 2003, Kambewa *et al.* 2007, SEI 2002, cited in World Bank 2008). Where off-farm opportunities are limited, up to a third of household consumption can come from dry woodlands. They also offer important opportunities for generating much-needed cash income through the sale of honey, mushrooms, caterpillars, charcoal and other

**Table 1. Forest and woodland statistics for miombo woodland countries**

Country	Forest cover 2010 ('000 ha)	Other wooded land 2010 ('000 ha)	Forest and woodland cover (%)	Deforestation rate 1990–2010 (%)
Angola	58 480	0	46.9	0.20%
DR Congo	154 135	11 513	70.6	0.19%
Malawi	3 237	0	27.3	0.85%
Mozambique	39 022	14 566	67.0	0.50%
Tanzania	33 428	11 619	47.6	0.97%
Zambia	49 468	6 075	73.8	0.32%
Zimbabwe	15 624	0	40.0	1.48%

Source: FAO 2010, Mongabay, available at [http://rainforests.mongabay.com/deforestation\\_alpha.html](http://rainforests.mongabay.com/deforestation_alpha.html) (30 November 2011)

forest products and provide important dry-season income flows. The miombo woodlands are also known to provide an important safety net preventing households from slipping further into poverty, particularly in times of crop failure or household shocks – and therefore play a role in reducing the vulnerability of the rural poor (Shackleton 2006, Shackleton *et al.* 2007, World Bank 2008). Formal and informal forest-based livelihoods have also helped some households move out of poverty (Shackleton 2005).

### 1.3 Scope of analysis

This paper, and the wider project in which it is embedded, seeks to understand what is unique about

Africa's commercial relations with China in the forestry sector and other sectors shaping forests, and how trends in forest-related trade and investment play out in key forest ecosystems. The current paper, derived from the analysis of secondary sources and a rapid in-country scoping study in three southern African countries (Mozambique, Zambia, Zimbabwe) (German and Wertz-Kanounnikoff in prep; Schoneveld and Gumbo in prep; Schoneveld *et al.* in prep), seeks to characterise the bilateral diplomatic and economic relationship; analyse trends in Sino-African trade and investment in the agricultural, forestry and mining sectors; and identify key themes for more in-depth research.

## 2. Objectives

The primary objective of this scoping exercise was to gain an understanding of patterns in Chinese trade and investment in the miombo woodlands, the impacts and trade-offs of Chinese trade and investment in priority sectors, and the legal and institutional frameworks shaping these impacts. Secondary objectives included the following:

1. to identify countries and commodities in each ecoregion (Congo Basin, miombo woodlands) in which the Chinese government and private sector have the greatest influence, so as to enable the strategic selection of case studies for more in-depth analysis;
2. to make a preliminary assessment of the impacts and trade-offs of Chinese trade and investment in prioritised countries, sectors (agriculture, forestry, mining) and commodities; and
3. to identify specific countries and commodities for more in-depth analysis in subsequent phases of research, and justify these choices.

### 3. Research questions

The following questions guided the scoping study.

1. In which countries in the miombo ecoregion do the Chinese government and corporations have the greatest economic and political influence, and why?
2. Which economic sectors receive most of the investments from the Chinese government or private sector?
3. In what commodities do the Chinese government and firms have the greatest involvement, and how significant is the influence of these commodities for countries in the region?
4. What are the characteristics of current and planned Chinese investments in sectors of interest (agriculture, forestry, mining)? Which commodities are significant to the research, in terms of both Chinese trade and investment and potential impacts on forests?
5. What is the nature of Chinese (and, where possible, non-Chinese) involvement in selected sectors and/or field sites for commodities of interest:
  - What are current levels of Chinese investment and trade in commodities of interest?
  - Who are the corporate actors involved in producing or extracting each commodity, and where are their activities located?
  - To what extent can differences in business practices be discerned between Chinese and non-Chinese operators?
6. What kind of local social, economic and environmental impacts may be observed from published reports and rapid field-based scoping of select Chinese investments/concessions in commodities of interest? Is significant deforestation or forest degradation from these investments currently observed or anticipated based on company expansion plans?
7. What governance conditions currently shape FDI and corporate practices, and related social and environmental impacts?
8. How do key experts assess the trade-offs (social benefits and costs) of Chinese and non-Chinese investments in commodities or sectors of interest?

## 4. Methodology

The methodology employed for the scoping phase was adapted according to the key stages of research.

### 4.1 Country selection for scoping

The first stage in the scoping phase, which focused on identifying countries and commodities in which the Chinese government and private sector have the greatest influence, relied purely on the review of published literature and secondary sources. Countries considered at this stage as possibilities for in-depth research included Mozambique, Tanzania, Zambia and Zimbabwe. To begin to understand trends in Chinese trade, investment and influence and further narrow the scope of countries and commodities for in-country scoping, online searches of global databases, civil society reports, press releases, industry reports and published literature were carried out. Data collection focused on:

- proportion of total trade with China (for all countries under consideration within each ecoregion);
- primary commodities exported to China, and proportion of total trade for that commodity that is destined for China (for all countries under consideration within each ecoregion);
- total forest cover and deforestation rates (for all countries under consideration within each ecoregion);
- key 'deals' signed between China and African countries of interest, including type of agreement (e.g. trade, aid, debt relief, investment, contracting agreements or 'package' deals), value and sectors involved; and
- location and nature of current and planned Chinese investments or mega-deals, including sector(s) and commodity(ies), value and key corporate players.

### 4.2 Scoping methodology

The second stage in the scoping study consisted of country-level scoping to identify: (1) commodities with the greatest impact on forests where Chinese state-owned or private firms have a notable presence; and (2) specific case studies for more in-depth analysis. This was carried out in three of the miombo

woodland countries: Mozambique, Zambia and Zimbabwe (Figure 1). Reasons for this selection are given in the Findings section.

This involved two methodologies. The first, relying exclusively on interviews with key informants in capital cities and a review of documents acquired through these interactions, aimed to capture major issues and trends related to both Chinese economic and diplomatic cooperation with the country of interest and private sector engagements in sectors of interest (forestry, mining, agriculture). Key informant interviews were carried out with representatives of various government agencies, including investment promotion agencies, land ministries, environmental protection agencies, key sectoral ministries (agriculture, mining), forestry departments and, in some cases, ministries of trade and finance. They were also carried out with various embassies (Chinese, other emerging economies, OECD countries), civil society organisations, research organisations and private firms.

The second key component, assuming a subnational focus, aimed to verify key observations from national-level interviews; explore the nature of



**Figure 1. Southern Africa, with approximate distribution of miombo woodlands and focal countries for in-field scoping**

Source: Jeff Walker; miombo distribution derived from World Bank (2008)

**Table 2. The geographical and commodity foci of field scoping in miombo woodland countries**

Country	Sector		
	Agriculture	Forestry	Mining
Mozambique	–	Chinese investment and trade in the forestry sector in Cabo Delgado Province	–
Zambia	–	Chinese investment and trade in the forestry sector in Western and North-Western Provinces	Chinese investments in copper mining in Copperbelt Province
Zimbabwe	–	–	Chinese investment in chrome mining in the Southern Great Dyke

impacts of select commodities and business models on forests; and identify priority questions and research design features for more in-depth research. The methodology consisted of key informant interviews with government agencies, civil society organisations and private sector actors in provincial or district capitals; review of data or reports acquired from key informants; and rapid field visits to areas where investments are being undertaken or the influence of trade being felt, to speak with community leaders and affected households. Given time and resource limitations, scoping focused only on select commodities perceived to be most interesting from the standpoint of Chinese trade and investment and its potential impacts on forests

(Table 2). Resource limitations also affected our ability to apply systematic sampling protocols, limiting the extent to which findings from field-based scoping can be generalised.

In some cases, national-level interviews ruled out certain sectors or commodities altogether, and field scoping was not necessary. In other cases, potentially interesting cases were not pursued through fieldwork during in-country scoping because of the time-bound and selective nature of this ground-truthing. This is true for tobacco in Zimbabwe, sesamum in Mozambique and cotton in Zambia and Zimbabwe. These cases will be considered for inclusion in a subsequent phase of the project.

# 5. Findings

Findings are presented according to key phases of research.

## 5.1 Phase 1: Country and commodity selection

### 5.1.1 Country selection

Findings related to the key variables of interest to country selection are summarised in Table 3 for the miombo woodland countries under consideration. Based on these figures, Zambia was a clear choice because of the high levels of Chinese trade and investment dependency, recent Chinese investments in multi-sector economic zones and infrastructure, and evidence of civil society concerns over Chinese influence. Mozambique was also considered strategic because of its high level of forest cover and the importance of timber trade overall and with China, including several published reports on the same (Mackenzie 2006, Mackenzie and Ribeiro 2009, Ribeiro and Nhabanga 2009). While Tanzania could have been chosen given the high trade volumes with China and the importance of the Chinese timber (Milledge *et al.* 2007), Zimbabwe was chosen because of the significance of trade in tobacco and this crop's published links to deforestation in the region.

### 5.1.2 Commodity selection

Given the difficulty of establishing the relationship between particular commodities and deforestation in the absence of field reconnaissance visits, a decision was made to leave the exact identification of commodities to the in-field scoping exercise. However, it was agreed to conduct in-country scoping in each ecoregion in three sectors, each of which has proven linkages to deforestation: forestry, mining and agriculture. To identify commodities that should be considered for scoping within each country, additional data were gathered. These data and the rationale for selecting a long-list of commodities at this stage are presented below.

Data on primary commodities traded by country, and the Chinese share of exports for these commodities, are presented in Table 4 for prioritised miombo

woodland countries. Data were those most recently available at the time that this exercise was conducted.

Based on the data in Tables 2 and 3, a set of commodities for in-field scoping by sector was selected for prioritised miombo woodland countries. These are summarised in Table 5.

## 5.2 Phase II: In-country scoping

Findings from in-country scoping are broken down into key types of influence (aid, trade and investment) and the priority sectors under review.

### 5.2.1 Sino-African relations in southern Africa: Aid, diplomacy and political influence

Sino-African diplomatic relations in southern Africa are not new. The People's Republic of China (PRC) and other Communist countries supported liberation struggles across the region, and the Chinese government continues to emphasise the support provided by countries in the region in helping restore China's seat in the United Nations in 1972.<sup>9</sup> However, following an interim period of relatively inward-looking political and economic reforms, Chinese aid and political influence in the region have been on the rise – particularly since the early 2000s – where international cooperation has been framed and advanced by the Forum on China–Africa Cooperation: 'China's massive market and increasing ability to invest overseas are also providing Beijing new sources of political leverage with which to pursue the country's grand strategic objectives', including the need to secure natural resources and raw materials to fuel its growing economy (Friedberg 2006: 6). With a current account surplus of US\$253.3 billion in 2009, China has been able to achieve a foreign exchange reserve of US\$2.3 trillion, the world's largest. While about half of this reserve is being applied in US bonds, a sizeable amount is being invested in 'geostrategic positioning to guarantee energy independence and foreign aid to other developing countries' (Ilheu 2010: 4). China's financial capacity, together with what has been called

<sup>9</sup> See Youde (2007); <http://zm.chineseembassy.org/eng/zxxx/t780872.htm>; <http://www.isn.ethz.ch/isn/Current-Affairs/Security-Watch/Detail/?id=53470&lng=en> (24 February 2011).

**Table 3. Key variables related to China–Africa relations for miombo woodland countries**

Variable	Mozambique	Tanzania	Zambia	Zimbabwe
Chinese trade dependency <sup>a</sup> (2008)	4.7%	6.5%	10.3%	8.8%
Total trade with China (million US\$, 2008) <sup>b</sup>	423	1 072	801	280
Key commodities exported to China (% of total export to China, 2008) <sup>c</sup>	Wood (38%), Aluminium (37%), Sesamum seeds (31%)	Precious metal ores (36%), Copper ores (29%), Sesamum seeds (20%)	Copper (64%), Copper ore (20%), Tobacco (4%)	Tobacco (67%), Iron (19%)
Current investment dependency (% Chinese FDI stock of total FDI stock) <sup>d</sup>	1.1%	2.8%	7.6%	3.9%
Major planned investments	China is the second largest investor in Mozambique, with 2009 investments estimated at US\$76.8 million, much of this in 'high-profile' projects such as the national stadium, government buildings and airport expansion <sup>e</sup>	Development of two Special Economic Zones planned; 90% infrastructure tenders won by Chinese	<ul style="list-style-type: none"> <li>• Chambishi Multi-Facility Economic Zone, in operation<sup>f</sup></li> <li>• Approximately 5% of total copper output in Zambia by Chinese companies</li> <li>• Zhougui Mining Group has pledged US\$5 billion for mining in Zambia (largest private investment)<sup>g</sup></li> <li>• US\$3 billion investment in jatropha by joint venture (Wuhan-Biomass PLC)</li> </ul>	US\$8 billion investment in mining, energy, housing <sup>h</sup>
Forest cover (2008) <sup>i</sup>	57%	45%	44%	24%
Annual change in forest cover (2000–2005) <sup>j</sup>	–0.3% (50 000 ha)	–1.1% (412 200 ha)	–1.0% (444 800 ha)	–1.6% (313 000 ha)

a UN Comtrade

b Includes exports and imports.

c UN Comtrade

d MOFCOM 2010; UNCTAD

e See: <http://www.clubofmozambique.com/pt/sectionnews.php?secao=investimento&id=14987&tipo=one>; [http://www.portaldogoverno.gov.mz/noticias/news\\_folder\\_econom\\_neg/julho2008/nots\\_en\\_357\\_jul\\_08/](http://www.portaldogoverno.gov.mz/noticias/news_folder_econom_neg/julho2008/nots_en_357_jul_08/). New industrial parks with agroindustrial and mining elements (Dondo, Nacala) are referenced in regard to new Chinese investments.

f The IMF has expressed concern about the investment conditions established for Chinese companies entering the economic zone, established in 2005 and already a source of major conflict between workers, communities and Chinese investors. See: 'IMF anxious about Chambishi economic zone?', available at: [http://www.minewatchzambia.com/2007/04/imf-anxious-about-chambishi-economic\\_03.html](http://www.minewatchzambia.com/2007/04/imf-anxious-about-chambishi-economic_03.html) (5 May 2010).

g Zambia Development Agency (ZDA 2010).

h Chinese company Sonangol (Chinese–Angolan joint venture) is purportedly interested in investing in gold and platinum refining, oil and gas exploration, fuel procurement and distribution, and housing and funds are said to have already reached domestic financial institutions (see: 'US\$8 billion Chinese investment in Zimbabwe', available at: <http://beta.miningreview.com/node/16779>; 5 May 2010).

i FAOSTAT

j See: <http://rainforests.mongabay.com/deforestation/2000/Zimbabwe.htm>.



**Table 4. Commodity share in exports by miombo woodland country<sup>a</sup>**

Variable	Mozambique <sup>b,c</sup>	Zambia	Zimbabwe
Top commodities exported to China (2009 data)	Wood (38%), Aluminium (37%), Sesamum seeds (31%)	Copper (64%), Copper ore (20%), Tobacco (4%)	Tobacco (67%), Iron (19%)
Top commodities exported to world (2008 data)	Aluminium (54%), Oil (11%), Tobacco (8%)	Copper (65%), Copper ore (15%), Base metals (6%)	Live plants (12%), Nickel (10%), Cotton (9%), Tobacco (7%)
Chinese share in commodity exports, % (2008 data)			
– Aluminium	0*	0	0
– Chromium	0	0	59.9
– Copper	0	6.3	0
– Copper ore	No trade	5.7	0
– Cotton	0.6	26.5	6.2
– Iron	5.3	0	0.2
– Sesamum seeds	57.6	No trade	No trade
– Tobacco	0	2.0	9.3
– Wood	80.2	12.3	0.4

a UN Comtrade

b At the time of preparing this interim report, these data were not yet available for 2009, only 2008.

c Evidence of illegal timber harvesting in Zambézia, Cabo Delgado, Nampula and Niassa Provinces supports the importance of wood as a commodity to be explored, while the recent increase in exports of oil seeds and chrome suggests these commodities should also be examined (<http://www.clubofmozambique.com/pt/sectionnews.php?secao=investimento&id=14987&tipo=one>; 14 December 2011). Evidence of a 'radical' increase in exports to China should also be noted (see: [http://www.portaldogoverno.gov.mz/noticias/news\\_folder\\_econom\\_neg/julho2008/nots\\_en\\_357\\_jul\\_08/](http://www.portaldogoverno.gov.mz/noticias/news_folder_econom_neg/julho2008/nots_en_357_jul_08/); 14 December 2011).

**Table 5. Country selection for in-field scoping**

Country	Forestry	Mining	Agriculture
Zambia	Wood	Copper, Copper ore	Tobacco, Jatropha, Cotton
Zimbabwe	–	Chromium	Tobacco, Cotton
Mozambique	Wood	Aluminium	Sesamum

a 'collaborative state-business approach to foreign policy' (Edinger 2008), has rapidly expanded official development assistance (ODA) to African nations as well as the presence of Chinese firms in Sino-African trade, FDI and public tenders for infrastructure (Luo *et al.* 2010). This section provides a brief summary of Chinese aid and diplomatic relations with the three countries of interest.

### Mozambique

Sino-Mozambican relations have a long history, dating from Mozambique's struggle for independence from Portugal when the PRC provided guerrilla training, military equipment and financial support to the Liberation Front of Mozambique (FRELIMO) (Chichava 2008). Shortly after Mozambique's independence in 1975, the two countries established

diplomatic relations, which remained intact during the 1977–1992 'civil' war, and have intensified since the peace accord in 1992 (Jansson and Kiala 2009). Following the end of the war, Chinese firms were among the first to re-enter the country, among them construction companies and timber traders.

By 2008, China had become Mozambique's second largest foreign investor following South Africa, with US\$76.8 million worth of investment (Jansson and Kiala 2009). A number of bilateral agreements have supported the consolidation of Chinese influence in Mozambique (Jansson and Kiala 2009). These fall within a wider framework for China–Africa cooperation under FOCAC, through which bilateral trade and investment protection agreements, duty free treatment and debt relief are being extended

across the continent. Sino-Mozambican economic cooperation is also supported by the Forum on Economic and Trade Cooperation between China and Portuguese-speaking Countries.

China's overseas aid to Mozambique consists of preferential and interest-free loans, direct investments in trade and services, technical agreements, debt cancellation and emergency relief (AFRODAD 2007<sup>10</sup>). While grants and loans are similar in number, far larger volumes of aid come in the form of concessional loans, most of these from China's Eximbank (German and Wertz-Kanounnikoff in prep). According to the Economic and Commercial Counsellor's office of the Chinese Embassy in Maputo, bilateral cooperation between China and Mozambique has shifted away from aid towards private sector-based cooperation and partnerships of mutual interest. A significant proportion of these funds flows to infrastructure, particularly the rehabilitation of roads and bridges and the construction or renovation of public buildings.

In addition to the close to US\$3 billion in Chinese aid since 2001, China plans to invest US\$13 billion in 19 industrial, tourism, mining and energy projects over the next five years. The details of these projects are unknown, but they are said to include a cement factory, a car factory and hydroelectric dams, including a US\$300 million investment in the Moamba Major dam to supply Maputo. Being largely project-based and negotiated at the highest levels of public administration (AFRODAD 2007), Chinese ODA appears to be poorly aligned with some of the recent thinking on governance in international development finance (Box 1).

## Zambia

Chinese ODA to Zambia has mainly been in the areas of agriculture, mining, manufacturing, construction, communications, transport and health (AFRODAD 2008). An analysis of historical statistics on aid cooperation points to a growing reliance on loans over grants in ODA (Figure 2). The uncertain composition of the category 'economic and technical cooperation' suggests that the proportion of loans could be much larger than this figure suggests.

Data on large projects financed in the past few years by Chinese ODA to Zambia – including a national grain storage system, a national stadium, mobile

### Box 1. Trends in overseas development assistance 'good practice'

Traditional aid to developing countries originated in the form of projects financed and managed by specific donors, with funding bypassing government coffers and accountability mechanisms. In the 1990s, this approach began to draw criticism for advancing donor rather than host country priorities, for leading to inefficient use of funds and for undermining recipient government authority, capacity and accountability. The international community began calling for a shift towards budget support mechanisms to avoid such pitfalls and to tie funding to established policy priorities. Budget support may be provided through general budget support or sector budget support, known as the 'Sector-Wide Approach'. In the second case, funds are earmarked for a specific sector or budget line (e.g. health, education) and thus tied to sector-specific policies.

Another distinction is that between grants and loans, each of which may characterise either budget or project support. While grants were once considered superior to loans as they were provided for free, it is now recognised that grants may also carry drawbacks in the form of reduced aid to the poorest countries, reduced domestic revenue, lower incentives for fiscal discipline, enhanced susceptibility to foreign shocks and donor conditionalities.<sup>b</sup>

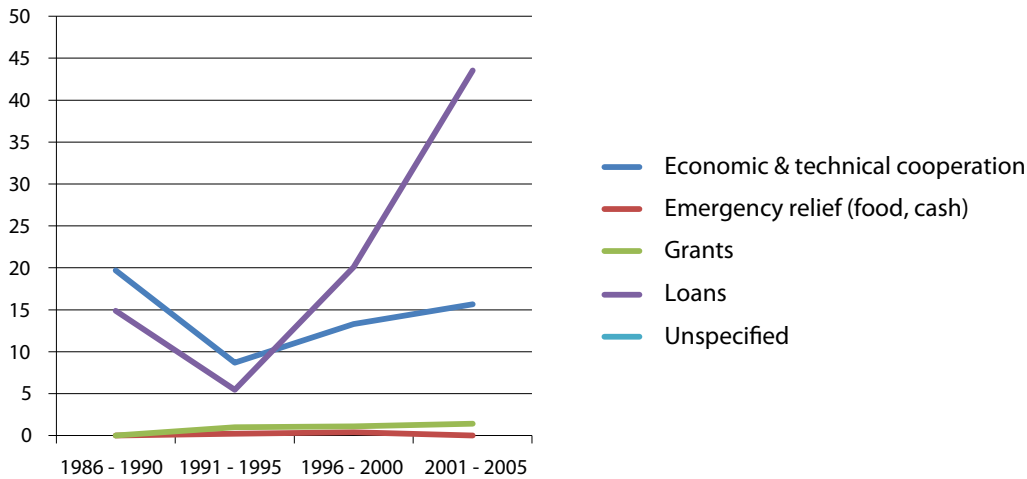
a See DfID (2006), Lawson *et al.* (2002), 'Sector-Wide Approaches (SWAs)' (available at: <http://www.who.int/trade/glossary/story081/en/>; 31 January 2011).

b See Gupta *et al.* (2003), OECD (2007).

clinics, improvements in the TAZARA Railway and the renovation of government buildings – suggest that, as for Mozambique, loans – both interest-free and concessional – are the preferred form of cooperation. This supports the observation by many that Chinese development policies are moving away from aid and towards 'win-win' economic cooperation of a largely commercial character (AFRODAD 2008).

Project-based finance also appears to be the preferred mode of support by the Chinese government to Zambia. According to one authority at the Ministry of Finance and National Planning, 'project loans are where conditions kick in'. A key conditionality of this tied aid seems to be the need to contract Chinese

10 Also corroborated via CIFOR interview with staff of the Chinese Embassy in Maputo, 26 November 2010.



**Figure 2. Evolution of Chinese ODA to Zambia, 1986–2006 (million US\$)**

Source: AFRODAD 2007, Muneku and Koyi (2007)

firms. For construction projects, for example, the Chinese government launches tenders in China exclusively for Chinese companies. According to Miao Yang of the Chinese Embassy in Lusaka, ‘through aid, Chinese companies get to know better the business environment of Zambia. Some people seize the opportunity and come back to Zambia as investors.’ Even in projects financed through the Joint Assistance Strategy for Zambia, a donor mechanism to coordinate ODA and align it with national development priorities, Chinese companies have come to compete with Zambian companies because of export credits from China, particularly in the roads sector. Thus, in addition to the public treasury being responsible for servicing the interest on loans, sizeable amounts of public finance (in the form of payments on principal) are effectively channelled to Chinese companies. Furthermore, there is a widespread perception that those companies winning contracts bring most of the required materials and human resources from China, which if proven to be true would further undermine positive economic spillovers for the host country. While the ability of Chinese firms to provide good value for money offers obvious benefits to host countries, the role of the Chinese government in enhancing the competitiveness of Chinese firms raises concerns about public debt and environmental sustainability (Box 2).

### Zimbabwe

China’s diplomatic relations with Zimbabwe date back to the liberation struggle of the 1970s; as part of more widespread efforts by the Communist

bloc to promote Communist-style ‘people’s wars’ against the colonialists’ global hegemony, China extended a political hand of support to ZANU (Youde 2007). Diplomatic relations between the two countries solidified when Mugabe took control of the government in 1980. However, Chinese support ‘cooled’ as the Zimbabwean government drew support from mostly Western donors during the early years of independence.

The relationship between China and Zimbabwe picked up following Zimbabwe’s fast-track land reforms in the early 2000s. As Western governments and multilateral institutions started to shun Zimbabwe, Mugabe increasingly turned to the East to make up for its shortfalls (Youde 2007, Brown and Sriram 2008). China concretised this relationship by providing military support when Zimbabwe was under an arms embargo.<sup>11</sup> In 2003, Zimbabwe officially declared its ‘Look East Policy’, further cementing this shift. The underlying objectives of the policy are both economic and political: to attract much needed investment, and for Zimbabwe to portray itself as a defender of independence and

<sup>11</sup> In 2000, two small arms deals were concluded, one in exchange for 8 tonnes of ivory and one for US\$65.9 million (Nuclear Threat Initiative 2004, Taylor 2008). In 2004, China sold to Zimbabwe US\$240 million worth of weapons, including 12 fighter planes and 100 military vehicles (Taylor 2008). Between 2005 and 2007, China supplied Zimbabwe with at least US\$28 million worth of conventional arms (Brautigam 2009) and, perhaps mostly controversially, just before the elections in 2008 a large shipment of ammunition (Michel and Beuret 2009).

**Box 2. Export credit agencies and the competitiveness of Chinese firms** (from German and Wertz-Kanounnikoff in prep)

With most donor countries having one or more export credit agencies, state backing to the private sector is not unique to China. However, several OECD instruments regulate the activities of publicly financed export credit agencies (ECAs) in OECD member states which provide export financing (credits or credit insurance and guarantees) to underwrite the activities of firms operating abroad. Since 1978, the OECD Arrangement on Officially Supported Export Credits has placed 'limitations on the terms and conditions of officially supported export credits (e.g. minimum interest rates, risk fees and maximum repayment terms) and the provision of tied aid'.<sup>a</sup> The Arrangement aims to prevent countries from competing to offer the most favourable terms of finance to exporters competing for overseas sales.<sup>b</sup> Principles and Guidelines to promote sustainable lending practices in the provision of official export credits to low-income countries are also part of World Bank and IMF efforts to help countries achieve their Millennium Development Goals (MDGs) without creating future debt problems.<sup>c</sup> The so-called 'Common Approaches', brokered in December 2003, also attempt to benchmark the environmental policies of ECAs in OECD member states against those of the World Bank Group and regional development banks to minimise environmental costs associated with ECA-backed projects.<sup>d</sup> Participants in the Arrangement include Australia, Canada, the European Community, Japan, the Republic of Korea, New Zealand, Norway, Switzerland and the United States.

The importance of such finance should not be underestimated. ECAs represent the largest class of public finance institutions operating internationally, exceeding in size the World Bank Group and funding more private sector projects in the developing world than any other class of financial institution.<sup>e</sup> Current estimates suggest that ECAs finance or underwrite about US\$430 billion of business activity abroad (approximately \$55 billion to project finance in developing countries and \$14 billion of insurance for new FDI), dwarfing all other official sources of finance combined.<sup>f</sup> And while accounting for the largest component of developing country debt (over 25%), they have limited accountability to national development priorities.

This unbalanced playing field makes it much easier for non-signatory countries such as China, India and Brazil to offer linked and concessional loans.<sup>g</sup> It also raises risks of future indebtedness among developing country economies, as the tendency to focus on availability of financing will undermine quality and price considerations, with concessionality levels or risk often passed on to taxpayers. China is also not a party to donor coordination mechanisms in Mozambique and Zambia. As such, its assistance is not subject to alignment with poverty reduction strategies, harmonisation initiatives, accountability standards or peer review mechanisms.<sup>h</sup> It is possible that this uneven policy landscape for ECAs underlies the observed decline in interest by OECD countries in financing large infrastructure projects, and the ability of the Chinese government and firms to fill this gap.

a See [http://www.oecd.org/about/0,3347,en\\_2649\\_34171\\_1\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/about/0,3347,en_2649_34171_1_1_1_1_1,00.html) (2 February 2011)

b See [http://www.oecd.org/document/29/0,3746,en\\_2649\\_34171\\_1830173\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/29/0,3746,en_2649_34171_1830173_1_1_1_1,00.html) (2 February 2011)

c Available at [http://www.oecd.org/department/0,3355,en\\_2649\\_34179\\_1\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/department/0,3355,en_2649_34179_1_1_1_1_1,00.html) (2 February 2011)

d See [http://www.eca-watch.org/eca/ecas\\_explained.html](http://www.eca-watch.org/eca/ecas_explained.html) (4 February 2011)

e See <http://www.eca-watch.org/eca/> (4 February 2011)

f Including from the World Bank, regional development banks, bilateral and multilateral aid ([http://en.wikipedia.org/wiki/Export\\_credit\\_agency](http://en.wikipedia.org/wiki/Export_credit_agency))

g CIFOR interview with the Head of Cooperation of an OECD member country, 3 November 2010

h AFRODAD 2007

sovereignty. In 2004, the Chinese government expressed support for the land reforms and advocated for non-interference by other development partners (AFP 2004). During the 2008 elections, China and Russia vetoed a UN Security Council resolution that sought to impose fresh sanctions on Mugabe and other ZANU-PF leaders (BBC 2008).

Although China was a major importer of Zimbabwe's tobacco in the 1980s and 1990s, tangible Chinese contributions to Zimbabwe through bilateral support or investments have been limited. Chinese grants to Zimbabwe, mostly in the form of humanitarian aid, consisted of approximately US\$28 million between 1992 and 2007. Considering that Zimbabwe

received in aggregate almost US\$3.3 billion over that period, Chinese aid to Zimbabwe can be considered negligible. Thus, despite the strength of the diplomatic relationship between the two countries, Chinese ODA has been limited. There is evidence to suggest that this is due to Zimbabwe's limited capacity to repay and guarantee Chinese loans. According to a World Bank report (2008), loans to Zimbabwe are on substantially 'harder' or less concessional terms than those to any other African country, with a grant element of less than 10%. According to AFRODAD (2007), citing data from the Ministry of Finance, by 2007 the Zimbabwean government had accumulated US\$247 million in arrears from loans it owed to China. According to key government sources from the Reserve Bank of Zimbabwe (RBZ) and the Ministry of Foreign Affairs, Zimbabwe has been attempting for years to negotiate major loans for budgetary support with the Chinese government, but with limited success.<sup>12</sup> While the country did manage to secure a US\$200 million export credit facility for farm equipment from the Eximbank in 2007 in support of Zimbabwe's Agricultural Mechanisation Programme, the government was required to put down some of its richest platinum reserves as collateral (Sutton 2010). In 2007, China extended another credit line for US\$58 million worth of agricultural machinery, to be repaid in tobacco exports (Edinger and Burke 2008). During the eighth session of the China–Zimbabwe Joint Commission in 2010, a number of bilateral agreements were proposed. In early 2011, the China Development Bank was said to be considering investing US\$10 billion in the Zimbabwean mining, agricultural and energy sectors (Banya 2011). The Zimbabwean government is also debating whether to sign a US\$3 billion financing facility offered by China's Eximbank, targeting the agricultural and fertiliser-manufacturing sectors, in exchange for the rights to some of its platinum deposits (Muleya 2011).

From a regional perspective, one can see a clear preference for loans over aid in Chinese development assistance. Where risk of repayment is limited, these loans may be on highly concessional terms.

12 For example, multiple visits were reportedly made to China to negotiate a US\$5 billion loan agreement. However, the agreement never materialised since China offered the loan facility on exclusively commercial (e.g. non-concessional) terms. When Mugabe travelled to Beijing in 2005 to request assistance to deal with the country's foreign exchange shortfall and fuel shortage, he received only US\$6 million for grain imports (Ploch 2008).

Yet there is also evidence that Chinese financiers are willing to negotiate in uncertain environments in exchange for resource access or resource-backed collateral. It is unclear to what extent levels of finance, type of project or concessionality of loans are also used as mechanisms to secure access to raw materials. Many of these loans are tied, conditional upon the contracting of Chinese firms. As for the alignment of aid with official policies and aid delivery mechanisms, the tendency to prefer project-based support undermines national and global efforts to align ODA with national development priorities and to better track donor investments. In both Zambia and Mozambique, the Chinese Embassy was not seen by other (predominantly European) embassies as an active participant in donor coordination mechanisms. Furthermore, with both grants and loans tending to be conditional and limited public disclosure of the terms of agreement, the ability to ensure that Chinese aid is aligned with official policies and development priorities is compromised (AFRODAD 2008).

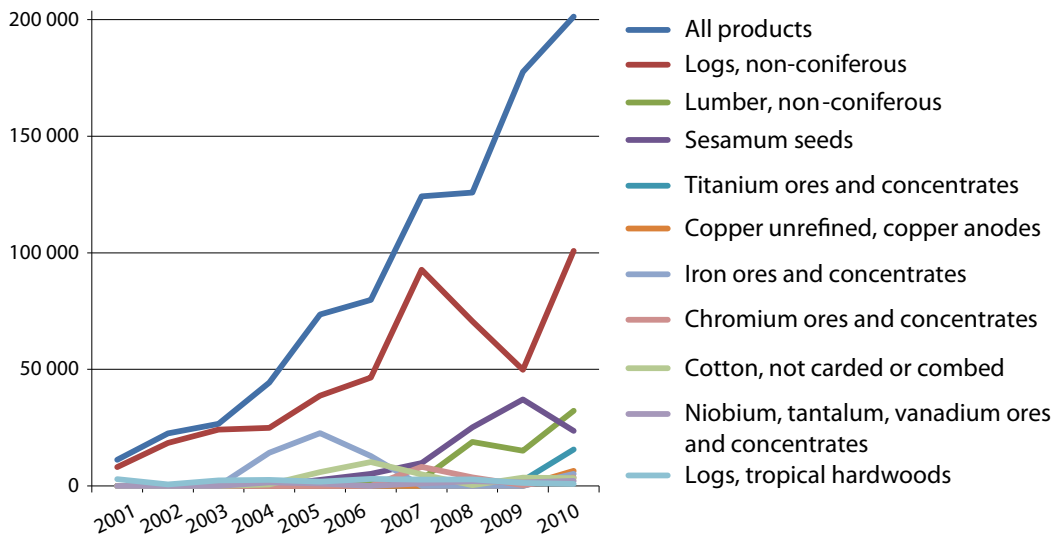
### 5.2.2 Trade

The Chinese government and the governments in the three focal countries have all actively pursued bilateral trade. Although the contribution of the focal countries to Chinese imports is relatively minor, China represents an important trade destination for regional exports. This section reports on the bilateral trade situation for each of the three countries studied.

#### Mozambique

Bilateral trade between Mozambique and China has seen a sharp and steady increase during the past decade for most products. Mozambican imports from China are dominated by manufactured goods (vehicles and parts, electrical appliances, iron and steel items), while Chinese imports from Mozambique consist primarily of logs, sesamum and lumber, followed by smaller shares of various ores and concentrates (Figure 3).

The strong and growing composition of unprocessed logs relative to processed lumber is particularly noteworthy, given the requirement stipulated in the 1999 Forests and Wildlife Law that concessionaires process timber prior to export, and the 2002 regulations making log exports for many of the most sought-after species illegal. The export of unprocessed logs to China has been the subject of growing civil society concern and several research reports suggest that it is unsustainable (Mackenzie 2006, Mackenzie and Ribeiro 2009, Ribeiro and Nhabanga 2009). The



**Figure 3. Top 10 Mozambican exports to China by value, 2001–2010 (thousand US\$)**

Source: UN Comtrade

sharp decline in log exports in 2007 is presumably related to a regulation that came into effect in June 2007 requiring most exporters to export sawn timber. However, as evidenced by the less significant rise in lumber exports and the rapid increase in numbers of unprocessed logs in 2010, many exporters simply stored their logs rather than investing in processing. This dynamic is explored in greater detail in the forestry sector overview below.

### Zambia

Zambian exports to China increased sharply in recent years, from just US\$47.8 million in 2003 to US\$2.5 billion in 2010. In 2009, China overtook South Africa as Zambia's second largest export market, following Switzerland (which accounts for nearly half of Zambia's total export earnings). With approximately 94% of Zambia's export earnings from China derived from copper products, China's trade relations with Zambia are defined almost exclusively by mineral exports (Figure 4). This mirrors wider patterns in Zambian exports; prior to and since independence, Zambia has been highly dependent on copper for its foreign exchange earnings. Although of less significance in terms of export value, other major products exported to China include cobalt (2.3%), tobacco (1.1%) and, since 2010, manganese and nickel (0.9% each).

### Zimbabwe

With the exception of 2010, Zimbabwean exports to China have not experienced the strong trends in growth seen for Mozambique and Zambia (Figure 5).

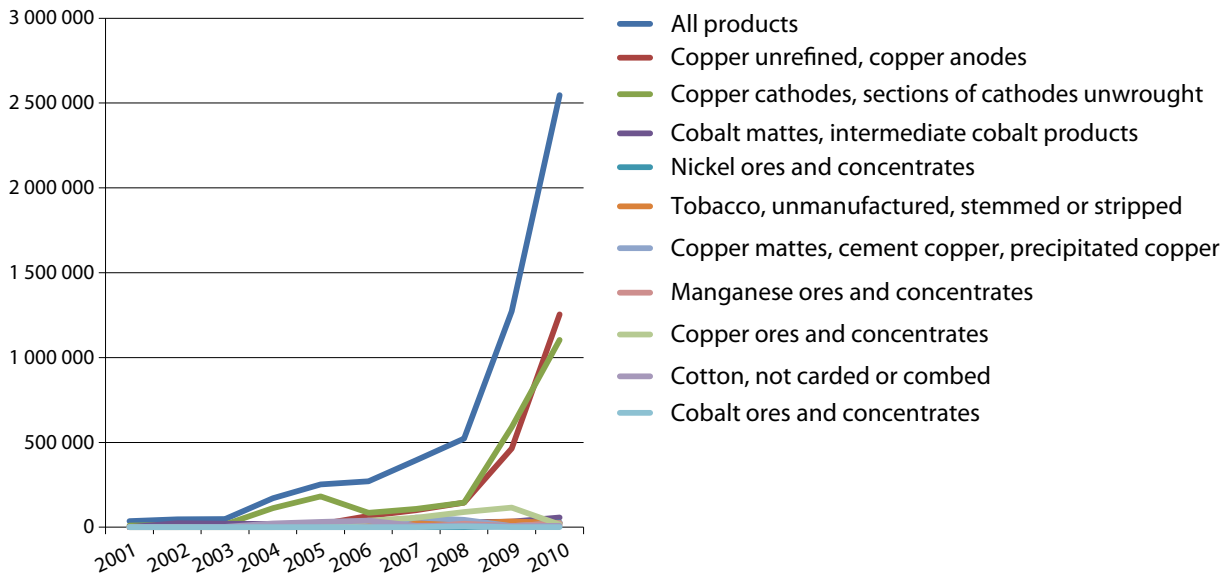
Nevertheless, China remains an important export market for the country, with the proportion of total exports to China ranging from 2% to 18% in recent years. The strong increase in the value of exports in 2010 is attributed almost exclusively to chromium products.

The strongest dependency on the Chinese market is evident in the tobacco, cotton and chrome (chromium ore and ferrochrome) sectors. Tobacco exports to China have been particularly important. Between 2001 and 2010, on average 46% of Zimbabwean tobacco exports went to China, constituting approximately 76% of all foreign exchange earned from China over that period.

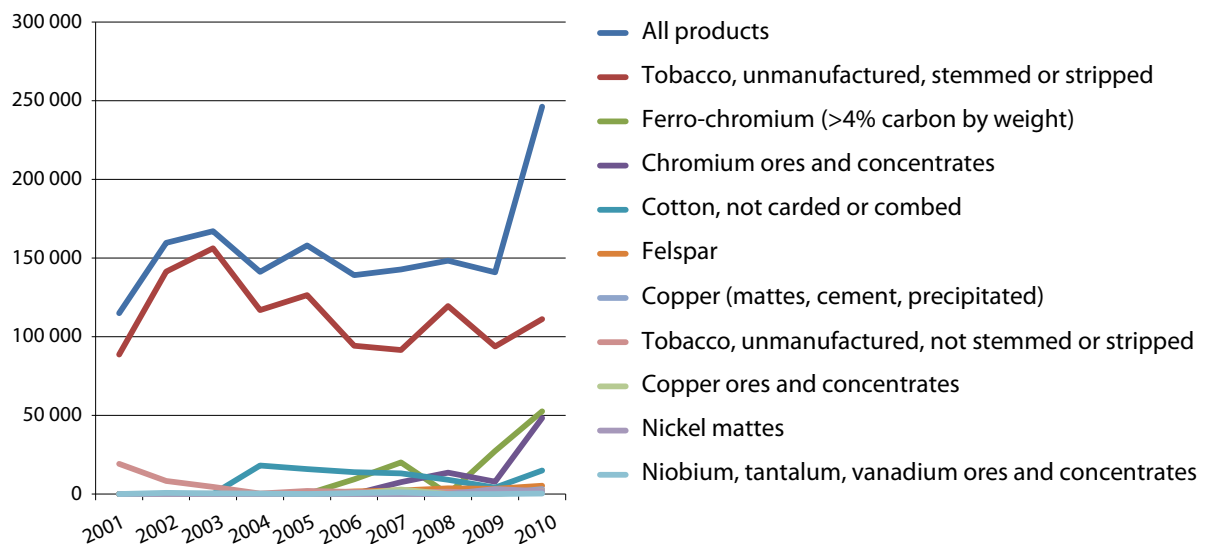
To summarise, from a regional perspective, Sino-African trade is highly variable, with the timber sector (predominantly unprocessed logs) dominating exports from Mozambique, mining (predominantly copper) dominating exports from Zambia and agriculture (predominantly tobacco) dominating exports from Zimbabwe. In each case, trade has been dominated by a single commodity, with limited trade diversification observed in Mozambique (all sectors) and Zimbabwe (in the mining sector, focused almost exclusively on chromium products).

### 5.2.3 Investment

The governments of most emerging economies now encourage local enterprises to 'go global' (WIR 2008). They are playing an increasingly



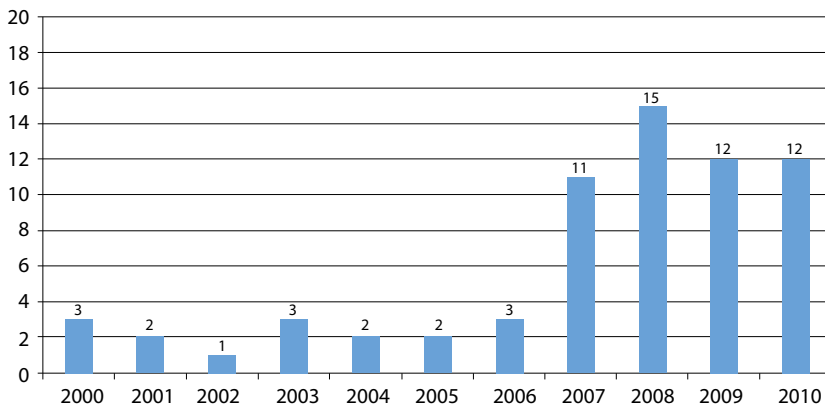
**Figure 4. Top 10 Zambian exports to China by value, 2001–2010 (thousand US\$)**  
Source: UN Comtrade



**Figure 5. Top 10 Zimbabwean exports to China by value, 2001–2010 (thousand US\$)**  
Source: UN Comtrade

active role in leveraging financial and non-financial support to emerging market firms ‘in the process of global competition wherein these businesses suffer from late-mover disadvantages, shortfalls in distinctive capabilities, and liabilities of newness and foreignness’ (Luo *et al.* 2010: 2). Chinese private investment in Africa has been stimulated by China’s ‘Going Out’ or ‘Going Global’ strategy, an initiative launched in 1999 to promote Chinese investments abroad in the context of China’s wider geopolitical

ambitions (Friedberg 2006). Subsequent initiatives under this wider policy framework have helped to solidify the presence of Chinese firms abroad. For example, the Chinese Wealth Fund was established in 2007 by the Chinese Investment Cooperation (a quasi-governmental investment firm) to invest a portion of China’s foreign exchange reserves in supporting enterprises investing abroad. Funded with an initial capital of US\$200 billion, the Fund channels public finance to Chinese firms in the form



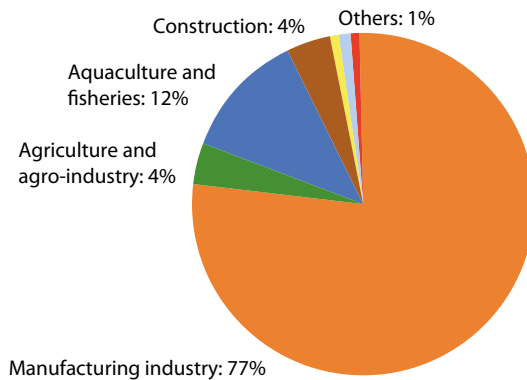
**Figure 6. Chinese FDI projects (all sectors, except mining) in Mozambique, January 2000 to September 2010**

Source: Calculations based on official CPI data

of credit funds and credit insurance. This section provides an overview of the current situation related to Chinese FDI in each of the three focal countries.

### Mozambique

Based on official statistics from the Mozambican Investment Promotion Centre (CPI), which includes all sectors except mining, Chinese FDI increased sharply in the late-2000s, reaching a peak in 2008 (Figure 6).<sup>13</sup> Sixty-six Chinese investments worth a total of US\$216 million were registered with the CPI between 2000 and 2010.<sup>14</sup> Most of these investments – in terms of both project numbers (66%) and levels of investment capital – are concentrated in the manufacturing sector (worth US\$166 million), and correspond to 77% of all Chinese investment capital registered between 2000 and 2010 (Figure 7). The bulk of investments are registered in Maputo Province, with the forest-rich northern provinces (Cabo Delgado, Niassa, Nampula) accounting for only 1.29% of total Chinese FDI during the same time period. The latter is oriented primarily towards the agro-industrial sector (e.g. jatropha cultivation and timber processing). These investment volumes are interesting, given the statement by officials of the Mozambican investment agency that most Chinese investors are interested in the



**Figure 7. Chinese FDI capital by sectors (except mining), January 2000 to September 2010**

Source: Calculations based on official CPI data

forestry sector. Thus, low investment flows to forestry in financial terms should not be taken as indicative of limited involvement in the sector, particularly given the relatively low investments required to engage in the timber industry and the tendency among many ethnic Chinese operators to work as traders rather than concession managers, linking up with Mozambican timber licence holders.

According to officials at the Chinese Embassy in Maputo, the key sectors of Chinese interest are mining (coal, titan), technology, agriculture (rice) and trade.<sup>15</sup> The apparent contradictions between this statement and the above data are likely to reflect new trends in Chinese FDI, with a number of new investors showing interest in the mining and agricultural sectors

<sup>13</sup> Foreign investors in Mozambique must come with a minimum investment of US\$50 000 of their own investment capital. While investors are not required to register with the investment promotion agency, most do in order to access to the generous incentives provided through them. However, these statistics miss many small-scale Chinese traders (AFRODAD 2007).

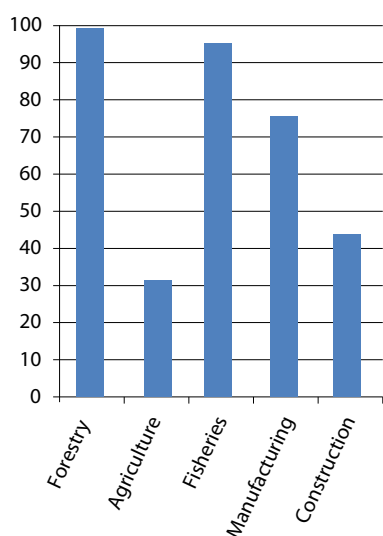
<sup>14</sup> Note that the CPI data only report 'registered' projects, which is different from the number of projects that are actually 'implemented'. Currently, there is no systematic monitoring of project implementation in Mozambique, making it impossible to report these figures (CIFOR interview with Maputo-based CPI employee, 5 November 2010).

<sup>15</sup> CIFOR interview with staff of the Chinese Embassy in Lusaka, 26 November 2010.



in response to active investment promotion efforts by the Ministry of Mines and the Center for Agricultural Promotion (CEPAGRI). These sector-specific trends are reported in following sections.

Efforts to estimate the proportion of Chinese capital within investments involving Chinese investors suggest that Chinese capital is far more dominant in the



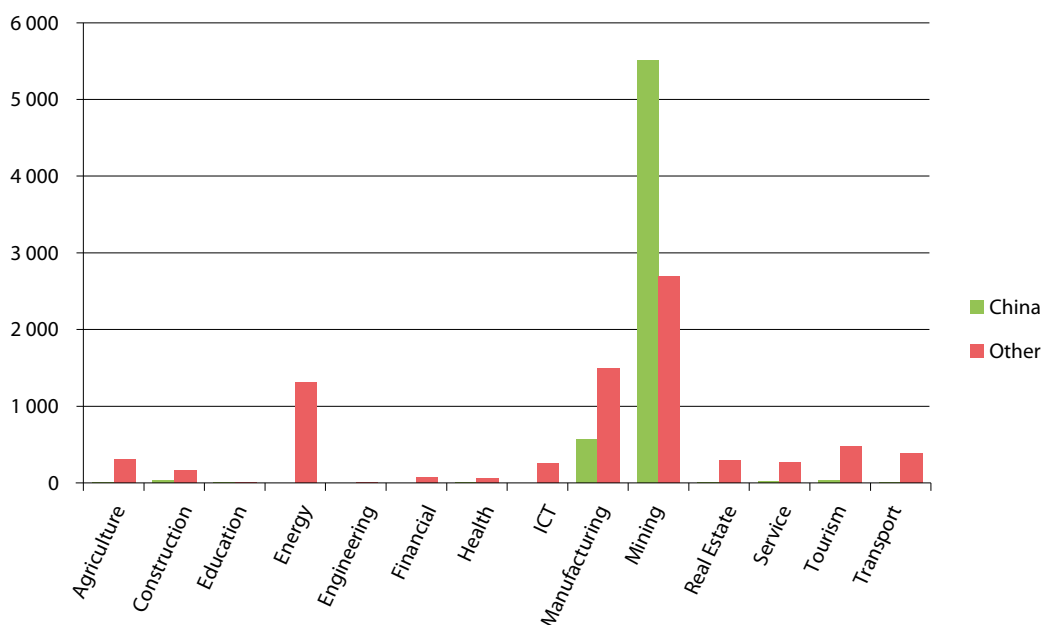
**Figure 8. Dominance of Chinese capital in investments involving Chinese investors, by sector, January 2000 to September 2010**

Source: Calculations based on official CPI data

forestry sector than in most other sectors (Figure 8). However, these statistics capture only three Chinese investments in the 2000–2010 period, suggesting that much of the activity has not been captured by official investment statistics.

### Zambia

In the past decade, Chinese FDI in Zambia has become significant for both countries. Not only did Chinese FDI stock in Zambia reach slightly more than 9% of the total US\$9.50 billion (MOFCOM 2010, UNCTADstat), but Zambia has also become China's third most important FDI destination in Africa and its largest 'non-oil' FDI destination (Bastholm and Kragelund 2009). China's direct economic participation, as demonstrated by FDI *pledged*, has ranged from US\$8.8 million in 2001 to US\$5.47 billion in 2008. The 2008 data, however, present a slightly skewed picture, as they are strongly influenced by a single Chinese mining company that committed to investing US\$5.3 billion in Zambia (discussed in more detail in the following section). Nevertheless, an upwards trend is clearly discernible, with annual FDI pledges typically ranging between US\$10 million to US\$20 million in the first half of the decade, and between US\$100 million to US\$250 million during the second half. Of the total FDI pledges of US\$13.99 billion in the 2000–2009 period, US\$6.19 billion (44%) was committed by China (Figure 9).



**Figure 9. FDI pledges by sector, 2000–2009 (million US\$)**

Source: Official data of the Zambia Development Agency

As illustrated by the above figure, Chinese investments in Zambia are highly concentrated, with 98% of Chinese FDI value in this period targeting the mining and manufacturing sectors. However, when discounting the single US\$5.3 billion mining investment, the proportion of total Chinese FDI targeting these sectors drops to 87%: 63% in manufacturing and 24% in mining. That said, all the major investments classified by the Zambia Development Agency as ‘manufacturing’ are oriented towards mineral processing, suggesting a heavily skewed sectoral orientation of Chinese FDI to the mining industry. While these investment trends run counter to Zambia’s declared interest in economic diversification away from an economy heavily dominated by the mining industry, they have nevertheless played a crucial role in stabilising Zambia’s economy and mining-related employment during periods of economic recession.

### Zimbabwe

In 2008, Chinese FDI stock in Zimbabwe reached US\$60.1 million, representing less than 4% of Zimbabwe’s total FDI stock of US\$1.5 billion (MOFCOM 2009, UNCTADstat). In addition to the relatively limited share of total FDI stock, growth in Chinese FDI has been much slower than for neighbouring countries, with an increase of just over 1 percentage point since 2003. Total Chinese FDI stock in Zimbabwe is nevertheless significantly

greater than for neighbouring Tanzania and Mozambique (Figure 10).

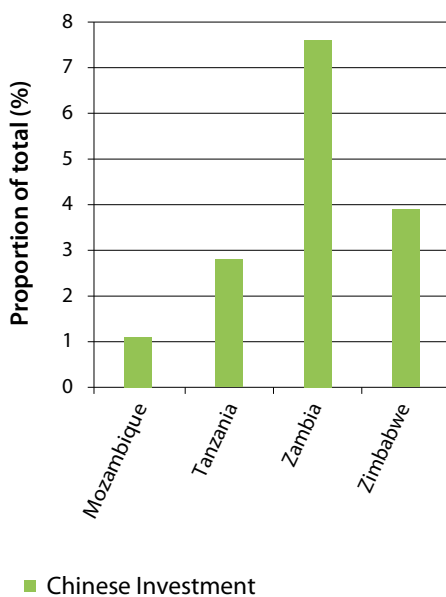
### 5.2.4 Chinese engagement in the sectors of interest

This section presents findings related to the Chinese presence in the three priority sectors: agriculture, forestry and mining. Table 6 presents an overview of Chinese involvement in these sectors based on trade and investment data and in-country scoping. For each sector, the bulk of the analysis focuses on those countries and commodities where a significant involvement of Chinese firms or markets was found.

#### Agriculture

Unlike Zimbabwe, where large farms owned and managed by white settlers have long been a feature of rural landscapes, industrial-scale farms in Mozambique and Zambia have been the rare exception to the rule until very recently. While this is particularly true in Mozambique, where the war constrained foreign investment for many years,<sup>16</sup> until very recently industrial-scale agriculture in Zambia was also characterised by only a few large-scale farms dating back to the colonial period.<sup>17</sup> Yet with the recent exodus of white farmers from Zimbabwe, most agricultural producers and production in all three countries continue to operate on a small scale. However, this is rapidly changing as white Zimbabwean farmers seek investments in neighbouring countries, several countries embark on large agricultural modernisation schemes, and investment promotion authorities seek to attract foreign investors into the sector through fiscal incentives and support services.

Chinese investments in the agricultural sector tend to be diverse, consisting of state and private sector initiatives oriented towards both domestic and export markets. In Zambia, by 2008, 15 farms were being operated by six different Chinese state-owned enterprises covering an estimated 10 000 ha (Freeman *et al.* 2008). These include two farms run by the China State Farm Agribusiness Corporation (CSFAC): the China–Zambia Friendship Farm,



**Figure 10. Chinese FDI stocks in forest-rich countries of southern Africa, 2008**

Source: Compiled from the Ministry of Commerce of the People’s Republic of China (2009); UNCTADstat

<sup>16</sup> The Mozambican agricultural sector continues to be dominated by traditional commodities grown primarily for domestic consumption (maize, cassava, millet and rice) and export (sugar, cashews, cotton, tea).

<sup>17</sup> These include a large farm in Mpongwe (Copperbelt Province) focused on cereal crop production, an industrial-scale sugar state in Southern Province and a large tea estate in northern Zambia which is no longer operational.

**Table 6. Sectors and commodities with a significant Chinese corporate or market presence**

Sector	Mozambique	Zambia	Zimbabwe
Agriculture	Very limited investment in production Primary involvement in trade in sesamum Several new investments in jatropha	Investment in production restricted to cotton and recent land acquisitions for jatropha China recently became the top importer of Zambian tobacco, the country's second most important non-mining export commodity	Extensive involvement in Zimbabwe's most important agricultural export sectors (tobacco and cotton), largely through contract farming schemes managed by Chinese firms
Forestry	Limited investment in concessions and processing until recently Major role in trade, with a focus on unprocessed timber	Formally a minor player, but significant presence in Western Province (holding 2 out of 12 concession licences and providing forward-financing to pit-saw operators)	No evidence of participation of Chinese firms or other foreign enterprises in the forestry sector
Mining	Very limited formal presence until recently State-owned enterprise recently purchased 40% share in major coal project Recent surge in prospecting licences Anecdotal evidence of illegal gemstone trade	Major player in copper production, processing and trade (the mainstay of the Zambian economy)	Largest player in chromite ore mining and processing Extensive involvement in alluvial diamond mining Recent agreements signed for platinum, nickel and copper mining

which cultivates barley, maize and soybeans on 667 ha for the domestic market, and Jhonken Friendship Farm, one of China's largest farms in Africa with 3500 ha (Freeman *et al.* 2008, Bastholm and Kragelund 2009, Spring 2009). With all the farms reportedly supplying the domestic market, some argue that Chinese investments in areas where Zambians have ample capacity only displaces Zambian-owned producers (Hare 2007, McGreal 2007).<sup>18</sup> In Mozambique, the Chinese government has donated an agricultural technology demonstration centre worth US\$55 million and 12% of registered Chinese investments from 2000 to 2010 are in the agricultural sector, primarily in poultry, rice and jatropha (Ilhéu 2010, official CPI data). This section focuses on those commodities featuring most prominently in Chinese trade and investment in the sector. These include cotton and tobacco (Zambia and Zimbabwe), two of the region's traditional cash crops, and the non-traditional exports sesamum (Mozambique) and jatropha (Mozambique and Zambia).

### Cotton

Although cotton was grown predominantly by large-scale commercial farmers before independence

in southern Africa, it is now widely grown by smallholder farmers with financial and technical support from ginneries. It thus provides an important source of cash income for millions of smallholders. This factor, combined with the ability of the sector to capture increasing shares of global trade, led one source to declare cotton a 'rare economic success story' for the region, despite evidence that cotton, too, has come with some social and environmental costs (Monela *et al.* 2005, Tschirley *et al.* 2006). In Zimbabwe, concerted government efforts to integrate marginalised smallholders into the crop marketing system have enabled small-scale cotton producers to increasingly take the lead in production. In Zambia, a single state-owned company, LINTCO, dominated the cotton sector from 1977 to 1994, after which it was privatised and sold to two private companies with regional cotton interests. An outgrower model was the predominant mode of production in both phases, with forward-financing of inputs and extension and purchase at a fixed price (Tschirley and Kabwe 2010). In Mozambique, the parastatal dominating the cotton sector was liquidated in 1986 following the sector's collapse during the civil war, and was replaced with four joint-venture companies operating under a 'concession' model in Nampula Province (Boughton and Tschirley 2006). In each country, economic reforms of the sector have led to

18 CIFOR interview with ZNFU, November 2010.

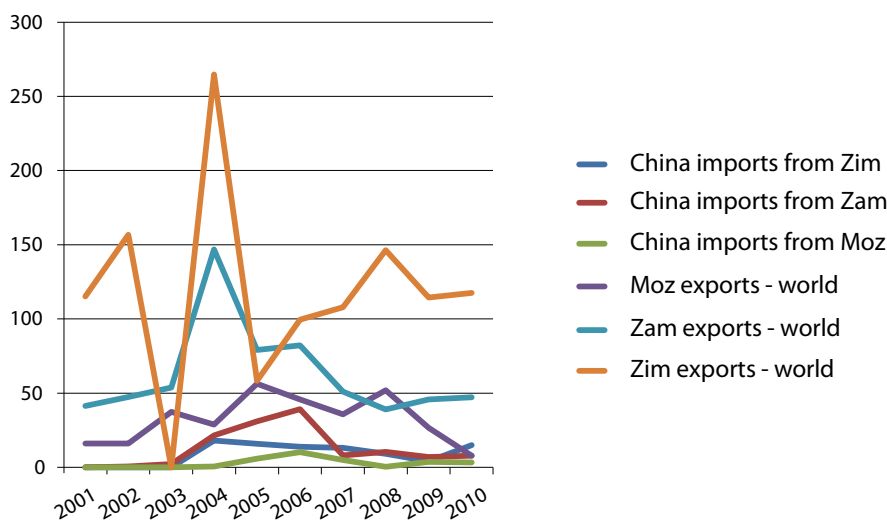
a gradual shift from a small number of companies dominating cotton processing and marketing to greater diversification. While giving farmers greater marketing options, the rampant side-selling and credit default that have resulted have contributed to a high level of instability in the industry (Tschirley and Kabwe 2010). All three countries are struggling with how to regulate the sector to create ‘rules of the game’ with which all actors must comply.

Although China’s demand for the region’s cotton has in the past been modest (Figure 11), Chinese firms have had a defining role in the Zimbabwean cotton sector and, until 2006, China accounted for a sizeable portion of Zambian exports and cotton remained the third Mozambican export to China by value. China’s growing presence in the sector is driven by production deficits in China and China’s increasingly restricted access to the cotton markets of traditional suppliers. In April 2010, for instance, India adopted a number of measures to meet the rising demand for cotton from its own textile sector, thereby becoming a less reliable supplier to China (NCC 2010). In large part due to the poor cotton harvest in China resulting from the 2010 floods, the cotton price reached a 150 year high in 2011 as China sought to meet its domestic production deficit (Cancryn and Cui 2010, Cotlook 2011).

The Chinese government and private firms have been involved in Zambia’s cotton and textiles industry for a number of years. In 2003, Qindao Textile Holdings Group established the Chipata Cotton

Company, which was operating two ginneries by 2006 supplied by 40 000 contracted cotton farmers (Chipata Cotton Company 2011). Qindao Textile’s involvement in the Zambian cotton sector began in 1997 when it began operating the Zambia–China Mulungushi Textile Joint Venture (ZCMT) in Kabwe with the financial support of the Chinese government. The textile factory was constructed by the Chinese government in 1983 and rose to become the largest textile company in Zambia, but then closed operations in 1994 in the face of increasing competitive pressures from cheaper Asian textiles, laying off nearly 1000 workers in the process (People Daily 2003). Despite significant investments by Qindao Textiles to revitalise the factory and efforts to develop its complex into an export-oriented industrial park, in 2007 the factory once again closed its doors because of low profitability (Carmody 2009, Kapekele 2010). In addition to layoffs, the factory’s closure contributed to the downfall of the Chipata Cotton Company, which was supplying the factory with inputs. Because the Chipata Cotton Company exported all its excess cotton to China, its closure also caused the China–Zambia cotton trade to dry up.

In the case of Zimbabwe, the involvement of Chinese firms in the sector has been very recent and politically turbulent. In 2009, the government issued Statutory Instrument 142 requiring ginners to enter into annual contract agreements with producers (and to pre-finance all cotton they purchase), as a means of reining in endemic side-selling by cotton growers. In the 2009/2010 season, cotton contractors resisted



**Figure 11. Cotton exports to China and to world, by value (million US\$)**

Source: UN Comtrade

what they saw as an unjust seasonal pool price of US\$0.30 per kg being offered by cotton merchants, which caused large numbers of farmers to withhold their crop. Two Chinese firms, Sino-Zimbabwe Holdings and Sinotex United Corporation, entered the market during this stand-off by buying cotton from farmers contracted to other ginners at prices of up to US\$0.50 per kg (Goko 2010). Sino-Zimbabwe Holdings was particularly active, setting up large numbers of buying points across the country and acquiring approximately 9% of the annual harvest. While this contravened the legal provisions of Statutory Instrument 142, efforts by the Cotton Ginners' Association (CGA) to take the case to the High Court and to Mugabe himself met with limited success because of purported concerns over public support to ZANU-PF and the strategic nature of Sino-Zimbabwean relations. Sino-Zimbabwe Holdings has since become a registered ginner and CGA member (CGA 2010), registering 180 000 farmers – almost 14% of the rural population. Both Sino-Zimbabwe Holdings and Sinotex United Corporation appear to be involved in Zimbabwean politics, with the ZANU-PF militia reportedly demanding that farmers wishing to be contracted by Sino-Zimbabwe Holdings acquire party membership cards and Sinotex United signing a cotton export agreement on undisclosed terms with the Zimbabwean government (Mhizha 2010). Although the environmental impact of Chinese participation in the sector cannot be confirmed, the sheer number of farmers that Sino-Zimbabwe has registered will undoubtedly prompt a significant increase in the area of cotton under cultivation. As many farmers will be new to the sector and likely reluctant to completely abandon subsistence crops, some expansion will likely come at the expense of forests.

The extent of Chinese involvement in cotton production in Mozambique is uncertain. However, given the low volumes of cotton exports to the Chinese market and reports of farmers abandoning cotton for the burgeoning sesamum trade with China, this presence is expected to be minimal.

### Tobacco

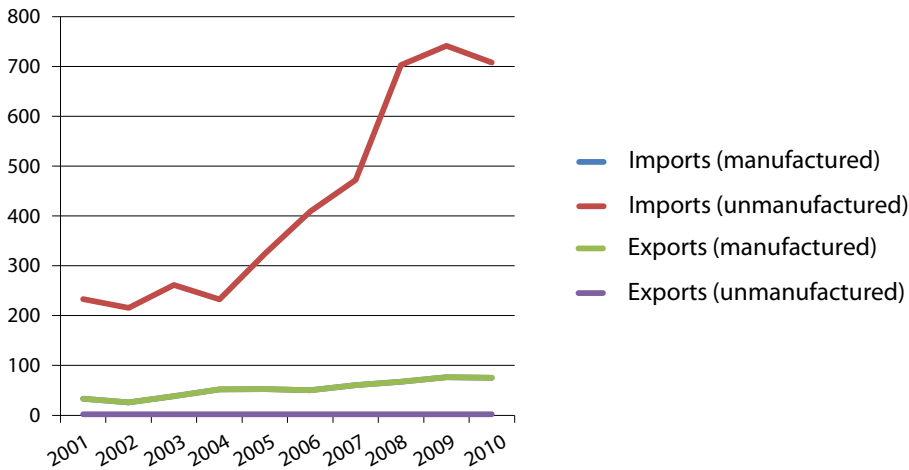
Tobacco cultivation in Rhodesia (modern day Malawi, Zambia and Zimbabwe) can be traced back to the 1890s, when pioneering efforts were made to grow different varieties of the crop on a commercial basis (Rubert 1997). Laws and policies enacted during the colonial period throughout southern Africa made commercial crop cultivation the exclusive preserve of white settlers on titled land

(Misana *et al.* 1996, Poulton *et al.* 2007, World Bank 2005). Marketing reforms enacted in Malawi in the 1980s and 1990s, and land reforms in Zimbabwe in the early 2000s, led to an influx of small-scale farmers into the sector. This has resulted in a reduction in the number of large estates and smallholders contributing to an increasing proportion of total production (Mandondo *et al.* in prep).

The relationship between tobacco expansion and processing and deforestation is well established. Tobacco is estimated to account for 5% of deforestation in Africa, and an estimated 200 000 ha of woodland is cut annually to support tobacco farming in southern Africa, accounting for 12% of deforestation in the region (Geist 1997). According to one estimate, 38% of global forest cover loss associated with tobacco is attributed to opening up new land for cultivation, 42% to fuelwood needs, 8% because farmers abandon old farms and seek new land, and the remaining 12% to meet the packaging needs of cigarettes (World Bank 1997). Tobacco may be dried through flue curing or drying, the former using approximately 4.6% more wood than the latter because of the heavy use of wood for fuel and barn construction (Mandondo *et al.* in prep).

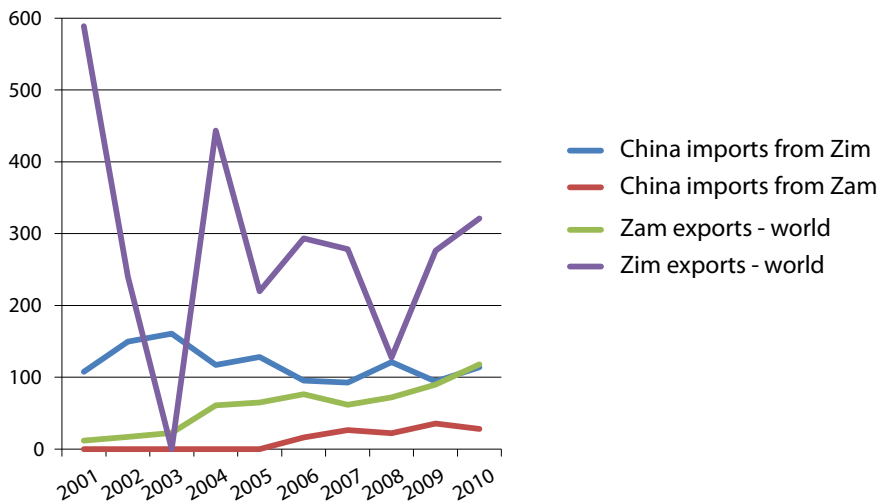
Chinese imports of unprocessed tobacco have increased dramatically in recent years (Figure 12), with the boom starting in 2004 following a reduction in import duties from 40% to 10% in response to agreed WTO guidelines (Parker 2007). Subsequent restructuring of the sector throughout the 2000s in a bid to consolidate existing companies into a few large corporations and improve product quality further stimulated both imports and the value of exports, while keeping export volumes relatively stable (Figure 12). Although it is unclear what proportion of this increase may be attributable to Western tobacco giants operating within China, access to domestic manufacturing markets remains limited because of a high level of sector regulation and a monopoly controlled by the China National Tobacco Corporation and State Tobacco Monopoly Administration (Parker 2007). Nevertheless, joint-venture manufacturing agreements have recently been established between Philip Morris and China National Tobacco Corporation (CNTC) and between UK-based tobacco manufacturers and Chinese corporations.<sup>19</sup>

<sup>19</sup> Tobacco Journal International (2008).



**Figure 12. Chinese imports and exports of manufactured and unprocessed tobacco leaf, by value, 2001–2010 (million US\$)**

Source: UN Comtrade



**Figure 13. Tobacco exports to China and to world, by value, 2001–2010 (million US\$)**

Source: UN Comtrade

Trade in tobacco between the focal countries and China has fluctuated (Figure 13<sup>20</sup>). During the past

<sup>20</sup> These data must be interpreted with caution, given the divergence between official statistics reported by exporting and importing countries. With China often reporting far higher import values than exporting countries, the above is more indicative of the relative role of the Chinese market than of export values *per se*. In the case of tobacco, Chinese import statistics reveal import values 4–31 times greater than export values reported by Zambia and 2–13 times greater than those reported by Zimbabwe in the 2001–2009 period. If Chinese import statistics can be assumed to be more accurate, Zambia's export earnings from its tobacco trade with China reached as much as US\$35.7 million (in 2009) and Zimbabwe's US\$128 million (with a peak in 2005).

decade, no exports were registered from Mozambique and only minimal exports from Zambia. After a brief discussion of Zambia, most of this section is therefore devoted to Zimbabwe, with which Chinese customs authorities have registered a relatively stable US\$100 million to \$150 million worth of tobacco imports per year over the past decade.

Tobacco is currently the only major agricultural commodity exported to China from Zambia, and China has in recent years become the largest importer of Zambian tobacco. Yet despite the prominence of this trade relationship, no evidence could be found of direct Chinese participation in production, whether through proprietary farms or contract farming. The

rapid rise in tobacco production in the 2000s is likely not a function of increasing Chinese demand, but rather of an influx of commercial white Zimbabwean farmers displaced from their land in Zimbabwe as a result of the land reforms in 2000–2003.<sup>21</sup> The growing influence of the Chinese market, which had captured 40% of Zambian exports by 2009 since trade between the two countries began in 2006, for a crop that brings high returns to smallholders is likely to be a boon to the livelihoods of the 18 000 farmers and 432 000 others whose livelihoods are in one way or another dependent on the crop (Gumbo 2010).<sup>22</sup> The steady growth in Zambian tobacco exports suggests that it is also making a positive contribution to Zambian policy objectives of economic and export diversification.

In contrast to Mozambique and Zambia, tobacco was the mainstay of the Zimbabwean economy throughout the 1980s and 1990s. The sector was historically characterised by a high concentration of large commercial farmers, and thus also by relatively intensive cultivation practices and high yields. As a consequence of the expropriation of land from white large-scale commercial farmers in the early 2000s, tobacco production plummeted, and despite increasing production in recent years, the country has been unable to restore former productivity and output levels. Tobacco merchants, previously accustomed to purchasing tobacco through Zimbabwe's auction system, slowly shifted towards contract farming in order to be able exert greater control over the quantity and quality of tobacco procured. Zimbabwean farmer associations and the Tobacco Industry and Marketing Board (TIMB) were instrumental in forging new linkages between (largely multinational) merchants and small-scale farmers. By the 2009/2010 production season, 51 700 farmers had been licensed as tobacco growers and tobacco farming was firmly driven by smallholders.

Between 2001 and 2010, on average 42% of Zimbabwean tobacco exports went to China, which constitutes approximately 76% of all foreign exchange earned from China over that period. Chinese company Tian Ze was the third largest tobacco merchant in Zimbabwe in 2010, accounting for 15% of sales after Northern Tobacco (at 22%) and Zimbabwe Leaf Tobacco (at 21%). Tian Ze

is wholly owned by the Chinese state tobacco monopoly China National Tobacco Corporation (CNTC), the largest cigarette manufacturer in the world. Tian Ze only commenced operations in the Zimbabwean market in earnest in 2007, and currently procures tobacco leaf via both contract farmers and auction floors. The company has rapidly carved out a dominant position in the market, with rapid increases in tobacco purchases from contracted growers (TIMB 2010). While most merchants typically engage small-scale farmers, Tian Ze has over the past few years shown a preference for dealing with fewer, but larger-scale, tobacco growers. In 2010, the company contracted only 150 farmers, which would imply each cultivated an average of 35 ha of tobacco (assuming productivity on par with the industry) – considerably more than the average area of 1.3 ha. Presumably, as Tian Ze is interested only in so-called 'lemon-coloured leaf tobacco' (generally preferred in China), which grows only under certain conditions, it prefers to contract farmers that have the (technical) capacity to meet its needs. According to the former Zimbabwean Ambassador to China, the company was initially not interested in investing in tobacco cultivation in Zimbabwe and the government had to provide 'appropriate incentives' to seal the deal.<sup>23</sup> In 2007, the same year that Tian Ze commenced operations, Zimbabwe entered into a tobacco barter agreement with China. China provided US\$25 million worth of agricultural machinery to replace the equipment damaged when white-owned farms were seized, in exchange for 30 million kg of tobacco. According to the Zimbabwean Ministry of Agriculture, the agreement would run for five years (Reuters 2007). Although the details of the agreement remain unclear, it is possible that Tian Ze's involvement in the sector is linked to this agreement given that Tian Ze is reportedly only planning to be active in Zimbabwe for the five-year period corresponding to the duration of the agreement.<sup>24</sup>

In another proposed tobacco barter deal, the state-owned China National Aero-Technology Import and Export Corporation (CATIC) was to provide the Zimbabwe Electricity Supply Company (ZESA) with equipment in exchange for tobacco. However, the deal fell through when ZESA failed to raise the necessary capital to finance the tobacco purchases (Brautigam 2009). The only other

21 CIFOR interview with the Zimbabwe Farmers Union (ZFU), 3 November 2010.

22 See also <http://zambianchronicle.com/?p=6655> (2 March 2011).

23 CIFOR interview with the Ministry of Foreign Affairs, 18 November 2010.

24 CIFOR interview with the Tobacco Industry and Marketing Board, 4 November 2010.



Chinese merchant that actively procures tobacco in Zimbabwe is the Hong Kong-based company Golden Driven Investments (GDI). It operates at a significantly smaller scale than Tian Ze and procures exclusively through contractors, rather than from the auction floors.

Although the two Chinese companies directly account for only 17% of total tobacco purchased in 2010, official statistics indicate that 35.4% of total tobacco production in 2010 was exported to China.<sup>25</sup> Although some merchants export independently to China, it is widely claimed that numerous merchants operating on the auction floors buy on behalf of Tian Ze. It is alleged that a certain amount of price-fixing occurs, and both sellers and buyers have complained that the buying behaviour of Tian Ze led to market imbalances by dictating prices at the beginning of the marketing season (Sandu 2010).<sup>26</sup> For example, they were reportedly looking to meet a predetermined quota and stopped buying once that quota had been met. Because Tian Ze is able to outbid other merchants, early season prices were unnaturally high, dropping rapidly once the company stopped buying (TIMB 2010a). Respondents at TIMB argue that since Tian Ze is essentially a vertically integrated tobacco company (being a subsidiary of CNTC), it does not need to make a profit from the sale of unmanufactured tobacco, thus making it more difficult for other merchants to compete. It is unclear whether this has any bearing on the economic benefits to the state, but it is likely to be to the benefit of Zimbabwean tobacco farmers.

Based on available information, it is difficult to say anything conclusive about the economic or environmental impacts of the growing Chinese presence in the Zimbabwean tobacco industry. While China has historically been one of Zimbabwe's key trading partners for tobacco, it is only in the past two years that China has become directly involved in tobacco cultivation by engaging farmers under contract. Undoubtedly this has been an important contribution to expanding Zimbabwe's tobacco production capacity, and in all likelihood is the key driver behind the more than 20% increase in exports to China in 2010. Similarly, Tian Ze's capacity to offer above-market prices will likely only serve the Zimbabwean interest. However, with Tian Ze

claiming to be looking to do business in Zimbabwe for only five years, there is a risk that its contribution to the sector will be temporary. Furthermore, while significant discrepancies between Chinese import and Zimbabwean export data<sup>27</sup> suggest that customs agencies may be underperforming or companies evading customs, the relative stability of imports as reported by Chinese customs authorities suggests that China provided a stable market outlet during a time of extreme political and economic instability. The economic benefits of Chinese markets and merchants to Zimbabwean farmers and the economy are therefore likely to be significant, even if short-lived.

The environmental impacts of increased Chinese participation in the sector are likely to be less positive. The TIMB argues that most large tobacco merchants (notably Northern Tobacco and Zimbabwe Leaf Tobacco) have made important strides in recent years in minimising the environmental footprint of tobacco production. With tobacco production expanding once again in Zimbabwe, but with a production base very dissimilar to a decade ago, the impact on forests could be tremendous. Where many large-scale farmers use coal to cure their tobacco, most small-scale farmers are cutting indigenous trees for use as fuelwood for curing.<sup>28</sup> Representatives of the Forestry Commission estimate that for every 1 kg of flue-cured Virginia tobacco, 6–8 kg of fuelwood is required. In the Zimbabwean context, this would translate to the equivalent of 1 ha of dryland forest to cure the tobacco grown on 4–5 ha. To reduce the impact on forests, Northern Tobacco and Zimbabwe Leaf Tobacco have been providing their farmers with short-rotation eucalypt seedlings and have promoted the use of more fuel-efficient curing systems (e.g. the so-called Rocket Barn). While no independent reports exist to attest to the effectiveness of these initiatives in reducing the environmental footprint of tobacco, according to TIMB representatives, Tian Ze and GDI have not yet adopted such sustainability initiatives. If a proposed statutory instrument to mandate tobacco farmers to plant at least 1 ha of eucalyptus per year and an initiative by rural district counties to increase the accessibility of coal to tobacco producers come to pass, this will have to be

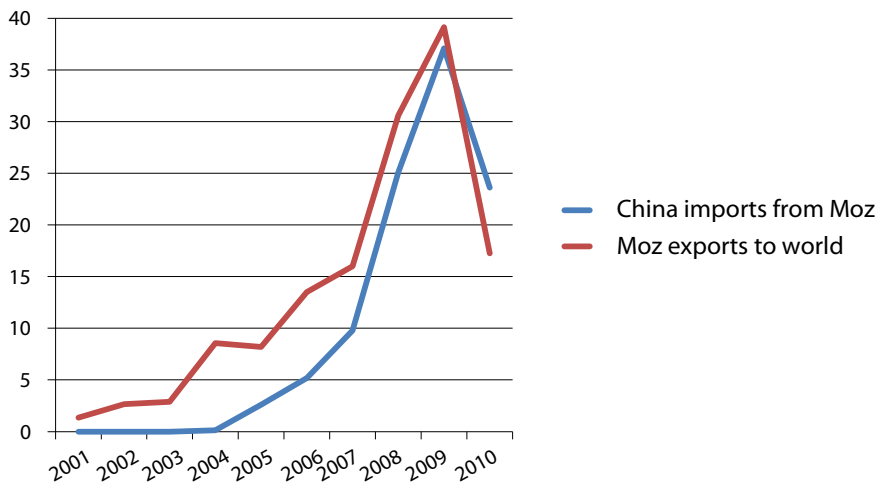
25 In an interview (4 November 2010), a representative of the TIMB anticipated China's trade dominance to be at least 40%.

26 CIFOR interview with Zimbabwe Farmers Union (ZFU), 3 November 2010.

27 Zimbabwe reported US\$11 million worth of exports to China in 2008, while China reported that it had imported US\$119 million – US\$33 million in excess of total tobacco exports registered for Zimbabwe that year.

28 CIFOR interview with the Forestry Commission, 19 November 2010.





**Figure 14. Mozambican sesame exports to China and to world, by value (million US\$)**

Source: UN Comtrade

figured into an assessment of the likely impacts of the growing Chinese presence in the sector.

### Sesamum

Unlike cotton and tobacco, sesame is a relatively new cash crop for the region. As was shown in Figure 3, between 2007 and 2009, sesame was the second commodity by value that China imported from Mozambique, following unprocessed logs.<sup>29</sup> It is also one of the fastest growing commodities, with a huge jump in exports from 2008 to 2009 because of the expansion in the area under cultivation (Figure 14). The commodity experienced a sharp drop in exports in 2010, possibly because of the sharp declines in market prices following the 2008 season (Bennett 2008).

Several agricultural experts confirmed that sesame was an emerging cash crop in Mozambique, whose production has been increasing strongly during the past few years, mainly replacing cotton as cash crop among smallholder farmers.<sup>30</sup> The rapid expansion of sesame production on smallholder farms is confirmed by national census data on annual cash crop production on small- and medium-scale farms (Figure 15).

Smallholders are reportedly shifting to sesame to take advantage of attractive market prices. The plant also has a number of agronomic properties favourable

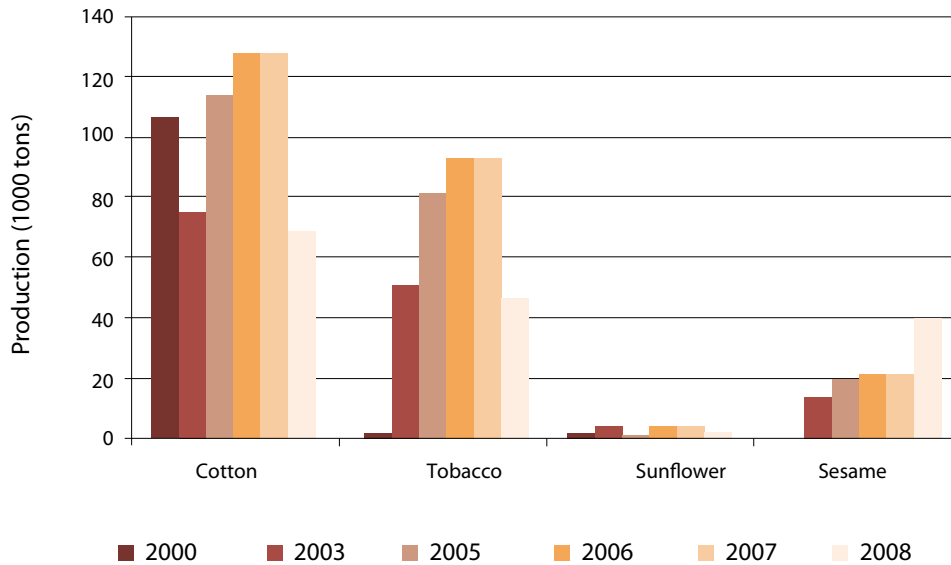
to smallholder farming under rain-fed conditions, including a short production cycle (leading to quick returns and enabling other crops to be grown in the same field), deep roots enabling the plant to withstand dry conditions, ability to grow on relatively poor soils and ability to be intercropped (Chemonics International 2002).

With the focus of the field-based scoping limited to the forestry sector, we were unable to visit sesame production areas to see how this dynamic is playing out. This, together with the absence of published reports on what is a relatively new export commodity for the country, makes any assessment of impacts conjectural. Reports of many households shifting away from traditional cash crops such as cotton suggest that the livelihood impacts, at least in the short run, are likely to be positive. Nevertheless, a decision by farmers to replace a perennial crop such as cotton with an annual crop such as sesame may compromise medium-term returns to capital and labour in the context of volatile market prices. With the vast majority of area cultivated in forest-rich provinces of Nampula, Sofala and Cabo Delgado,<sup>31</sup> there is also the possibility that forests could be affected by shifting patterns of land use over a large scale. Unconfirmed statements about the crop being affected by parasitic nematode infestation and requiring frequent shifts to new agricultural plots raise concern over possible deforestation as farmers bring new cropland under production, but this has yet to be validated.

<sup>29</sup> UN Comtrade.

<sup>30</sup> CIFOR interview with Maputo-based staff of an international agricultural research organisation and foreign university, 3 and 18 November 2010; CIFOR interview with faculty of Universidade Eduardo Mondlane, 23 November 2010.

<sup>31</sup> Based on INE data (available at [www.ine.gov.mz](http://www.ine.gov.mz)).



**Figure 15. Annual cash crop production of small and medium scale farms in Mozambique**

Source: [www.ine.gov.mz](http://www.ine.gov.mz)

### Jatropha

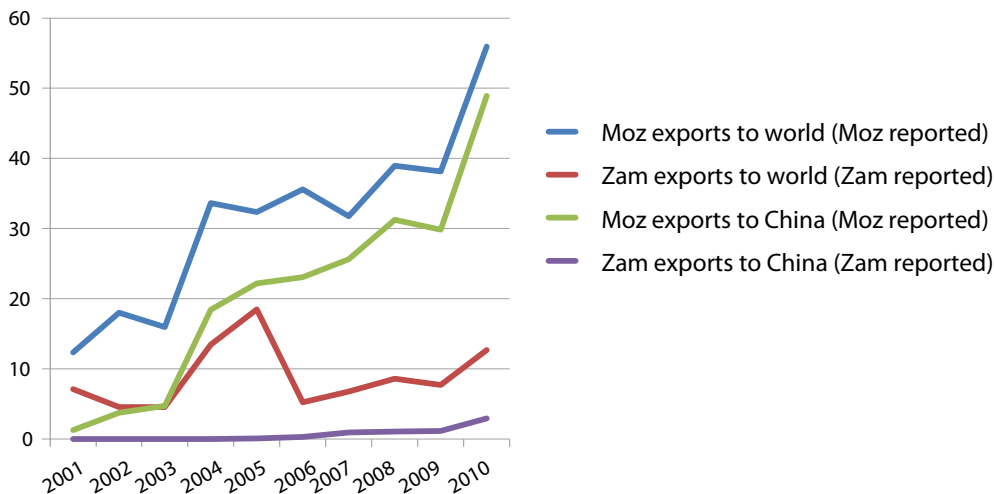
Although Chinese firms are present in the biofuel sector in Mozambique and Zambia, this presence is limited to one company in each country (out of approximately 13 investors in Zambia and 28 in Mozambique). However, the area of land acquired by each company is significant; China's Wuhan Kaidi (a subsidiary of the state-owned Wuhan Iron and Steel Corporation) has acquired 79 300 ha in Zambia's Northern Province in collaboration with a local company Biomass Development, and Zamcorp (a joint venture between the Mozambican state, Macau-based Geocapital and private Mozambican investors) has acquired 20 870 ha in Mozambique's Sofala Province. Thus, in each country Chinese firms are one player among many in the recent surge in large-scale commercial agricultural investments by foreign enterprises.

The Zambian case is of particular interest because of the large area of land sought and ultimately acquired, and reported involvement of state officials in brokering the deal. During a state visit by then President Banda to China in early 2010, the company signed a memorandum of understanding with the Zambian government that would see the company invest US\$3 billion in the cultivation of *Jatropha curcas* L. for biodiesel production, with the capacity to create 200 000 jobs (Times of Zambia 2010). Initially seeking access to a staggering 2 million ha (predominantly on customary land), the

company has 'only' managed to obtain commitments from traditional landholding authorities for approximately 300 000 ha.<sup>32</sup> Primarily seeking access to more strategically located land along the TAZARA corridor for easy market access and export, the company refused large areas of land it was offered in the more remote Mporokosho District. The government, through the Ministry of Trade and Commerce, has played an active role in facilitating these land acquisitions, with the Minister himself personally touring the region with the investors to convince traditional authorities to relinquish their landholdings for the project (German *et al.* 2011).

Although these projects could generate significant employment in remote provinces, they also pose significant risks. In Zambia, leasehold titling would imply that the land would be reclassified from customary to state land, and would therefore be alienated from customary land owners to the government indefinitely (German *et al.* 2011). In each country, large-scale land acquisitions could result in the displacement of traditional livelihood activities and extensive clearing of environmentally significant forests and woodlands, as suggested by recent reports (ABN 2007, Schoneveld *et al.* 2011). However, with the Zambian state actively promoting agroindustrial development in the province, there

32 Interviews with ZDA officials, June and November 2010.



**Figure 16. Recent trends in timber exports to China and to world, 2000–2010 (million US\$)**

Source: UN Comtrade

is no reason to assume that such impacts would be unique to Chinese investments.

### Forestry

Southern Africa is home to some of the most extensive areas of dry forest in the world – forests that have significant stocks of commercially valuable but slow-growing timber. Based on customs data from exporting countries, Chinese markets have captured significant portions of timber exports from Mozambique only, with the Chinese share of exports estimated to have grown from 10% to 82% between 2001 and 2010 (Figure 16). Wood exports from Zambia to China for the 2000–2010 period are small, and no exports at all were registered from Zimbabwe to China.

While findings from in-country scoping corroborate the absence of Zimbabwean timber exports to China,<sup>33</sup> reports of a rampant illegal cross-border timber trade from Zambia to South Africa involving both Chinese and South African traders suggest that customs data do not tell the full story. This section therefore focuses on the Chinese presence in the forestry sectors of Zambia and Mozambique.

### Zambia

Zambia's estimated 50 million ha of forests and woodlands (66.4% of the country's total land area) hold approximately 2.9 billion m<sup>3</sup> of growing stock

(Mukosha and Siemplale 2008). The total volume of commercial timber has been estimated at 340.1 million m<sup>3</sup>, with the majority (around 75%) located in the semi-evergreen miombo-dominated forests. The distributional spread of commercial timber varies greatly across the country's nine provinces, with the largest volumes available in North-Western and Western Provinces (Table 7).

Most timber is harvested on 50 000 ha of industrial plantations owned and exploited by the parastatal company Zambia Forestry and Forest Industries Corporation Limited (ZAFFICO) (CFA 2010; Ng'andwe *et al.* 2006). Timber exports have earned Zambia US\$ 12 million in foreign exchange per year on average, predominantly through the export of minimally processed wood (Figure 17; see also Ng'andwe *et al.* 2006). This is roughly equivalent to 414 000, approximately 3% of total annual production<sup>34</sup>. Although China has not traditionally been a trade partner for wood products, in recent years the Chinese market has accounted for 12–23% of total export earnings from wood products. Although domestic market demand seemed to have been the major force driving industrial roundwood production recently,<sup>35</sup> this seems to be changing. Chinese companies currently hold four of the 16 concession licences in the country, and South African and ethnic Chinese and Taiwanese traders were found to be involved in the timber trade, all exporting to

<sup>33</sup> According to one source (Shumba 2001), few companies are interested in logging Zimbabwe's forests because more than 90% of them have limited to no commercial timber value.

<sup>34</sup> Using a conversion factor of US\$ 29/m<sup>3</sup>, following Puurstjärvi *et al.* (2005).

<sup>35</sup> Based on official trade statistics of UN Comtrade.

Table 7. Distribution of commercial timber species in Zambia by province

Province	Commercial timber by forest type (million m <sup>3</sup> )				Total
	Evergreen forest	Semi-evergreen	Deciduous forest	Other	
Central	0.0	44.5	1.5	0.0	46.0
Copperbelt	0.0	21.6	0.3	0.0	21.9
Eastern	0.0	9.1	18.7	0.0	27.8
Luapula	0.0	16.9	0.0	0.0	16.9
Lusaka	0.0	5.2	0.0	0.0	5.2
North-Western	9.5	99.9	2.9	1.2	113.5
Northern	0.1	21.6	14.2	0.0	35.8
Southern	0.7	2.5	10.1	0.0	13.3
Western	0.0	34.8	25.0	0.0	59.8
<b>Total</b>	<b>10.2 (3.0%)</b>	<b>256.0 (75.3%)</b>	<b>72.6 (21.3%)</b>	<b>1.2 (0.4%)</b>	<b>340.1</b>

Source: Mukosha and Siampale (2008)



Figure 17. Zambian timber exports to China and to world, 2000–2010 (million US\$)

Source: UN Comtrade

their countries of origin. With large concession areas, very low reported export volumes and a depressed domestic timber market, concerns have been raised over the destination of this timber. The licence of one Chinese company was recently revoked on environmental grounds<sup>36</sup>.

In 2010, 19 and 22 pit-sawing and 2 and 11 concession licences were active in North-Western and Western Provinces, respectively (Table 8). Although

36 'Govt withdraws license from Chinese company,' available at: [http://www.postzambia.com/post-read\\_article.php?articleId=18943](http://www.postzambia.com/post-read_article.php?articleId=18943) (accessed Nov 23, 2011).

the areas over which the two types of licence give the right to log are similar, concession licence holders have the legal right to log approximately twice as much as those holding pit-saw licences. Foreign enterprises may not legally hold a pit-saw licence, but in these two provinces, two foreign companies – both of Chinese origin – hold concession licences. The companies, Sikale Wood Manufacturing and AfriZam Timber Trading, are owned by the same family and linked to SuZhou Golden Ocean Timber Products based in Shanghai. Both companies operate in Western Province and are involved in both logging and processing.

**Table 8. All logging operations in North-Western and Western Provinces (2010)**

Province	Operation area		Licensed logging (ha)	Logging capacity (m <sup>3</sup> )	
	Open woodland	Forest reserve		Minimum	Maximum
Western – Pit-saw	17	5	33 000	3 960	19 800
Western – Concession	10	1	55 000	6 600	52 800
North-Western – Pit-saw	14	5	28 500	3 420	17 100
North-Western – Concession	2	0	10 000	1 200	9 600

Source: Forestry Department of Zambia (2011a, 2011b)

Concession companies in Western Province reported logging only 4101 m<sup>3</sup> in 2010, below the minimum legal requirement of 6600 m<sup>3</sup>, based on Chapter 19 of the Forest Act. Despite this, both Chinese companies were found to have purchased timber from pit-sawyers, with a third company, AfriZam, also sponsoring pit-sawyers in the Likulu district. Another Chinese company, Flying Dragon, operates without a concession licence by strictly purchasing timber from pit-sawyers<sup>37</sup> – a practice which is legal, provided there is an “agreement of sale” and the seller holds a timber production license

Pit-saw operators expressed a preference for Chinese companies over South African or Zambian traders: while they tended to offer lower prices, they tended to be more reliable, paying the agreed-upon prices on time. However, two concerns were raised regarding the practices of Chinese operators. One company was found to be operating a pit-saw licence for three years, despite a legislated maximum of two years. There were also cases where unprocessed logs were hid under sawn timber at border posts, whereas export of logs, both indigenous and softwood, is prohibited under the 1997 Forest (Timber Export) Regulations. The Forestry Department claims that Chinese traders often camouflage logs by putting planks on top and on the sides of a container, to circumvent this regulation. Forestry Department officials admit that the problem lies at the various customs checkpoints where poorly remunerated officers are easily bribed. Although Chinese concessionaires are the only foreign companies harvesting timber in the two provinces, the official scale of their operations and reported volume of exports to China are small compared with the total annual national production volume. More

research would have to be conducted to verify these figures, the potential direct impacts of their logging operations, their linkages with pit-saw operators and the extent to which their operations support illegal logging and trade. As yet, insufficient evidence is available to draw clear conclusions.

### Mozambique

Most of Mozambique’s forests are located in the northern provinces of Niassa, Tete, Cabo Delgado and Zambézia and the southern province of Gaza (Table 9). In addition to timber harvesting, the plantation forestry sector is rapidly expanding, with a number of large new investments in eucalypt and pine plantations for pulp and paper.

Under Mozambican law, there are two ‘regimes’ for forest harvesting: simple licences and concessions. Currently, most harvesting is carried out through simple licences (Ministry of Finance 2010). Simple licences, available only to Mozambican nationals, are intended for ‘commercial, industrial and energetic uses’ and are valid for up to one year. Concession licences, available also to foreigners, are intended to supply the wood-processing industry and are valid for up to 50 years. Simple licences specify maximum annual harvesting volumes, and concession licences stipulate the volume the concession holder may harvest each year.<sup>38</sup> In both cases, 20% of timber revenues generated are to be returned to communities residing within the timber harvesting area under licence. In addition to these ‘regulated’ regimes, local residents can harvest forest resources at any time for subsistence purposes without paying fees, provided the forest resources do not leave the administrative post in which they were harvested. According to

37 Interview with the Department of Lands in Kasama, 23 June 2010; interview with SNV in Kasama, 25 June 2010.

38 While these are established by species, average annual allowable cut (AAC) per ha based on total AAC for the country and hectares of productive forest is estimated at 52.2 m<sup>3</sup>/ha (Forest Inventory of 2007, Ministry of Finance 2010).

**Table 9. Productive forests in Mozambique by province (Ministry of Finance 2010)**

Province	Area (km <sup>2</sup> )	Forest area ('000 ha)	Predominant forest type
Cabo Delgado	78 665	47 535	Dense deciduous
Gaza	75 714	37 709	Open deciduous
Inhambane	68 536	23 057	Open deciduous
Manica	62 428	34 560	Open deciduous
Maputo	22 989	8 151	Open deciduous
Nampula	78 816	26 910	Dense deciduous
Niassa	122 459	94 210	Dense deciduous
Sofala	67 542	28 497	Open deciduous
Tete	100 944	42 067	Open deciduous
Zambézia	103 036	48 478	Dense deciduous
Country	781 129	391 174	Dense deciduous

the National Forestry Strategy, the aim is to slowly phase out simple licences in the sector because of concerns about sustainability and limited local benefits capture; however, in practice simple licences are still being issued (Mackenzie and Ribeiro 2009).<sup>39</sup> A second aim is to enhance domestic processing and value addition prior to export. Forestry and wildlife legislation from 2002 (Decreto 12/2002) specifies five classes of commercial timber (precious, first class, second class, third class and fourth class) and prohibits export of unprocessed logs for the 21 species classified as first class.<sup>40</sup> In 2007, a decree was passed that moved a number of timber species into Class 1, thus prohibiting their export in the form of unprocessed logs.

Where these legislative instruments have been effectively implemented, increases in the production of sawn timber and the number of operators processing for export have been observed (Mackenzie and Ribeiro 2009). However, non-implementation is also common and many of the new sawmills are of low quality, process only enough to meet the minimum requirements for export and therefore employ very few people (Mackenzie and Ribeiro 2009). A number of recent reports point to systemic

sector governance shortcomings, with poor sector performance on a number of indicators (Ministry of Finance 2010) and a high level of complicity of civil servants and economic, political and military elites (Mackenzie 2006, Jansson and Kiala 2009, Mackenzie and Ribeiro 2009, Ribeiro and Nhabanga 2009). This impression was confirmed during the rural scoping in Pemba. A recent audit of the sector points to systemic weaknesses in administration and law enforcement (Ministry of Finance 2010). Limited capacity to enforce is often cited as a major constraint. Official statistics tend to confirm this, with current numbers of inspectors far below the recommended concentration (Bila and Salmi 2003, cited by Ministry of Finance 2009) and provinces where enforcement agents are responsible for larger areas – and therefore can be expected to underperform – including those provinces with the largest forest areas. Political interference also undermines the effectiveness of those that are present on the ground.<sup>41</sup> Other problems are related to the management of annual allowable cuts (AACs) and declining revenues from unsustainable forest management practices, including harvesting in excess of the annual allowable cut; a 50% reduction in the value by volume of harvested timber from 2007 to 2009 due to a shift towards less valuable timber species (a symptom of unsustainable management); and the development of management plans with incorrect or falsified figures that have no basis in a

39 CIFOR interview with a foreign technical officer of the Ministry of Agriculture (MINAG), 18 November 2010; respondents from Cabo Delgado scoping, February 2011.

40 These include *Afzelia quanzensis*, *Androstachys johnsonii*, *Albizia glaberrima*, *Albizia versicolor*, *Balanites maughanii*, *Breonadia microcephala*, *Baikiaea pluriijuga*, *Combretum imberbe*, *Cordyla africana*, *Diospyros* spp., *Erythrophloeum suaveolens*, *Faurea speciosa*, *Inhambanella henriquesii*, *Khaya nyasica*, *Milletia stuhlmannii*, *Monotes africanus*, *Morus lacteal*, *Pterocarpus angolensis*, *Podocarpus falcatus*, *Pseudobersama mossambicensis*, and *Swartzia madagascariensis* (República de Moçambique 2002).

41 CIFOR interview with faculty of Universidade Eduardo Mondlane, 23 November 2010.



**Figure 18. The value of timber exports from Mozambique to China and to world, 2000–2010 (million US\$)**

Source: UN Comtrade

forest inventory.<sup>42</sup> A third set of challenges relates to the harvesting and conveyance of timber without licences. In 2009, 87 000 m<sup>3</sup> of timber worth an estimated 71 million meticaïs (US\$2.2 million at the time of writing) was harvested without a licence and an estimated 72–150 million meticaïs (US\$2.3–4.7 million) was lost because of unlicensed charcoal operations.<sup>43</sup> In addition to illegal sourcing of timber, many logging concessions are reportedly used as a cover for the mining of precious stones.<sup>44</sup> The insufficient implementation of the National Forest Strategy and associated regulations, including limited financial and technical support to enable operators

42 These findings are supported by other studies (Mackenzie 2006, Mackenzie and Ribeiro 2009, Ribeiro and Nhabanga 2009, Siteo 2009), which document similar factors underlying unsustainable forest management, among these: the absence of approved management plans in a majority of concessions; cutting in areas that are not properly inspected prior to licensing; harvesting outside of concession areas and limited effort to monitor such practices; licensing far in excess of AAC; harvest and transport more than 10% in excess of authorised volumes; poor-quality management plans (with plans to exploit all commercial species in the first few years of operation); failure to use the 15% royalties operators pay to reforest for this purpose; absence of good records at national level on the permanent forest estate (e.g. species and volumes cut); and the lack of permanent records of licensed harvesting areas. One study also questions the quality of forest inventories employed to justify a recent increase in the AAC (Mackenzie and Ribeiro 2009).

43 These findings are supported by other studies (Mackenzie and Ribeiro 2009, Ribeiro and Nyabanga 2009) reporting high levels of illegal licensing, falsification of documents and high levels of unlicensed logging.

44 CIFOR interview with staff of a Maputo-based NGO, 5 November 2010; CIFOR interview with a Maputo-based independent consultant, 27 November 2010.

to shift from the simple licence to the concession model<sup>45</sup> and abuse of simple licences originally intended for small operators, have undermined political support for the same, further compromising the potential of the forestry sector in supporting rural development.

Some key informants questioned the technical viability of a sustainable concession system in Mozambique. With a very low density of commercial species, many of these species reaching maturity after 50 years or more (200–300 years in the case of pau preto) and a forest structure that does not lend itself to mechanisation, the ecological characteristics of Mozambican forests also undermine the ability to make a well-managed system of rotation forestry economically viable (Siteo 2009).<sup>46</sup>

The presence of Chinese firms and markets is evident only in timber harvesting from natural forests. The value of the timber trade between China and Mozambique has risen steadily in recent years, with China's share of Mozambique's timber exports growing from a low of 10% in 2000 to 87% by the end of the decade, according to Mozambican customs data (Figure 18). This trade relationship is clearly more important to Mozambique than to China, for which the timber trade with Mozambique

45 CIFOR interviews with timber operators in Cabo Delgado in February 2010.

46 CIFOR interview with staff of a Maputo-based NGO, 5 November 2010; CIFOR interview with a foreign technical advisor of MINAG, 18 November 2010.



accounts for less than 1% of the total value of its timber trade for the decade.

As can be seen from this graph, there are a number of discrepancies in the figures reported by Mozambique and China for the entire decade. The value of Mozambican timber imports reported by China far exceeds the value of exports to all trade partners reported by Mozambique, reaching a high of US\$134.3 million in 2007. If Chinese statistics are assumed to represent the full value of trade and the difference can be interpreted as resulting from poor customs controls during export, then Mozambique lost tax revenue on US\$361 million in trade with China in the 2001–2010 period.

When describing the involvement of Chinese firms in the harvesting and trade of timber from natural forests, it is important to take a historical perspective. According to a number of sources, there has been a significant shift in the business models employed by Chinese operators in the Mozambican forestry sector from the 1990s to the present. It is said that in the 1990s, Chinese firms were directly involved in logging activities. This gave way to a more indirect role in the 2000s, whereby other actors – primarily Mozambicans – harvest timber for subsequent sale to Chinese merchants and the Chinese market.<sup>47</sup> In most cases where ethnic Chinese merchants work with Mozambican partners, the latter hold simple licences and could – until recently – also receive forward-financing to cover the costs of the licence (estimated at US\$15 000), equipment, labour and transport (Mackenzie 2006, Jansson and Kiala 2009).<sup>48</sup> In such cases, the local partner transports the logs to the ports, where buyers are waiting with ships or smaller vessels that subsequently transport the logs to cargo ships waiting in international waters (Jansson and Kiala 2009). While some sources perceived this to be a convenient strategy for Chinese merchants to avoid any association with illegal practices,<sup>49</sup> no hard evidence was gathered during the scoping to validate this allegation. Another shift has been from exclusive operation through simple licences to recent involvement in concessions.<sup>50</sup>

47 CIFOR interview with staff of a Maputo-based NGO, 5 November 2010.

48 CIFOR interview with faculty of the Universidade Eduardo Mondlane, 23 November 2010; CIFOR interview with a foreign technical advisor of MINAG, 18 November 2010.

49 CIFOR interview with faculty of the Universidade Eduardo Mondlane, 23 November 2010.

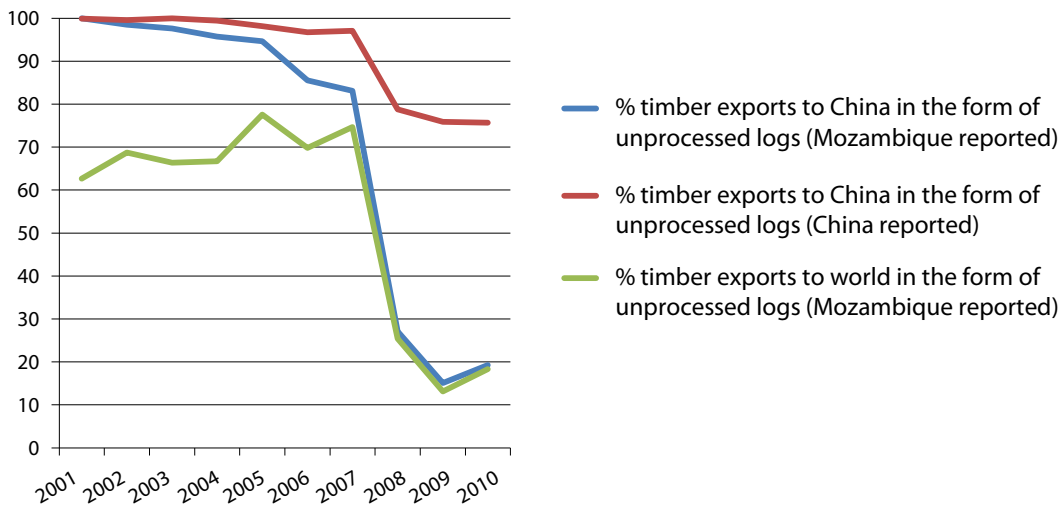
50 CIFOR interview with faculty of the Universidade Eduardo Mondlane, 23 November 2010.

According to one report, this is largely due to the risks associated with the provision of credit, with too many operators defaulting or side-selling (Mackenzie and Ribeiro 2009). As a consequence, in the mid-2000s many Asian merchants that had previously bought from simple licence holders began to acquire their own concessions (Mackenzie 2009). However, this does not necessarily mean that Chinese or other Asian operators have a stronger presence on the ground or in forest management. According to reports from Zambézia, a common practice is to sell off concession licences or to provide the licence to trusted loggers (Mackenzie and Ribeiro 2009). This, together with the proliferation of unlicensed loggers (*furtivos*), means that concessions have become a means to informally contract operations to individuals formerly operating as simple-licence holders (Mackenzie and Ribeiro 2009).

These statements for Zambézia were only partially confirmed for Cabo Delgado. Respondents explained that forward-financing by Asian traders was limited to covering simple licence fees and gasoline for chainsaws, and was primarily provided to operators with guarantees (e.g. house, car). In addition, the contract between merchants and loggers includes an advance purchase agreement at a given price. In some cases, merchants will send a truck to pick up the timber and transport it to the merchant's operating base (some with sawmills) where containers are prepared for export. However, some respondents also noted a reduction in the practice of forward-financing 3–4 years ago as timber merchants opted for concessions. As one concessionaire in Cabo Delgado put it: 'I need to prepare for when nobody wants to sell me timber, and with a concession I can securely cut for the next 15 years.'

This trend of increased demand for concessions corresponds with official policy to move away from simple licences to concessions. Yet while the number of concessions is on the rise in some provinces, there is also evidence to suggest that powerful political elites of Chinese and Mozambican origin are acquiring new concessions to reserve prime forests for future use, in contravention of official policy (República de Moçambique 2002, Mackenzie and Ribeiro 2009). Some respondents in Pemba confirmed this trend for Cabo Delgado Province. Thirty-five per cent of the recently approved and contracted concessions in Zambézia Province were found to lack the processing infrastructure required by law to start operations (Mackenzie and Ribeiro 2009). Civil society respondents in Cabo Delgado further noted that many concessionaires only comply





**Figure 19. Percentage of unprocessed-timber exports to China, 2001–2010**

Source: UN Comtrade

with the minimal requirements (e.g. very simple sawmill, weak management plans). This increase in the number of concessions has not corresponded to a significant reduction in the number of simple licences (Mackenzie and Ribeiro 2009).<sup>51</sup> As one illustration, the temporary reduction in the number of simple licences in Zambézia Province was then followed by a modest increase, the proportion of timber harvested by simple licences vs. concessions remains high and the aforementioned trends have reportedly led to an explosion of illegal licensing and unlicensed logging (Mackenzie and Ribeiro 2009).

Large portions of the timber being exported to China are reportedly illegal (Mackenzie 2006, Mackenzie and Ribeiro 2009, Ribeiro and Nhabanga 2009, Ministry of Finance 2010).<sup>52</sup> Forms of illegality include: (1) illegal harvest (harvest in excess of licensed amounts, harvest without a licence or harvest in an area other than that covered by the licence); (2) violations of labour laws (e.g. illegal employment of foreign workers); (3) illegal transit and purchase of timber; and (4) illegal exports (exports of unprocessed logs of species classified as ‘first class’, and under-reporting of volumes exported) (Mackenzie 2006, Mackenzie and Ribeiro 2009, Ribeiro and Nhabanga 2009, Ministry of Finance 2010). Regarding illegal harvest, one respondent reported discrepancies between maximum allowable

cuts, official records and Chinese imports. Official data from one province showed 400 m<sup>3</sup> of pau preto (*Dalbergia melanoxylon*) with documents, despite a legislated maximum of 100 m<sup>3</sup> for the province. They also calculated an estimated 3000–4000 m<sup>3</sup> leaving the province for China. When looking for pau preto in China, they found an estimated 10 000–15 000 m<sup>3</sup> from Mozambique without documentation. Exports of 30 times the annual quota for pau preto were also reported for one year from Zambézia Province (Mackenzie and Ribeiro 2009).

As trade data are not broken down by species, it is difficult to evaluate the extent to which Decreto 12/2002, specifying which species must be processed prior to export, is complied with. However, evaluation of the composition of processed vs. unprocessed exports and level of processing can provide some indication of whether official policies on value-added processing are being achieved. Data show high levels of exports of unprocessed logs through 2007, with a sharp decline thereafter (Figure 19). Yet the decline suggested by Chinese imports data is much more subtle than that indicated by data reported by Mozambique; the former suggests that 76% of exports to China – the main trade partner – remains unprocessed. When looking at the level of processing of timber exports classified as processed, nearly 100% of those exports classified as processed are processed only minimally (classified as ‘wood sawn/chipped lengthwise, sliced/peeled’). This figure stays remarkably constant from 2001 to 2010 (97–100%), suggesting very limited progress

51 CIFOR interview with a foreign technical advisor of MINAG, 18 November 2010.

52 CIFOR interview with a foreign technical advisor of MINAG, 18 November 2010.

vis-à-vis official policy objectives.<sup>53</sup> There is also evidence of violations of Mozambican forestry laws by or on behalf of Chinese actors. Research carried out in 2004 in Zambézia Province, for example, found that the vast majority of Chinese exports were unprocessed logs (Mackenzie 2006). In January 2011, a ship was prevented from illegally exporting 161 containers from Pemba holding mainly Chinese-owned unprocessed logs and 126 elephant tusks.<sup>54</sup> By the time of the rural scoping in Cabo Delgado (February 2011), officials from the agricultural ministry and customs charged with enforcement had been suspended from their duties (and have since been released from duty<sup>55</sup>), and the involved timber companies were on trial.

As for the other irregularities, one study found a low-value (Class 3) species being used as a cover for exports of more valuable species and the reporting of pau ferro planks to cover for exports in logs (Mackenzie and Ribeiro 2009). Provincial labour departments and published studies also attest to the illegal employment of foreign workers (many but not all being Chinese) by the large timber companies (Mackenzie and Ribeiro 2009, Ribeiro and Nhabanga 2009). Respondents in the Mackenzie and Ribeiro (2009) study also reported a practice by Chinese merchants to discount prices by \$10/m<sup>3</sup> when purchasing illegal timber, which evidences engagement in the purchase of timber sourced illegally, contravening the 1999 law requiring that only forestry products with the appropriate harvesting or transport licences be acquired. The practice of discounting the value of illegal timber was also reported by respondents in Cabo Delgado. An industrial operator cited in one report claims that provincial-level authorities are paid bribes by simple-licence holders and Asian operators to facilitate their operations (Mackenzie and Ribeiro 2009).

53 The 1999 law stipulates that the state will 'promote the establishment of processing industries for forestry and fauna products, with the aim of increasing, gradually, exports of manufactured products' (Article 8). Article 16 of the law establishes a concession licensing system with the aim of 'supplying the processing industry' and states that the concession licence holder 'should guarantee the processing of forestry products obtained' (República de Moçambique 1999).

54 Notícias, 12 January 2011, Pemba: Abortada saída ilegal de madeira ([www.jornalnoticias.co.mz/pls/notimz2/getxml/pt/contentx/1164652/20110112](http://www.jornalnoticias.co.mz/pls/notimz2/getxml/pt/contentx/1164652/20110112)); A Verdade, 27 January 2011, Apreensão de madeira e marfim em Pemba ([www.verdade.co.mz/nacional/17011-apreensao-de-madeira-e-marfim-em-pemba](http://www.verdade.co.mz/nacional/17011-apreensao-de-madeira-e-marfim-em-pemba)).

55 CIFOR interview with faculty at Universidade Eduardo Mondlane, 10 November 2011.

Several market drivers within China have had a powerful influence in shaping forestry practices in Mozambique. The first is domestic consumer demand. Mozambican timber is used for a number of specialty items requiring Class I and precious species, including reproduction Ming and Ching Dynasty furniture, for which the more expensive rosewood species traditionally used are being replaced by African species, and solid wood flooring (Mackenzie 2009). Yet local respondents also suggest that the Chinese demand for Mozambican timber is limitless, not just for commercially viable species but also for Mozambique's lesser known and less regulated species.<sup>56</sup> Market forces driving *high volumes of demand* include the growing Chinese economy, the active wood-processing sector, the logging ban in China and the tendency to import wood in excess of current demand (with some companies reportedly storing imported timber underwater for later sale at a premium) (Barr and Cossalter 2004).<sup>57</sup> It is therefore important to note that while an important share of timber is consumed domestically, international demand for processed wood products (e.g. furniture) from China is further contributing to the Chinese demand for African timber, with some flooring exported (Canby 2008).

Market factors driving *demand for logs over processed wood* include Chinese policies supporting the domestic wood-processing industry and the fact that imports of unprocessed logs carry no import duties within China and most other importing countries<sup>58</sup> (Barbier 1995). Exporters reportedly make less profit selling timber to the Chinese market as boards (first-level processing) than as logs, given the requirements associated with the aforementioned end uses within China and the ability of Chinese wood processors to make efficient use of all wood scraps.<sup>59</sup> Thus, while some logs are sawn according to Mozambican regulations, Chinese import data would suggest that most are not (Figure 19). There is some disagreement about the role of the Chinese government in driving the demand for unprocessed logs. Whereas one source suggests that the high level of participation of state-owned enterprises in the timber trade with

56 CIFOR interview with a foreign technical advisor of MINAG, 18 November 2010.

57 CIFOR interview with faculty of the Universidade Eduardo Mondlane, 23 November 2010.

58 Ministry of Trade and Commerce; CIFOR interview with a foreign technical advisor of MINAG, 18 November 2010.

59 CIFOR interview with a foreign technical advisor of MINAG, 18 November 2010.

Mozambique (accounting for 40–60% of imports) might encourage log imports given official policies supporting the domestic wood-processing sector (Mackenzie and Ribeiro 2009), others suggest that the government is not interested in Mozambican timber given the small volumes involved and the political complications associated with the illegal timber trade.<sup>60</sup>

In addition to the Chinese market, a technician from the provincial agricultural authority in Cabo Delgado pointed to the much smaller but significant Tanzanian market for timber. At least for the past six years, merchants from Tanzania have been observed to operate in the northern part of Cabo Delgado, close to the border to Tanzania where timber is exported either by road or by small ships from the northern port town Moçimboa da Praia. The trade occurs largely uncontrolled and is another driver of illegal timber operations. Milledge *et al.* (2007) cite the possibility of Mozambican timber transiting through Zanzibar en route to China.

One report suggests that political interference has characterised trade relations between China and Mozambique, given the need to reconcile official policy with Chinese market demand (Mackenzie and Ribeiro 2009). This reportedly includes the Asian timber lobby pressuring the government to enable the export of slabs of rough-cut (*prancha*) rather than fully squared timber, and similar pressure to reclassify the main commercial species as ‘precious’ to enable their export as logs.

The effects of the aforementioned trends, if proven to be true, include both losses for the national economy and the rapid depletion of valuable hardwoods from Mozambican forests.<sup>61</sup> Claims that Chinese firms tend to emphasise quick returns (e.g. focus on trade in indigenous timber species rather than on plantations, limited to no investment in processing, limited attention to sustainability) at the expense of investment in a viable industry therefore need to be evaluated in light of the evidence. Chinese firms are much more active in the harvesting of indigenous species than in plantation forestry, where they

are absent (German and Wertz-Kanounnikoff in prep). Yet while this points to limited investment in activities requiring the highest up-front investment, it does not say anything about the quality of their investments in indigenous production forests. According to the literature and local respondents interviewed during field scoping in Cabo Delgado, most Chinese economic actors active in the country’s forestry sector are merchants rather than investors, buying timber from local or other foreign operators and exporting it to China (Mackenzie 2006). However, a key finding from Mackenzie and Ribeiro’s (2009) study on Zambézia Province is a trend towards Asian acquisition of concession licences, a trend also observed in Cabo Delgado. However, the same study found that these concessions tend to be sub-contracted to simple-licence holders, resulting in a loss of transparency and accountability. This runs counter to the intention of the 1999 Law on Forests and Wildlife, which attempts to stimulate job creation and domestic value capture through increased timber processing and inward industrialisation. Yet this seems to be a general trend for all companies in the province, with the exception of a few Mozambican companies established for more than 10 years. The reportedly different levels of legal compliance and/or enforcement and employment of foreign workers are also of concern for their tendency to further erode local benefits capture. Some reports cite anecdotal evidence suggesting that Chinese firms pay no taxes or social security, making it difficult for other operators to compete with them (Mackenzie and Ribeiro 2009). On the other hand, anecdotal observations from Cabo Delgado suggest employment benefits do occur; for example, in one Asian-managed timber trading and processing company the staff was composed of four Asians (including the manager) and 45 Mozambicans working in the mill.

Although no systematic studies have been carried out to assess the impacts on the resource base, several independent lines of evidence suggest that these trends have already been detrimental to forest sustainability in some locations. According to several respondents, the forests in Zambézia are largely destroyed, with the hotspot of illegal logging having moved northwards to the more pristine forests of Cabo Delgado.<sup>62</sup> Yet even in Cabo Delgado, various respondents (timber operators, civil society and local

60 CIFOR interview with staff of a Maputo-based NGO, 5 November 2010.

61 Although this is disputed in the absence of up-to-date forest inventories, Mackenzie and Ribeiro (2009) cite annual cuts nearly four times the AAC for mondzo in three districts of Zambézia Province. Ribeiro and Nhabanga (2009), referencing primary data on harvested timber and stakeholder perceptions, suggest that harvesters are concentrating on younger trees in the stage of regeneration and illegal practices are rampant.

62 CIFOR interview with a Maputo-based staff member of an international agricultural research organisation, 3 November 2010; CIFOR interview with staff of a Maputo-based NGO, 5 November 2010.

community members) pointed out that commercial timber had already disappeared from the city's proximity and that the 'logging frontier' was moving towards the north-western area of the province. Based on evidence acquired to date, it is difficult to state whether firms of different nationalities bear differential levels of responsibility in inducing these wider trends.

### Mining

The mining sector has historically had a prominent role in the economies of Zambia and Zimbabwe, dating back to the early 20th century. It has also been especially in these two countries that Chinese investments in mineral extraction were found to be concentrated. In Zambia, mineral extraction has historically focused on copper and its associated mineral cobalt, found primarily in the Copperbelt region along the border between Zambia and the Democratic Republic of Congo. In Zimbabwe, the mining sector is dominated by gold, nickel, platinum group metals and chromium, which are mostly concentrated along the so-called Great Dyke, an igneous dike stretching across central Zimbabwe from north to south. Under British colonial rule, Zambia and to a lesser extent Zimbabwe became the targets for major mining investments from large South African and British mining conglomerates. Foreign control over mineral resources and the unequal distribution of benefits from the sector became important political rallying points in both countries following their independence. Zambia, in particular, took far-reaching measures to regain control over mining assets. In the 1960s, it nationalised all mining operations, which were eventually consolidated under the parastatal Zambia Consolidated Copper Mines (ZCCM) (Fraser and Lungu 2007). However, when the global copper market collapsed in the 1980s, remaining stagnant until the 2000s, the Zambian economy contracted and the government became increasingly indebted. In the late 1990s, the government was forced to relinquish its monopoly over copper production. Although the ZCCM continues to hold minority shares in most of the seven companies that purchased government mines, the mining sector is now essentially controlled by foreign enterprises (Lungu 2009). Although two state-owned mining companies were established following independence in Zimbabwe, throughout the country's history minerals have been exploited largely by foreign-owned companies. It is only recently, with the passing of the Indigenisation and Economic Empowerment Act, that Zimbabwe is looking to regain domestic control

over the sector. With extensive opposition from the private sector and some political parties, it remains uncertain whether the Act will be implemented in its current form. Shortly after being passed, for example, initial regulations requiring 51% corporate ownership by black Zimbabweans were amended with a proposal for sector-specific thresholds for foreign-owned firms (AfDB 2011).

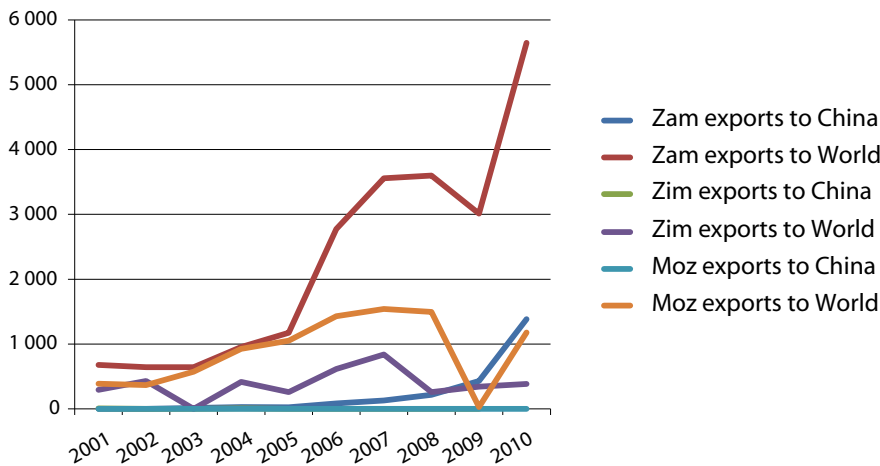
Mineral exports are currently the most important source of foreign exchange for both countries. In 2010, they contributed approximately 88% of total export earnings in Zambia and 40% in Zimbabwe. In Zambia, copper exports accounted for 85% of total mineral export earnings in 2010, while the mining sector in Zimbabwe is more diversified, with ferrochrome and nickel mattes (an intermediate product of nickel and platinum) each comprising significant levels of mineral exports (Table 10).

With the mining sector in Mozambique historically dominated by artisanal mining for gemstones and gold, its contribution to the trade balance has not been as significant as the two other countries. Foreign investors had a limited formal presence in the sector until very recently, when the country initiated a host of reforms to attract investments into the sector. A US\$1.34 billion investment in an aluminium-processing facility in 2000 (to convert aluminium oxide imported from Australia into unwrought aluminium) kicked off investments in the sector, which by 2010 accounted for 52% of the total export value and 97% of the total mineral export value.

**Table 10. Leading metal and mineral exports from Zimbabwe ('000 US\$)**

Product	2010	Average (2001–2010)
All products	246 186	155 777
Ferro-chromium containing by weight more than 4% of carbon	52 457	10 916
Chromium ores and concentrates	48 284	7 718
Felspar	5 179	1 617
Copper (mattes, cement, precipitated)	3 068	307
Copper ores and concentrates	1 884	477
Nickel mattes	1 790	498

Source: UN Comtrade



**Figure 20. Trends in trade in minerals (excluding mineral fuels) with China and the world, 2001–2010 (million US\$)**

Source: UN Comtrade

Furthermore, recent discovery of a major coal deposit in Tete Province and a fast expansion of mining investments and prospecting are expected to rapidly diversify the sector and expand its contribution to foreign exchange earnings in coming years.

Historically, the major export partners for Zambia and Zimbabwe have been the European Union, South Africa and the United States. However, since 2005, China has become the second largest importer of Zambian copper, after Switzerland. The magnitude of these flows differs considerably, depending on whether China or Zambia is reporting. According to Zambian customs data, China accounted for 24% of copper exports in 2010; according to Chinese statistics they accounted for 44% of copper exports over the same period (UN Comtrade). According to Mozambican and Zimbabwean trade statistics, China is not a trade partner of relevance, and it has only become significant for Zambia in the past year (Figure 20). However, with increasing Chinese participation in chrome mining and processing, in 2010 China reported that it had imported more than US\$100 million worth of chrome from Zimbabwe (UN Comtrade).

With China increasingly accessing foreign mineral resources to supply its ever-expanding industrial sector, Chinese companies, often state-owned, have started to invest heavily in mineral extraction and processing in Zambia and Zimbabwe and, to a lesser extent, Mozambique. In Zambia, during the 2000s, Chinese state-owned and private companies pledged to invest in excess of US\$6 billion in the Zambian mining sector, predominantly for

copper. This accounts for more than 40% of all FDI pledges during the decade (ZDA 2010). Although comprehensive investment data are not publicly available in Zimbabwe, a Chinese state-owned company purchased a controlling stake in Zimbabwe's largest ferrochrome producer in 2007, and the Chinese government has signed multiple agreements with the Zimbabwean government for access to mineral deposits. Investments in the Mozambican mining sector, on the other hand, have primarily originated from non-Chinese sources such as from Brazil, India and Australia.<sup>63</sup> Nevertheless, state-owned Wuhan Iron and Steel Corporation holds 40% ownership of the US\$2 billion Zambeze Coal Project, estimated to encompass a 9 billion tonne coal reserve.<sup>64</sup> As Chinese mining companies are actively prospecting for limestone, metals, heavy sands and semi-precious stones throughout the country, their involvement is expected to intensify in the near future.<sup>65</sup> There have also been some reports of illegal small-scale mining activities under timber licences with Chinese capital, but these could not be validated.<sup>66</sup>

63 CIFOR interview with the Head of Cooperation of an OECD member country, 4 November 2010; CIFOR interview with Counsellors at two emerging economy embassies, 23 and 24 November 2010; CIFOR interview with MIREME's Direcção das Minas, 29 November 2010; see also Selemane (2009, 2010)

64 Available at <http://www.mining-technology.com/projects/zambesecoalproject/> (17 November 2011)

65 CIFOR interview with MIREME's Direcção das Minas, 29 November 2010

66 CIFOR interview with the director of a Maputo-based NGO, 25 November 2010

Considering the growing intensity of (planned and actual) Chinese investments in the mining sector in Zambia and Zimbabwe in particular, the following sections consider the impacts of these investments in these countries in greater detail. Chinese involvement in Mozambique is not assessed in great detail, given the more recent entry of Chinese investors and prospectors into the sector and negligible exports to China.

### Zambia

The most significant Chinese investment in the Zambian mining sector is by the state-owned company China Nonferrous Metal Mining Company (CNMC), through one of its subsidiaries, Nonferrous Company Africa (NFCA). In 1998, through a competitive bidding process, NFCA acquired an 85% share in one of ZCCM's seven mines, the Chambishi Copper Mine. After an initial financial investment of US\$132 million into refurbishing the mine and the concentrator, mining operations commenced in 2003 (Fraser and Lungu 2007, Hairong and Sautman 2009). Considered a comparatively depleted mine, the mine produced only 23 500 tonnes of contained copper in 2009 (equivalent to 3.3% of Zambia's total mined copper output). In 2010, NFCA opened a new mine and is planning a third mine (Dow Jones 2010). In May 2009, NFCA also acquired an 85% interest in the Luanshya Copper Mines (Reuters 2009). The mine, previously owned by Switzerland's Enya Holdings, was put under 'care and maintenance' in late 2008 as a result of low copper prices and the global economic malaise. As part of the agreement, NFCA committed to investing in, among others, developing a greenfield project and upgrading existing mining facilities (Thole 2009).

In recent years, NFCA has rapidly expanded its investments into the copper sector, and in 2006 commenced the construction of the Chambishi Copper Smelter (CCS), which became operational in late 2008. The second largest smelting operation in Zambia, the CCS currently has an annual production capacity of 150 000 tonnes of blister copper (near pure copper that has not yet been electrowon), which NFCA plans to expand to 300 000 tonnes (CNMC 2009). NFCA also constructed a smaller copper smelter, which processes mostly tailing wastes from the Chambishi Copper Mine into copper cathodes (Mobbs 2009). Although only one other, much smaller, Chinese copper smelter is officially operating

in the Copperbelt,<sup>67</sup> various government stakeholders asserted that many more Chinese-owned copper smelters were operating informally in the area.<sup>68</sup>

In nickel mining, Asia's largest nickel mining company, the Chinese state-owned Jinchuan Group, increased its shareholdings in Australian company Albidon's Munali Nickel Mine (the sole nickel mine in Zambia) from 18% to 50.4% in August 2009, which included a 'life-of-mine' off-take agreement. Albidon had suspended its mining operations in early 2009 because of low nickel prices and issues with creditors, and the influx of Chinese capital enabled it to resume operations (Mobbs 2011). The other major Chinese-owned mining operation in Zambia is the Collum Coal Mine, which, since the closure of the country's largest coal mine (Maamba Collieries), has become Zambia's only major coal producer.

In 2006, the Zambian government adopted a policy of establishing Multi-Facility Economic Zones (MFEZs). The objective of the MFEZs is to promote exports, manufacturing and technology transfers. In 2008, the Chinese and Zambian governments signed an agreement to develop Zambia's first MFEZ and China's first economic processing zone in Africa, the Zambia–China Economic and Trade Cooperation Zone (ZCCZ), on 1158 ha of land within the 4100 ha Chambishi Mine mining area. The ZCCZ, developed and operated under the control of NFCA, will house six different mining sub-industries: mining and smelting, wire and cable processing, processing of derivate products, building materials manufacturers, mining support services and employee social infrastructure (ZCCZ 2011). The zone is expected to generate annual revenues in excess of US\$1.5 billion, provide 6000 jobs and generate approximately US\$1 billion in capital investments (ZCCZ 2011). Given plans to house more than 50 companies by 2013, 20 companies were expected to commence operations in the zone by the end of 2010 (ZDA 2010). Although the zone is open to companies from all nationalities, all companies that have been approved to operate

67 The smelter is a small-scale private Chinese investment named Liang Yun, with an annual production capacity of 200 tonnes of blister copper (Environmental Impact Assessment Liang Yun 2009, unpublished).

68 Interview with ECZ in Ndola, 1 December 2010; interview with Chingola District Council, 2 December 2010; interview with Kalulushi District Council, 2 December 2010.

in the zone are Chinese.<sup>69</sup> As a reflection of the predominance of Chinese economic interests in the zone, the ZCCZ website is only in Chinese. In 2010, ZCCZ commenced the development of another MFEZ located on 570 ha of land adjacent to Lusaka International Airport, to complement activities at the zone in Chambishi (ZJTIS 2010).

The big draw of these zones is the myriad of special incentives that operators are eligible for, from both the Zambian and Chinese sides. In Zambia, companies established in an MFEZ, for example, are eligible for income tax exemptions during the first 10 years of operations, exemptions on certain import duties and a number of capital expenditure allowances. In the case of NFCA, these incentives apply to most of its operations in Chambishi (e.g. CCS, Sino-Metals Leach, Sino-Acid). There has been much criticism within government over the approval of the smelter in the ZCCZ because it is not considered to be a 'pioneering industry' that would bring new capabilities and opportunities to Zambia. As one parliamentarian remarked, it is a form of 'tax apartheid' where one smelter receives various tax incentives while competing smelters outside the zone are not eligible for the same (Zambian Parliament 2009). Furthermore, the Chinese government also offers Chinese companies investing in the MFEZ various incentives, including concessionary loans from the China Development Bank and reduced tariffs on inputs purchased in China (ZCCZ 2011).

The ZCCZ can be expected to contribute to employment, value addition and foreign exchange earnings, and to generate much-needed investments in technologically intensive tertiary industries. However, the intensity of domestic industry linkages (both vertical and horizontal) will likely not be significant, despite such linkages being the underlying economic philosophy of the MFEZ (and of agglomeration economies more generally). Considering that the zone has so far been comprised exclusively of Chinese enterprises, most of which are auxiliary to and supportive of existing NFCA mining and smelting operations, the development could become an exclusive economic enclave of limited benefit to domestic corporations or the national economy. Consequently, the zone could become an

isolated 'spatial fix'<sup>70</sup> of foreign capital (and perhaps even cultural) accumulation, integrated more into the global than into the national or regional economy. Zambian-owned companies servicing the mine could be displaced by Chinese companies operating in the MFEZ, which are now participating in most areas of the copper value chain. Furthermore, in addition to the risk of transfer pricing as NFCA becomes increasingly vertically integrated, the government's capacity to generate revenues is undermined by the various economic incentives it offers.<sup>71</sup>

In recent years, the Zambian government has been reforming the sector's tax regime, causing concern among the country's large mining companies. Large numbers of companies refused payment of a windfall tax introduced in 2009 (causing it to eventually be revoked) and negotiated temporary tax waivers. NFCA was one of only three companies that paid the windfall tax to the government (PriceWaterhouseCoopers 2011), and there is no evidence of NFCA negotiating special incentives with the government. However, as a result of NFCA's investment commitments and the strategic relevance of Sino-Zambian diplomatic relations, the firm is said to maintain strong ties to central government, which various government officials at both district and regional levels claimed it exploits to its advantage behind closed doors. It is unclear whether the fact that only Chinese companies have established in the ZCCZ is a manifestation of this relationship.

During the past few years, Chinese involvement in Zambia's mining sector has attracted a great deal of attention due to reports of labour violations. A number of particularly public and high-profile incidents have contributed to negative perceptions of China among many Zambians. In 2005, for example, an explosives factory in Chambishi, partly owned by NFCA, exploded, killing more than 50 of its employees (all of which were Zambian) (BBC 2005). In the following year, the Chambishi Mine was

70 With the concept of 'spatial fix', Harvey argues that the accumulation of capital engenders a fundamental contradiction 'between the rising power to overcome space and the immobile spatial structure required for such a purpose' (Harvey 1985: 150, cited by Zhou *et al.*, 2010). For more detailed discussions on the topic, see Brenner (1999), Harvey (2001), and Ross (2007).

71 Haglund (2010) notes that NFCA was the only one of five mines he studied that did not provide the Zambia Revenue Authority with audited accounts.

69 Interview with the Ministry of Commerce, Trade, and Industry, 9 November 2010.

party to another incident, where five employees were shot by the police following a worker protest over NFCA's failure to increase salaries (AFP 2006). In 2008, the CCS dismissed more than 500 unionised employees following a strike over labour conditions (ZNBC 2008). In October 2010, Chinese managers at the Collum Coal Mine shot and injured 11 of the mine's employees during a protest by its (unarmed) employees over poor pay and safety conditions (Bower 2010). The Zambian government has been strongly criticised, particularly by civil society and the opposition party, over its failure to condemn and act against indiscretions by Chinese companies – due, it is said, to fear of unhinging diplomatic relations (Mundy 2010).

While these may have been isolated incidents, they do illustrate the strained working relations between the management of some Chinese firms and local employees. Muneku (2009) argues that, due to Zambia's strict labour laws and strong trade unions for mine workers, Chinese companies have tended towards casualisation of the workforce. In 2007, only 49% of the 2100 employees at the Chambishi Mines were on permanent or fixed-term contracts, with most employees hired through Chinese sub-contractors.<sup>72</sup> Casual employees are not covered by the collective agreement that is negotiated annually between NFCA and the trade unions and are therefore generally paid lower wages, receive fewer benefits and enjoy less job security than unionised employees. However, the proportion of employees employed directly versus via contractors is no different in the other major mines (ILO 2010). Where NFCA does perhaps stand out is that both its unionised and casual employees are said to be the lowest paid in the industry (Muneku 2009). While NFCA is accused of inconsistently complying with Zambia's occupational health and safety regulations, standards at NFCA have reportedly come on par with the industry in recent years (Muneku 2009).<sup>73</sup> For example, with regard to accident rates, in 2008 Chambishi did not deviate greatly from the industry average.

While the question of the singularity of labour practices of Chinese firm remains inconclusive, investments from NFCA and Jinchuan have contributed to employment generation and

employment stability. For example, when between 2008 and 2009 most mines laid off employees, Chinese companies were actually generating employment. The two largest mines dismissed almost 14 000 employees, while Chambishi Mines increased its workforce (ILO 2010). Furthermore, when NFCA acquired the Luanshya Mine and Jinchuan acquired the Munali Nickel Mine (in the midst of the financial crisis), they rehired almost all employees that had been dismissed when the previous owners placed the mines under care and maintenance (Thole 2010). The fact that Chinese investors upheld their commitments during the financial crisis while most other mines downscaled has given these firms considerable political mileage. It could thus be argued that Chinese firms have a comparatively greater capacity than other firms to sustain their commitments and operations when faced by unfavourable economic conditions. As Haglund (2009) comments, Chinese firms can provide greater long-term stability because of their greater security of access to comparatively cheap financial capital.

Despite limited evidence of labour irregularities, NFCA does not appear to have formulated comprehensive corporate social responsibility (CSR) practices or made concerted efforts to be a 'good neighbour'. When the mining industry collapsed during the 1980s and 1990s, most unemployed mine workers were forced to turn to alternative livelihood activities. Many employees commenced small-scale farming in the region, leading to massive encroachment onto ZCCM land reserved for mining activities.<sup>74</sup> Although precise numbers are unavailable, our research found that most of the land not used by NFCA is actively farmed. As further expansion of NFCA operations in the area is expected for 2011, most farmers living on these lands have been asked to vacate, without being offered any form of compensation.<sup>75</sup> According to the Kalulushi District Council, NFCA was not prepared to engage in resettlement and rehabilitation of those displaced. As a result, the Council is now charged with their resettlement and, with NFCA's refusal to do so, will bear the cost. On the basis of this evident refusal on the part of NFCA to assume responsibility for engaging and accommodating

<sup>72</sup> Derived from Mines Safety Department data cited in ILO (2010).

<sup>73</sup> Interview with the Mines Safety Department in Ndola, 30 November 2010.

<sup>74</sup> Interview with the Forestry Commission in Ndola, 30 November 2010; interview with the Environmental Council of Zambia in Ndola, 1 December 2010.

<sup>75</sup> Interview with Kalulushi District Council, 2 December 2010; interviews with various farmers in the Chambishi concession area, 1 December 2010.



surrounding communities, one can question the comprehensiveness of the company's CSR policies. Furthermore, the Kalulushi District Council expressed its dismay at the lack of support from the company, as the largest employer in the district, towards social infrastructure in the area. Some of the other major mines have been known to actively engage and support communities in the area. Haglund (2009) argues that since Chinese mining companies in Zambia are mostly state-owned and their activities shaped by geopolitical considerations, in their pursuit of a stable operating environment they pursue close links with the centralised state bureaucracy rather than with local stakeholders, thus relying on the state to 'broker their social contract' (p. 9). The intensity of this relationship is illustrated by the NFCA refusal in 2010 to pay US\$1.75 million in property taxes to the District Council. According to the District Councillor, NFCA claimed that it had not yet broken even and could not afford to pay the tax. When the District Council sought support from the Ministry of Commerce, it was told to leave the Chinese alone 'as it is against government policy to quarrel with them'.<sup>76</sup>

While there is scarce evidence to suggest that NFCA is less environmentally responsible than other mines, NFCA's activities may prove to have unique indirect impacts. For example, around the Copperbelt are large numbers of large tailing dumps that have not been processed or disposed of. When the ZCCM privatised its mines, most of these dumps were not acquired by the companies and were left under the control of ZCCM. Having the technological capacity to extract the remaining copper, NFCA is now re-processing these tailings. Although it is illegal, many small-scale miners are now mining these dumps to feed the demand of re-processors; NFCA cannot legally buy tailings from unregistered miners, but it reportedly acquires most materials from small-scale Chinese traders. According to a group of illegal miners near a dump in the town of Chingola, most illegally mined tailings are purchased by Chinese merchants, who in turn sell them to NFCA. This may be seen as a positive development in the sense of making efficient use of mineral resources and generating employment opportunities from them. However, numerous small-scale Chinese copper smelters were also said to be purchasing the tailings. Based on Environmental Council of Zambia (ECZ) records, only one of these Chinese smelters

had obtained an Environmental Permit. Although rumours abound of large numbers of illegal smelters in Kitwe and Chingola, we were only able to locate one Chinese smelter that was operating without a permit. With the mining industry renowned for its negative environmental impacts, most notably air and water pollution and related impacts on human health (Mwitwa *et al.* in press), the absence of any environmental controls on these activities is of concern.

Although large-scale Chinese mining operations are currently limited to those operated by NFCA and Jinchuan, a rapid future expansion in Chinese mining investments can be anticipated given the number of Chinese companies prospecting for minerals around Zambia. The most extensive prospecting is being conducted by Zhonghui, with prospecting licences for a total 656 000 ha in Luapula, Copperbelt, Central and North-Western Provinces. The company has pledged to invest US\$5.3 billion into its mining activities over the next 10 years, focusing its investment efforts initially in the area of Mwinilunga in North-Western Province.<sup>77</sup> The deal, reportedly involving the Chinese Eximbank, is said to include a copper smelter and a hydropower station, and is expected to generate up to 34 000 jobs (Mulenga 2009). However, under the 2008 Mines and Minerals Act, one company cannot have prospecting licences for a total area exceeding 500 000 ha. With Zhonghui operating under three different company names, including Wang Wang Mining and Golden Lion Mining, it has evidently been able to circumvent these restrictions.

There are certainly a number of long-term risks associated with these activities. To begin with, most of the exploration licences allocated to Chinese firms are located in heavily forested outpost areas, notably North-Western Province.<sup>78</sup> Although exploration activities (e.g. trenching) may have minimal environmental impact because of their limited scale, the building of roads would generate major indirect effects by opening forests to other users. Should these companies decide to commence large-scale mining activities in these areas, it would also have significant direct and indirect environmental impacts. Both forms of impact in poorly accessible areas could also overwhelm local authorities and their capacity to regulate these economic activities.

<sup>76</sup> Interview with the Kalulushi District Council, 2 December 2010.

<sup>77</sup> Interview with the ZDA, 11 November 2010.

<sup>78</sup> Database of large-scale mining concessions, Ministry of Mines, unpublished.

## Zimbabwe

Approximately 90% of chromite ore processing in Zimbabwe is carried out by the chrome company Zimasco, which was formerly owned by Union Carbide. In 2007, 73% of Zimasco was purchased by Sinosteel Corporation with support from the China–Africa Development Fund. Sinosteel is a Chinese state-owned enterprise, mainly engaged in the mining, processing and trading of metallurgical mineral resources. Although Zimasco closed its smelters in late 2008 as a result of low global chrome prices and economic instability in Zimbabwe, it reopened two of its six smelters again in April 2009 with a US\$7 million working capital injection from Sinosteel. With chrome prices on the rebound, five furnaces were again operating at full capacity in 2010, with the other furnace still undergoing refurbishment. In addition to processing, Zimasco holds the largest chromite mining concessions in Zimbabwe, extending across the Great Dyke and in the Shurugwi greenstone belt. Most of the chromite ores mined from the concessions are mined not by Zimasco itself but by so-called ‘tributors’. The tributors range from manual to fully mechanised mining operations that are contracted to mine the Zimasco concessions and supply chromite ores to Zimasco furnaces. Approximately 63% of Zimasco’s chromite is obtained from these tributors.<sup>79</sup> Although not officially reported, many small Chinese chrome-processing operations were identified in the Southern Dyke area around the city Gweru, all of which apparently commenced their operations within the past two years. At least four companies operated furnaces and at least another seven companies operated so-called ‘spiral ore washers’ that help to concentrate the chromite ore.<sup>80</sup>

While Zimasco appears, to date, to be the only large-scale chromium operation, several new chromium-related projects have been announced and/or are coming under development. In 2005, Star Communications, a subsidiary of the Chinese state-owned Hebei Broadcasting Bureau, reportedly signed an agreement with the state-owned Zimbabwe Mining Development Corporation (ZMDC) for the rights to ZMDC’s chrome claims in Rutala on the Great Dyke (Africa Research Bulletin 2006, Herald 2006). This joint-venture agreement, with Star Communications as the majority shareholder, was

79 Interview Zimasco, 21 November 2010.

80 Interview with Ministry of Mines, Gweru, 24 November 2010; interview with EMA, Gweru, 24 November 2010.

said to operationalise a deal involving the supply of US\$63 million worth of transmitters to Zimbabwe Transmedia Corporation to upgrade its national radio and television coverage (China Monitor 2005). However, in 2009 it was reported that the concession concerned had in fact been allocated to another Chinese company, Wamboia Mining (Africa Confidential 2009). In 2006, as part of a barter deal, two Chinese state-owned companies, China National Construction and Agricultural Machinery Import and Export Corporation (CMAC) and China National Aero-Technology Import and Export Corporation (CATIC), reportedly signed a US\$1.3 billion memorandum of understanding to construct power facilities across the country in exchange for chrome (BBC 2006, Holslag *et al.* 2007). In another deal with China, the ZMDC in 2006 reportedly formed a joint venture with the China’s state-owned China North Industries Group (NORINCO) and Zimbabwe Defence Industries Limited to explore for chromium in Ngezi District (Bloomberg 2006).<sup>81</sup> NORINCO reportedly acquired 60% of the joint venture’s shareholdings, with the two domestic counterparts each controlling 20% (Bloomberg 2006). In a joint-venture deal between the ZMDC and the Chinese private sector, the infrastructure contracting company China Jiangxi International Corporation (CJIC) agreed in 2008 to commit US\$200 million to developing two chromite mines in ZMDC concessions in the Midlands region and the Zambezi Valley (Bloomberg 2008, Africa Confidential 2009).

Two of the five companies operating in the Marange diamond fields in West Zimbabwe, Anjin and Sino Zimbabwe Holdings, are Chinese. Their operations started in the past year, and, given the estimated US\$800 billion worth of diamond deposits, are likely to be highly profitable. Other active investments include the Sino-Zimbabwe Cement Plant,<sup>82</sup> a joint venture between the Chinese state-owned China Building Material Industrial Corporation (SINOMA) and Zimbabwe’s Industrial Development Corporation, and the two coke processors in

81 NORINCO is best known for its production of high-tech defence products. It is one of 10 Chinese defence companies that report to the Chinese State Council. In 2000, the company sold US\$65.9 million worth of arms to Zimbabwe. In 2003, the US imposed sanctions on the company for weapons proliferation, forbidding it from exporting to the US and having dealings with US government agencies (Nuclear Threat Initiative 2004).

82 This is a different company from the Sino-Zimbabwe Development Company active in diamond mining and cotton ginning.

Hwange, Southern Mining and Taiyuan Sanxing Coal Gasification Company. Some respondents also claim that many, mostly unlicensed, Chinese gold mining and processing companies are active across the country, although there were no opportunities to validate these claims. Although large Chinese investments are occasionally announced with much fanfare, as in the chrome sector, few such investments appear to have materialised. Examples of such investments include the company Winboa Shinex for copper, Jinchuan Mining for nickel, and more recently Humboi and the Eximbank for platinum. Muleya (2011) reported that the Chinese Eximbank offered the Zimbabwe government US\$3 billion for the rights to the much coveted Selous and Northfields platinum reserves, whose deposits are estimated to be worth between US\$30 billion and US\$40 billion. As part of the financing conditions, it reportedly requested that the Zimbabwean government give up its revenues from Chinese diamond mining activities (e.g. in the form of taxes and royalties). However, as part of a US\$200 million export credit facility for farm equipment provided by Eximbank in 2007, the same platinum reserves had already been put up as collateral (Manthorpe 2011, Muleya 2011). With Zimbabwe eagerly repaying the loan to unencumber the reserves, China is presumably attempting to entice the country to sign over its rights to the reserves altogether.

Despite the many agreements signed with Chinese companies, the largest active Chinese investment in the mining sector to date is Zimasco. Since its acquisition by Sinosteel in 2007, labour conditions, CSR policies and the company's strict environmental management practices have reportedly remained unchanged.<sup>83</sup> For instance, there has been no worker retrenchment or influx of Chinese employees. According to anonymous sources at the company, the only Chinese national working at the company was the newly appointed company director. Similar to NFCA in Zambia, this investment has also contributed significantly towards restoring production capacity during a time when global economic conditions deterred investment and caused many mining operations to close for extended periods of time. Sinosteel appears to have invested heavily into consolidating the company's market position and stabilising operating conditions. For example, it is investing US\$37 million into reconstructing one of its furnaces and US\$200 million into constructing two additional furnaces and a sintering plant, which

will increase processing capacity by 50% (Sutton 2010). Furthermore, since Sinosteel took over operations, it has made deals with energy supply companies to enhance their reliability and capacity to supply. For instance, it provided US\$15 million to finance a major refurbishment of the Hwange Power Station, operated by the Zimbabwe Electricity Supply Authority, which had over the years struggled to meet electricity demands due to shortages of foreign exchange (Herald 2008a). Additionally, it financed the repairs of the broken dragline of Zimbabwe's largest colliery, the Hwange Colliery Company, to the tune of US\$2.5 million, in exchange for coal and coke supplies (Herald 2008b).<sup>84</sup> However, due to persistent supply constraints with the Hwange Colliery Company, Zimasco has been sourcing more of its coal and coke from two new Chinese coke producers in Hwange, the Taiyuan Sanxing Coal Gasification Company and South Mining Company. Both companies are targeting affiliated mines in the Democratic Republic of Congo, where coal is comparatively scarce, suggesting an interest in securing supplies in case Hwange Colliery deliveries fall through.<sup>85</sup>

The Chinese presence in the mining sector is not limited to large-scale investments. Recent years have witnessed a proliferation of small-scale informal Chinese companies in the sector. The impacts associated with these operations, most of which concentrate on processing but some also on mining, have been noted with concern. None of these companies has a legal claim to mine for chrome. Instead, the companies reportedly acquire most of the chromite ores from small-scale chrome miners. These are typically on the basis of arm's length agreements, at a fixed price (US\$25 per tonne of ore in 2010). Although small-scale miners can sell to Zimasco at a price of US\$40 per tonne of ore, all the interviewed miners had a preference for selling to the smaller-scale Chinese operations. It was claimed that since Zimasco payments generally take months and are solely transacted through the official banking system, small-scale miners rather opt for the Chinese processors' 'cash in hand' method of payment (a trend corroborated by Zimasco). Although one other South African buyer was identified, almost all the ore from small-scale miners in the area is said to be bought by these Chinese operators. Since there is apparently no limit to the quantity of chromite

83 CIFOR interview with the EMA, 3 November 2010.

84 This and the company's lack of finances were among the main reasons for Zimbabwe's decline in coal production.

85 Interview with Zimasco, 22 November 2010.

ore that these processors are capable of purchasing, the area has witnessed a major boom in small-scale chrome mining over the past two years as miners respond to a new market opportunity. Uncertain how to regulate these Chinese processors, the regional Ministry of Mines and the Environmental Management Agency (EMA) expressed some discomfort with this trend. They claim that more than 60% of small-scale chromite ore miners operate illegally, a trend propelled by Chinese demand. This proliferation of illegal operations has generated a new market outlet for undercapitalised Zimbabweans, reportedly alleviating the administrative barriers which have served as a barrier to market entry by smaller operators. This is in sharp contrast with Zimasco, which reportedly exerts considerable influence over its tributors to ensure compliance with national regulations. While these tributors are generally required to meet company environmental, health and safety standards, there is essentially no corporate or regulatory control over non-contracted miners. While this trend towards a more deconcentrated chromium sector is likely to have a positive impact on livelihoods, it is also certain to undermine government revenues from Zimbabwe's non-renewable resources.

The environmental footprint of small-scale illegal miners is a concern for government agencies, which blame them for many of the dry season forest fires in the country because they tend to burn the vegetation to facilitate their operations. Moreover, as the vast majority of small-scale chromite miners practise open-pit mining, most of the top soil is stripped and mined sites are simply abandoned, leaving the land permanently degraded. Furthermore, due to the relative abundance and ease of mining chromite from riverbeds, considerable damage is caused to riparian zones. Operations result in enormous amounts of waste sand, gravel and rock dumps, which contribute to the siltation of river channels and dams. Disturbance to the vegetation can expedite erosion, damage fish and wildlife habitat, and alter water quantity and quality.

While the rise of small-scale Chinese processors may contribute indirectly to environmental degradation through their sourcing practices, there is indication of more direct impacts also. As previously mentioned, none of the processors has access to mining claims. However, during field visits to small-scale mines, there was some evidence of Chinese involvement in mining. In one case, a Chinese processor was financing the application for a mining licence in exchange for an exclusive chromite ore supply agreement. In another case, a Chinese processor was found to be actively mining someone else's claim. While most small-scale miners typically use picks and shovels, this claim was being mined with heavy equipment imported from China. Since the Ministry of Mines stopped allocating mining rights in 2003 following pervasive conflicts over overlapping rights, it can be assumed that the Chinese processors sought to gain control over mining rights by entering into agreements with existing rights holders. The regional Ministry of Mines was sceptical as to whether these Chinese processors had obtained the necessary permits (notably investment licences and export permits) or acquired status as Zimbabwean companies – required to apply for mining rights under the 1996 Minerals and Mines Act. The second step also requires registration with the tax authorities, suggesting that government revenue is at stake. In 2010, the EMA issued fines and stop orders to two Chinese companies for mining chromite ores without permits in the Northern Great Dyke. With the companies failing to either pay the fines or cease their mining operations, EMA sources insinuated that the companies were politically well connected (RadioVOP 2010). In other reports, Chinese companies were said to be mining chromite illegally in ecologically sensitive and protected areas, such as the Mavuradona Wilderness Conservancy and the Nyamaneche Game Sanctuary. This is reportedly causing extensive vegetation clearance and soil stripping because of the crude mining methods employed (Moyo 2010, RadioVOP 2010, Sithole 2010). The Zimbabwe Conservation Task Force (ZCTF) claimed that illegal Chinese chrome miners in the Nyamaneche Game Sanctuary were also responsible for the poaching of six rhinoceros in the park in December 2010 (Moyo 2010).

## 6. Conclusions and implications for future research

### 6.1 Conclusions

This research sought to assess patterns of Chinese aid and Sino-African trade and investment in the miombo woodland countries of southern Africa and their social, economic and environmental implications in the agricultural, forestry and mining sectors. Review of published data and literature, key informant interviews with public, private sector and civil society actors and field-based scoping paint a picture of a large and growing presence of Chinese aid, trade, investment and influence in the region, with the possible exception of Zimbabwe, where political relations are strong but financial flows in the form of aid and investment comparatively weak. The growing influence of Chinese development assistance and corporate engagement in Africa fall under a wider umbrella of economic and diplomatic cooperation enshrined within the Forum on China–Africa Cooperation, the Forum on Economic and Trade Cooperation between China and Portuguese-speaking Countries (in the case of Mozambique) and a number of bilateral trade, investment protection and aid agreements. Chinese ODA was found to be largely in the form of loans rather than grants, with levels of concessionality higher in Mozambique and Zambia than in Zimbabwe, a pattern that is likely related to Zimbabwe's limited capacity to repay and guarantee Chinese loans. The Chinese government's preference for project-based support to African countries and the prominence of public support to private Chinese firms were raised as concerns, given the likely lack of alignment with national development priorities, risks to debt sustainability and competition with domestic industries. China also represents an important trade destination for regional exports, recently overtaking South Africa as the second largest export partner for both Mozambique and Zambia and reaching around 18% of Zimbabwe's total exports. Key exports include wood and wood products (Mozambique), metals (all countries) and agricultural commodities (all countries). Chinese FDI, stimulated by China's 'Going Out' or 'Going Global' strategy, is equally significant. Mining is clearly receiving the majority of investment capital in Zambia and Mozambique, for which sector-disaggregated data are available. Recent Chinese investments in Zimbabwe are much smaller,

with Chinese FDI stock accounting for less than 4% of the total.

The presence of Chinese firms in the agricultural sector was found to vary between countries, being stronger in trade than in production *per se*. Chinese markets were found to have a defining role in agricultural trade in all countries, particularly for sesame (in the case of Mozambique), tobacco (Zambia and Zimbabwe) and cotton (Zimbabwe). Where Chinese firms are involved in production, their role is largely indirect, occurring through contract farming schemes, as is the case in cotton and tobacco in Zimbabwe and cotton in Zambia. Mozambique and Zambia are also home to two sizeable Chinese investments in biofuels. While there is anecdotal evidence of rural livelihood benefits from the Chinese presence in the sector, more research is needed to explore these effects, the ecological consequences of an expanding Chinese market and the extent to which Chinese firms and markets are playing a defining role – or are just among multiple actors in the sector.

In the forestry sector, Chinese firms and markets have a defining presence in Mozambique only. China's share of Mozambican timber exports grew from 10% to 82% in the 2001–2010 period. While a number of large-scale investors have recently entered Mozambique to invest in timber plantations, the presence of Chinese firms and markets was observed only in timber harvested from natural forests. Many irregularities have been observed in published reports and during scoping, including a continued predominance of unprocessed logs in trade despite a log export ban, with possible negative consequences for revenue, added value, job creation and forest sustainability. While irregularities in exports associated with Chinese firms have also been reported in Zambia, more research is needed to confirm these observations.

In the mining sector, Chinese trade and investment were found to be significant for all countries. The most notable presence is in Zambia, where Chinese investments have helped to get a mining sector crippled by the financial crisis back on its feet and

to weather the recent financial crisis, a time when firms from other countries scaled back operations and retrenched a large proportion of their workforce. However, poor labour relations, displacement of communities with no compensation and overly generous incentives undermining the capacity of the country to capitalise upon its resources through private investment were raised as key concerns linked to Chinese investments in the sector. In Zimbabwe, Chinese investments in chrome processing have enabled an industry adversely affected by low international prices to recover and Zimbabwe's largest chrome mining company to recapitalise. However, large numbers of Chinese chrome processors purchase illegally mined chromite ores, leading to a surge in illegal chrome mining. While this is likely to have positive livelihood impacts in the short term by reducing the administrative barriers to market entry historically faced by smaller operators in the country, it has certainly undermined tax revenues and concerns have been raised over its ecological impacts, most notably in riparian zones. Moreover, Zimbabwe is mortgaging many of its mining assets to Chinese companies as collateral for Chinese development assistance and loans. In Mozambique, while foreign investors of any country of origin had a limited formal presence until very recently, recent reforms to attract investments have led to a rapid influx of new investors. Among these, large Chinese investors play a relatively minor role compared with the large Indian, Australian and Brazilian investors in the recent 'Tete coal rush', yet many of the recent prospecting licences have been issued to Chinese firms.

Findings from this cross-country, cross-sectoral scoping phase suggest a marked presence of Chinese state-owned and private firms and Chinese diplomatic influence in all countries. This has led to significant contributions to roads, buildings, dams and other public infrastructure; ratcheted up private sector investment in the mining industry, and expanded international trade. Success was also observed in linking small-scale operators in all sectors to international markets. Yet concerns were raised about public and private sector engagements alike, and the extent to which they are contributing to or undermining long-term development prospects and environmental sustainability. The picture that is emerging is thus one of trade-offs, between economic and environmental outcomes and between current benefits and risks of future indebtedness. However, given the caveats raised above about the questionable quality of trade and investment data and the high

level of dependence on stakeholder perceptions and secondary sources, much of the information supporting these observations remains to be substantiated and nuanced through further research.

## 6.2 Implications for future research

Preliminary findings suggest a few productive lines of inquiry that could help to achieve the project's purposes of advancing understanding of the social, economic and environmental impacts of Chinese investment in commodities affecting forests, and of strengthening the capacity of decision-makers to enact reforms aimed at leveraging more equitable and sustainable outcomes. While country- and sector-specific findings suggest the suitability of tailored research, a few general lines of inquiry can also be distilled for the sub-region. This section begins by presenting the overarching themes for further inquiry, and then examines country-specific research themes.

### 6.2.1 Overarching lines of inquiry

#### **The impact of China's engagement with small-scale farmers, miners and pit-saw operators, in both formal and informal sectors**

In all countries researched, Chinese companies were found to be actively engaging small-scale upstream operators to produce or source commodities for export. On the one hand, this could prove beneficial to national poverty alleviation efforts by linking small-scale operators to international markets. On the other hand, many view this business model as emblematic of Chinese economic operators' apparent preference for low-capital investments which could undermine long-term growth prospects, pose risks of impermanency and enhance competition with smaller domestic industries. This, together with the purported indifference shown by many Chinese buyers towards issues of sustainability, could lead to uncomfortable trade-offs and suboptimal outcomes, particularly where these activities promote illegality (e.g. chromite mining, timber harvesting) and environmental regulations are inadequate (e.g. cotton, timber). More in-depth research into the drivers and economic, social and environmental impacts of these interactions would provide valuable insights into the value of these types of low-capital investments. Comparative observations could be drawn across sectors and commodities, including:

(1) chromite mining and tobacco<sup>86</sup> in Zimbabwe; (2) timber harvesting in Mozambique and Zambia; and (3) sesamum in Mozambique. Comparative analysis could also be carried out with larger-scale investments, to identify those business models with the greatest potential to contribute to poverty alleviation and sustainability.

### **The anatomy, impact and trade-offs associated with 'resource swaps' and other high-stake deals and transactions in sectors of interest**

Numerous high-stake deals (involving grants, loans, trade and investment) and 'resource swap' agreements have been signed between China and the focal countries, many of which have been concretised. While investigative research into the terms and conditions and impacts of these deals would be difficult, it could yield highly informative findings around issues involving high levels of speculation and public concern. It would provide insights into how resource-poor governments with variable credit ratings fail or succeed in capturing foreign capital, under what conditions this is achieved by collateralising and/or transferring rights over natural resources, on what terms and with what implications. This topic is of particular relevance to the mining sector, but also to select deals involving large-scale land transfers to investors. A second dimension of this question concerns transactions brokered outside formal channels, between economic and political elites on the one hand and private actors and interests on the other. Research into conflicts of interest between the public functions and private interests of government actors, and the conditions under which they are allowed to occur, would help provide insights into a critical dimension of resource governance. Considering that such agreements or transactions often take place at the highest levels of government, it is conceivable that private sector operators that benefit from these agreements are not subject in practice to the same environmental laws and standards that other operators are required to comply with. A comparative case study approach exploring the consequences of grievances raised and their outcomes could help to shed light on the impartiality of law enforcement efforts and factors affecting the same, and link the political economics of high-level agreements (aid, investment, trade)

with regulatory behaviours in specific sectors affecting forests.

### **A comparative assessment of public sector support to private firms operating abroad, and their economic, social and environmental consequences**

With Chinese firms increasingly a feature in rural landscapes and widespread concerns about Chinese firms competing with domestic firms for economic opportunities and public tenders, questions about the causal factors behind this competitiveness are paramount. Key factors raised during scoping include uneven compliance with social and environmental standards and public support to private firms operating abroad (e.g. through export credits). Rather than serving as a stand-alone theme, this research would be best conducted in the context of sector-specific case studies in each focal country. It would include a detailed assessment of legislation and incentives provided by state institutions in China and other countries whose firms have an established presence in the sector, as well as firm-based research on the nature and level of support received from public institutions in their home countries. It would also include a case study approach to document cases where Chinese and non-Chinese firms have been able to secure concessions, market opportunities or the loyalty of small-scale operators and the causal factors involved. To contextualise findings, it would also include a historical look at the political-economic system and its role in structuring capital accumulation in the public and private sectors.

## **6.2.2 Country-specific research**

### **Mozambique**

The following themes are of interest for more in-depth research in the forestry sector in Mozambique.

- Published reports from the sector make a number of claims about Chinese operators, and the merits and demerits of the two main timber harvesting regimes; however, these are poorly substantiated by evidence. This research theme would aim to make a balanced assessment of the socio-economic and ecological impacts of the two main business models in the forestry sector (concessions and simple licences), inter-firm differences within each model (e.g. direct vs. indirect harvesting and forest management,

<sup>86</sup> Although cotton would be a good choice, the documented relationship between tobacco cultivation, wood consumption and deforestation makes this a better choice.

levels of legality) and the level of participation in each model by firms and actors from different countries of origin. It would also assess the factors conditioning the adoption of each model, including levels of knowledge, capital and political connections.

- Mozambique has a stated policy goal of moving away from simple licences towards concessions, as a means of enhancing value addition and employment creation in the sector while promoting more sustainable forest management. However, undermining this goal are constraints faced by economic agents in moving from a regime requiring relatively low start-up costs to one requiring more significant levels of investment, by the tendency to invest the bare minimum to comply with the law and by weak law enforcement. This research theme would consist of an in-depth analysis of sector governance, with a focus on the concession system and key constraints to realising sector aims. A comparative analysis of concessions at provincial level would enable a parallel assessment of the extent to which Chinese concessionaires are unique in the way they interact with the current governance system, while identifying the key strengths and loopholes in the system vis-à-vis sector aims.
- The defining role of the end market on timber sourcing practices and the observed differences in market demands from China and other export destinations (most notably, Tanzania) suggest that research characterising international trade flows (routing, actors involved, value capture at different stages) and related demand (volume, product), as well as observed irregularities along the way, could go a long way in distilling ways to enhance domestic value capture and better govern trade flows in the remote northern provinces.
- Additional scoping is needed to explore the dynamics associated with the recent surge and slump in trade in sesamum with China, and the extent to which this trend has had social or environmental impacts of sufficient significance to merit more in-depth research.

### Zambia

The following themes are of interest for more in-depth research in Zambia.

- A comparative assessment of the levels of legality in exports of minerals and timber among Chinese

and non-Chinese firms, and to Chinese and non-Chinese markets, and its implications for local livelihoods, forest management and revenue generation. This would consist of a comparison not only of companies of different countries of origin, but also of companies servicing different end markets.

- Governance of large-scale land and resource acquisitions (e.g. environmental protection, land and labour rights) and their social and ecological impacts under large-scale land acquisitions, particularly in remote areas. Interest in this theme derives from the large scale of Chinese investments in the mining and agricultural sectors, and reports of the Zambian government yielding easily to Chinese investors. Of relevance to forests are the degrees of compliance of companies of different nationalities or government intermediaries acting on their behalf with legislated processes of land acquisition or environmental controls, and the related implications for forests and livelihoods.

### Zimbabwe

The following themes are of interest for more in-depth research in Zimbabwe.

- A comparative analysis of the nature and extent of foreign participation in the informal mining sector (e.g. extraction, procurement, processing) and the unique environmental, social, and economic impacts of that participation. Due to the scale and geographical dispersion of informal mining activities, the government has much less capacity to regulate these activities than large-scale mining investments. As such, understanding the processes that drive and enable the informal mining sector (e.g. Chinese off-take and finance, or a demand to overcome administrative barriers to market entry) and enhance or undermine any socio-economic benefits from mining would contribute to efforts to enhance the social, economic and environmental performance of the industry.
- Numerous 'resource swap' agreements have been signed between China and Zimbabwe, arguably to minimise China's exposure to Zimbabwe's high credit default risk by gaining access to important non-renewable resources. At present there is little evidence to suggest that similar deals have been negotiated in Mozambique and Zambia. Similar negotiations may be underway but with little disclosure, or perhaps Chinese creditors have



not imposed similar financing conditions on these countries because of the lower associated risk exposure. Further research in Zimbabwe and elsewhere would help to clarify the extent to which these are unique to Zimbabwe or more generalised. Should such agreements be unique to Zimbabwe, research into these

deals would provide insight into how resource-poor governments in a climate of untenable political and structural risk fail or succeed in capturing foreign capital by collateralising and/or transferring rights over natural resources, and whether such strategies provide long-term developmental pay-offs.

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China's diplomatic and economic presence in Africa has grown considerably in recent years. From the establishment of the Forum on China–Africa Cooperation (FOCAC) and efforts to strengthen diplomatic, cultural and economic relations with African nations, to the rapid growth in Chinese foreign direct investment (FDI) and bilateral trade, this relationship is likely to continue to play a defining role in African economies. These trends are important for African nations that see this relationship as an opportunity to catalyse much-needed investments in infrastructure and industry, to stimulate job creation and exports, and to counter-balance the historical influence of western nations. Yet a perceived lack of transparency in Sino-African diplomacy (and related lending conditionalities) and lesser concern for social and environmental impacts among Chinese investors has raised concerns about the potential risks of this emerging partnership. In the absence of strong evidence on the uniqueness of Chinese diplomatic and economic relations in specific countries in the region and related impacts, it is impossible to assess the opportunities and risks posed by China's growing influence in the region.

This report, and the wider project in which it is embedded, aims to shed light on this debate by examining the Chinese influence on the forestry sector in Congo Basin and Miombo woodland countries. Through a comparative analysis of patterns of aid, trade and investment with Chinese and other 'development partners', and their social, economic and environmental implications for key sectors shaping African forests (agriculture, forestry, mining), the project aims to explore the nuances behind the emerging Sino-African partnership. Towards this end, this report explores the diplomatic and economic relations between China and three miombo woodland countries (Mozambique, Zambia and Zimbabwe). Emphasis is placed on the identification of key patterns of Sino-African trade and investment in sectors of interest, as a means of identifying trends of importance to forests and exploring key themes for more in-depth research. Initial findings suggest that while Chinese aid, trade and investment are playing a significant and often defining role in the sectors of interest, the level and mode of influence – and anticipated impacts on forests – vary considerably across countries and sectors. The report also highlights the trade-offs that often accompany the activities of state and non-state, small- and large-scale operators alike.

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