

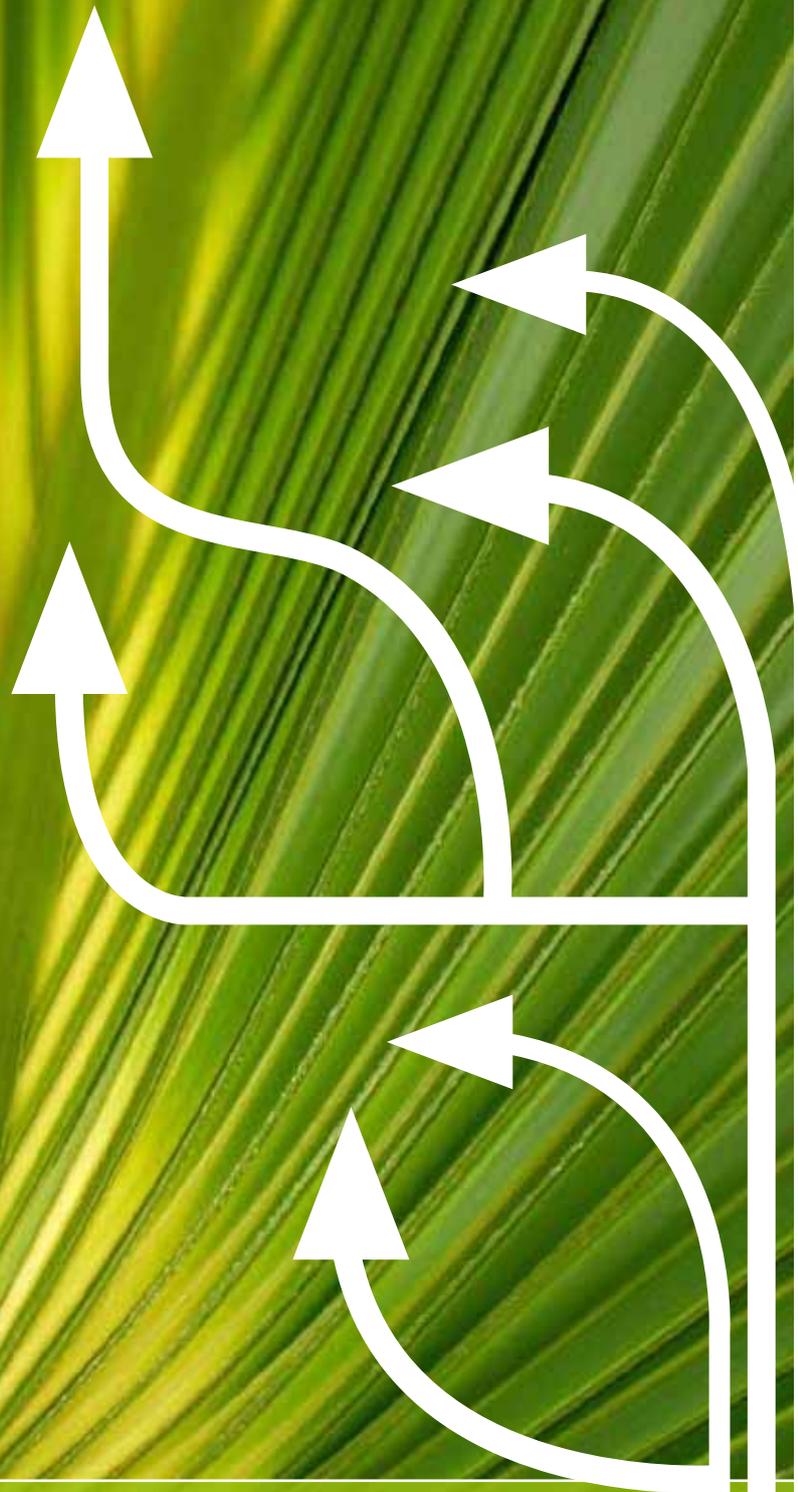


WWF

**BUSINESS
REPORT**

HoB NI

2011



BUSINESS SOLUTIONS: DELIVERING THE HEART OF BORNEO DECLARATION

FOCUS ON FORESTRY, PALM OIL AND MINING

PROJECT ASSISTANCE PROVIDED BY PWC

HEART OF BORNEO - GREEN BUSINESS NETWORK

At WWF we believe in finding solutions to environmental challenges by working together with business, government and communities.

For many years we've been dedicated to supporting the Heart of Borneo (HoB) Declaration made by the governments of Indonesia, Malaysia and Brunei in 2007 to conserve and sustainably manage 22 million hectares of largely intact natural forests.

We recognise that business plays a vital role, that's why we've established the HoB Green Business Network (GBN) to catalyse business action on conservation and sustainable development in the HoB.

GBN aims to provide tools and support to businesses willing to work towards a sustainable future for the HoB. By working together we can secure the natural resources on which your business relies and develop an international reputation for the HoB as a place to do green and sustainable business.

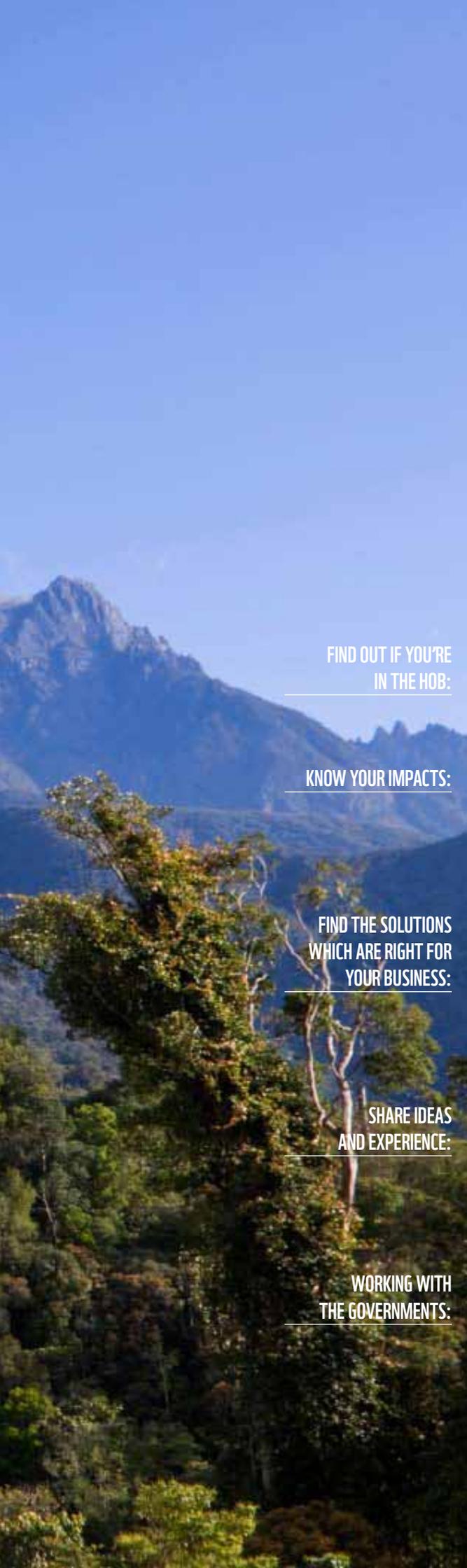
We aim to work with:

Businesses operating, financing or sourcing materials in the HoB: The GBN is dedicated to communicating the information that your business needs to know; how will the government define and enforce 'sustainable land use' in your sector? How can you access carbon financing by improving sustainable management in your concession? What are others in your sector doing on sustainability?

We also aim to develop and communicate a range of solutions to sustainable and profitable business development in the HoB. This report accompanies the launch of Heart of Borneo Green Business Network and is aimed in particular at three key business sectors in the HoB: forestry, palm oil and mining.

Other organisations committed to supporting forests, climate and communities: The GBN is being initiated by WWF but it is set up to welcome any and all organisations that can support sustainable business in the HoB. You might be a business interested to share financial resources and skills, a consultancy looking to offer sustainability advice, a donor looking to support innovative private sector conservation mechanisms or an NGO also working on sustainable business solutions in the HoB. This report and the related strategy for the GBN are the product of extensive interviews and surveys involving over 80 companies currently operating in and around the HoB focus area. We thank them for their time and we hope that this report, which includes examples of current best practice for sustainable business, can be the start of a dialogue on solutions which bring businesses in the HoB towards truly sustainable practices.

Visit wwf.panda.org/borneo/greenbusinessnetwork for more details on how your business can benefit from the GBN or email: borneo.gbn@wwf.panda.org to add your details to our distribution list.



FIND OUT IF YOU'RE
IN THE HOB:

KNOW YOUR IMPACTS:

FIND THE SOLUTIONS
WHICH ARE RIGHT FOR
YOUR BUSINESS:

SHARE IDEAS
AND EXPERIENCE:

WORKING WITH
THE GOVERNMENTS:

The table below suggests 5 initial steps that companies can take along with commitments from WWF to support these.

Recommendations for companies in Borneo

WWF solutions

Visit the website wwf.panda.org/borneo/greenbusinessnetwork where you can see a HoB boundary map and learn about the government commitments and programmes to support sustainable business in the HoB.

WWF will keep on-line information on the HoB up-to-date and can help you to understand how the HoB Declaration might be relevant for your operations.

Understand the impacts of your industry on the HoB and the associated risks and opportunities for your business. Chapters 2-4 of this report give more information on both sector specific impacts and views from other companies on the business case for sustainable practices.

WWF will provide a balanced pro-sustainable industry view on the impact of the forestry, palm oil and mining sectors on the HoB.

There are lots of things which business can do to support conservation and sustainable development. We believe that these solutions make good sense for business as well as for the planet. Information on solutions for good environmental and social practices is included in Chapters 2-4 of this report and is available at: wwf.panda.org/borneo/greenbusinessnetwork.

WWF's HoB website will provide information on solutions for your industry including: good practice examples, tools, training, fund raising opportunities and links to additional resources.

Share ideas and experience on sustainability with other companies by joining the WWF's GBN mail list. Email: borneo.gbn@wwf.panda.org for more information.

WWF supports companies who want to be more sustainable and is setting up the Heart of Borneo Green Business Network to share ideas and best practices with all willing companies. We want to hear from you about what tools and training we could provide to support business further. Email: borneo.gbn@wwf.panda.org.

The HoB is a government led initiative. Many of you told us that you wanted to engage more with government on potential policy and regulatory changes and new incentive structures which would make it easier for companies to deliver on the HoB Declaration.

WWF is committed to working with companies and governments to support the development of policies and incentives to deliver on the HoB Declaration. Let us know where we can help to facilitate bringing private and public sectors together to find solutions which are good for business, society and the environment.

ACKNOWLEDGEMENTS

WWF would like to thank PwC's global Sustainability and Climate Change team, including partners and staff from Indonesia, Malaysia and the UK for their assistance which primarily focused on engaging with businesses in the HoB and conducting research and analysis.

WWF would also like to thank the many companies operating in the forestry, palm oil and mining sectors in Borneo who took the time to take part in interviews, surveys and workshops which helped to inform this report - we look forward to working with you to deliver a sustainable future for Borneo.

ABOUT THIS REPORT

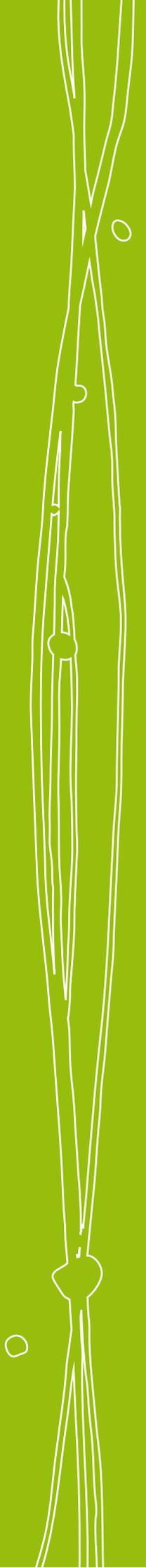
The data in this report represents WWF's best available view of the current situation in the HoB. We understand that not all of our data sets are complete nor could we hope to represent the views of all businesses in the HoB. We have made our best effort and present the data here with the hope that this report can start a constructive discussion between business, NGOs and government towards a more sustainable HoB. If you have comments or suggestions for how we can improve data collection and stakeholder engagement in future we want to hear from you. Please email us at: borneo.gbn@wwf.panda.org.





CONTENTS

EXECUTIVE SUMMARY	6
CHAPTER 1: The Heart of Borneo	9
CHAPTER 2: Business solutions for sustainable forestry in Borneo	19
CHAPTER 3: Business solutions for sustainable palm oil in Borneo	43
CHAPTER 4: Business solutions for responsible mining in Borneo	63
WWF CONTACT DETAILS	80



EXECUTIVE SUMMARY

The Heart of Borneo (HoB) covers 22 million hectares (ha) of trans-boundary equatorial rain forest including some of the most biologically diverse habitats on earth. The forests of the HoB provide many benefits to the businesses and communities of Borneo and to the wider world. These include clean water supplies, carbon sequestration, biodiversity benefits, economic revenues, and important cultural services.

In 2007, by signing the Heart of Borneo Declaration, the three governments of Borneo took a bold step towards conserving the biodiversity and promoting the sustainable use of natural resources and the welfare of communities within this 22 million hectare region. Since 2007 the governments have made significant progress on implementation; holding 4 tri-lateral meetings, passing new environmental regulations, developing tri-lateral and national action plans, building capacity on the ground and pursuing practical projects. However, feedback from companies suggests that gaps in enforcement of regulation persist and closing these gaps will be an important step to help incentivise better performance and to maintain the momentum of the HoB Initiative.

Businesses operating in the HoB have already taken steps to locate and manage their operations more sustainably. For example, of the 8.6 million ha allocated in concessions within the HoB, 651,000 ha (8%) have received certification to the Forest Stewardship Council (FSC) or Round Table on Sustainable Palm Oil (RSPO) standards, indicating that they are sustainably managed. However, as the pie charts below demonstrate there is still much more that can be done to promote best practice sustainable business in the HoB.

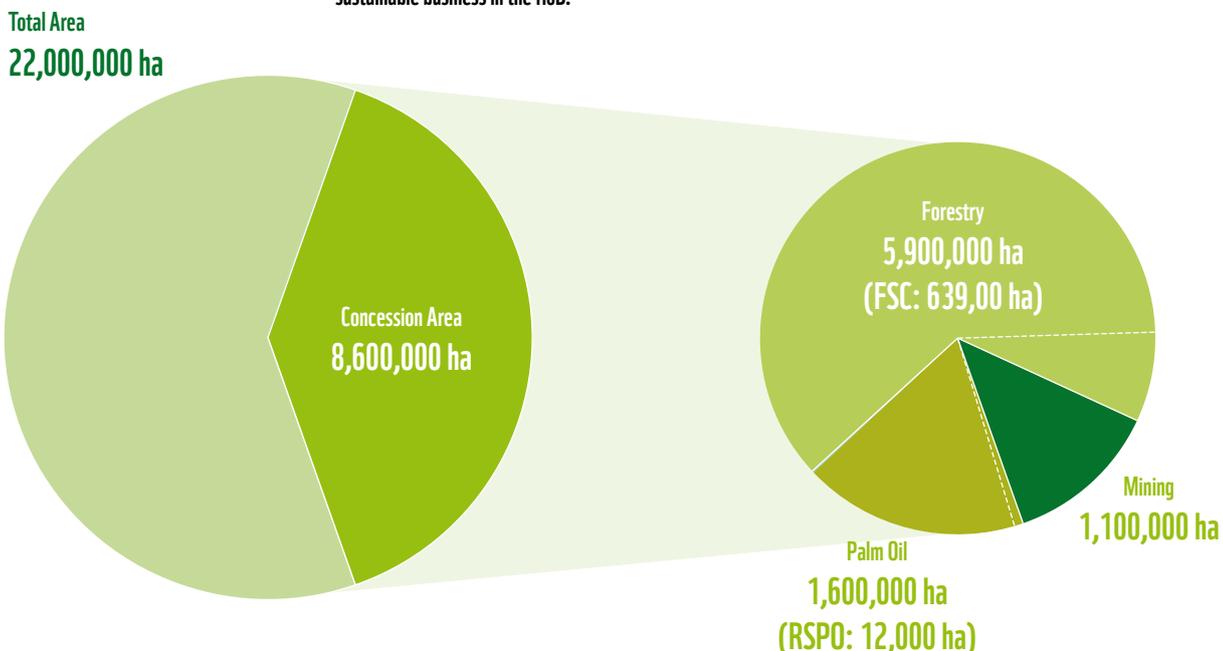


FIGURE 0.1: EXTENT OF FORESTRY, PALM OIL AND COAL MINING CONCESSIONS WITHIN THE HOB

With the potential to manage almost 40% of the area within the HoB (Figure 0.1), businesses in these sectors have a hugely important role to play in the future success of the HoB Initiative. Closely linked to the HoB initiative there is growing political and public policy momentum behind the concept of a green economy in the region. As a potential source of solutions to environmental challenges and a driver of economic growth and development, the private sector will be central to this hoped-for transition to a green economy in Borneo.

Recognising the important role of the private sector, WWF engaged with more than 80 businesses from three key sectors; forestry, palm oil and mining, operating in and around the HoB to understand their views on the HoB and particular challenges of sustainable production. The results of this engagement exercise highlighted that many companies do see some elements of a business case for more sustainable production but also that a range of challenges and barriers to adopting sustainable practices persist.

Building on WWF’s previous work with companies and the results of this engagement exercise, this report provides a number of sector-specific ‘solutions’ to environmental challenges that companies in Borneo are facing.

SECTOR	ACTIVITIES	SOLUTIONS	PAGE
 FORESTRY	Locating and planning	High Conservation Value Forest	29
		Logging - Restoration Concessions	30
		Plantations - Responsible Cultivation Areas	31
	Managing	Species Management Practices	32
		Certification	33
		Logging - Reduced Impact Logging	34
		Plantations - New Generation Plantations	35
	Financing	Responsible Finance	36
		New Financial Incentives	37
	Buyers	Driving Demand for Sustainable Forest Products	38
Buying Environmentally Friendly Paper		39	
 PALM OIL	Locating and planning	High Conservation Value Areas	53
		Responsible Cultivation Areas	54
	Managing	Species Management Practices	55
		RSPO Certification	56
		Improving Smallholder Productivity	57
	Financing	Responsible Finance	58
		New Financial Incentives	59
	Buyers	Driving Demand for Sustainable Palm Oil	60
 MINING	Locating and planning	High Conservation Value Forest	72
		Environmental Impact Assessments	74
	Managing	Mercury Use	75
		Mine Rehabilitation	76
	Financing	Responsible Finance	77
		New Financial Incentives	78

TABLE 0. 1: BUSINESS SOLUTIONS FOR THE HEART OF BORNEO

There are a range of ways that different stakeholders can work towards delivering conservation and sustainable development in the HoB and more widely. This report highlights a selection of these, but this is just the start of a process of on-going engagement and strategy development. WWF will be working via the GBN to help catalyse more action to deliver these and new solutions starting in 2011, the United Nations Year of Forests.



“

THREE COUNTRIES – ONE CONSERVATION VISION

”

CHAPTER 1: THE HEART OF BORNEO

Introduction to the Heart of Borneo

The Heart of Borneo Declaration was signed in 2007 under the banner “Three Countries – One Conservation Vision”. It commits the governments of Brunei Darussalam, the Republic of Indonesia, and Malaysia to strive to conserve the biodiversity and promote the sustainable use of natural resources and welfare of communities, within the 22 million hectare region known as the Heart of Borneo (HoB) (Figure 1.1).



FIGURE 1.1: LOCATION OF THE HOB

The value of the Heart of Borneo

The governments’ Declaration recognises the need for collaboration to conserve and sustainably manage the HoB forests because of their high value for people’s welfare and the environment. The valuable services which the forests of the HoB provides include: clean water supplies, carbon sequestration, biodiversity benefits, economic revenues, and cultural services.

Water:

Of the 20 major rivers in Borneo, 14 have their source in the mountainous forests of the HoB (Figure 1.2). Rivers are an essential input to industry, agriculture and energy generation; they provide clean drinking water; and they are also an important means of transport in Borneo. Water catchment degradation increases the risks of unpredictable floods and droughts, endangers boat transport, and damages industrial, agricultural and domestic supplies. All of these effects can create major economic and social costs for communities and the private and public sectors. Conserving the quality of the watersheds in the HoB will help ensure reliable, clean and safe water supplies to rural and urban populations in Borneo.



FIGURE 1.2: THE HOB PROVIDES WATER QUALITY BENEFITS TO DOWNSTREAM USERS

Carbon:

The world's forests store enormous amounts of carbon in their biomass and fertile soils, these 'carbon stores' play a critical role in the regulation of the global climate. However, deforestation and large scale land conversion releases large amounts of carbon into the atmosphere, contributing to global climate change.

In Borneo, the impacts of climate change are expected to include; more extreme rainfall patterns, prolonged periods of drought and fires, rises in sea level and coastal flooding, together with more severe El Nino and La Nina events. There are indications that some of these impacts may already be being felt.¹ The forests and peat lands of Borneo are particularly important because they are very effective carbon stores, with an average of 230 tonnes per ha in above ground biomass, and 2,400 tonnes per ha in below ground peat soils; most of this is released by deforestation and land degradation.² Deforestation in Indonesia and Malaysia currently accounts more than 80% their total carbon emissions, representing more than 2.5GtCO₂ per year³, this is equivalent to almost 4 times the annual emissions from the global aviation industry.⁴

Biodiversity:

Borneo's forests are home to some of the most significant biodiversity on the planet, much of which is found nowhere else in the world. Borneo is home to pygmy elephants, orang-utans, rhinoceros and clouded leopards, more than 350 species of bird, 150 species of reptile and 15,000 flowering plants.⁵

Surveys have found over 700 species of trees within 10 hectares, a number greater than the total diversity of tree species in North America. More than 600 new species of animals and plants have been discovered since 1995, indicating just how much remains to be learnt about the diversity of animals and plants found in the HoB.⁶



FIGURE 1.3: ORANG-UTANS AND THE GIANT CORPSE FLOWER ARE FOUND IN BORNEO

Economic Benefits:

The economic value of the HoB forests is equally significant. The HoB represents rich natural resources in the form of timber and other forest products. If these resources are sustainably managed they have the potential to provide continuous and long term revenue streams. Sustainable forest management also maintains the flow of ecosystem services, such as water provision, pollination and local climate regulation, to the surrounding areas. These essential natural inputs are crucial for the ongoing development of agriculture and other revenue-generating activities within the HoB.

Culture and Livelihoods:

Maintaining the quality of the natural environment is of paramount importance for the communities living within the HoB. Many of these communities directly depend on the forest for food, water, medicine and construction materials. The unique and wild beauty of Borneo's forests and coastlines also draw tourists from all over the world. In 2009, Sabah alone recorded more than 2 million arrivals, generating an estimated USD 1.2 billion in tourism receipts.⁷



FIGURE 1.4: MANY COMMUNITIES RELY ON THE FOREST

¹ Case et al. Climate Change in Indonesia, implications for humans and nature, WWF, 2007; Santoso and Forner, Climate change projections for Indonesia, CIFOR, 2006

² Paoli et al. Biodiversity Conservation in the REDD, Carbon Balance and Management 5:7, 2010

³ USAID, Indonesia Climate Change Strategies, 2008. However, recent reports have significantly different estimates on the total carbon emissions as well as percentage of emissions from deforestation and degradation in Indonesia. Differences in estimates may be due to different methodologies. A 2007 report published by PEACE and funded by the World Bank and the UK Department for International Development stated that 3.01 Gigatons of CO₂e were released annually. A 2009 report by Indonesia's National Council on Climate Change stated annual CO₂ emissions from land use change and forestry amounted to 1.88 Gigatons. While the Second National Communication (SNC) for the period 2000 to 2005 released by Indonesia's Environment Ministry in December 2010 states Indonesia emitted at most 1.38 Gigatons of carbon dioxide equivalent CO₂e each year during this period. The SNC report also gave much lower figures for the proportion of CO₂ released from land use change and forestry which includes peat fires. The SNC will be submitted to the UN Framework Convention on Climate Change

⁴ In 2007 the aviation industries carbon emissions were 666 million tonnes of CO₂ equivalent, IATA, 2009

⁵ WWF, Borneo: Treasure Island at Risk, 2005

⁶ WWF, Borneo's new world; discovering new species in Borneo, 2010

⁷ Sabah Tourism Board, 2010

Heart of Borneo – Under Pressure

Despite the environmental, economic, and social value of the Heart of Borneo, it is coming under increasing pressure from a growing population and booming industry. Between 1985 and 2005 Borneo lost an average of 850,000 ha of forest every year.⁸ Figure 1.5 shows the loss of forest cover in Borneo since 1950.

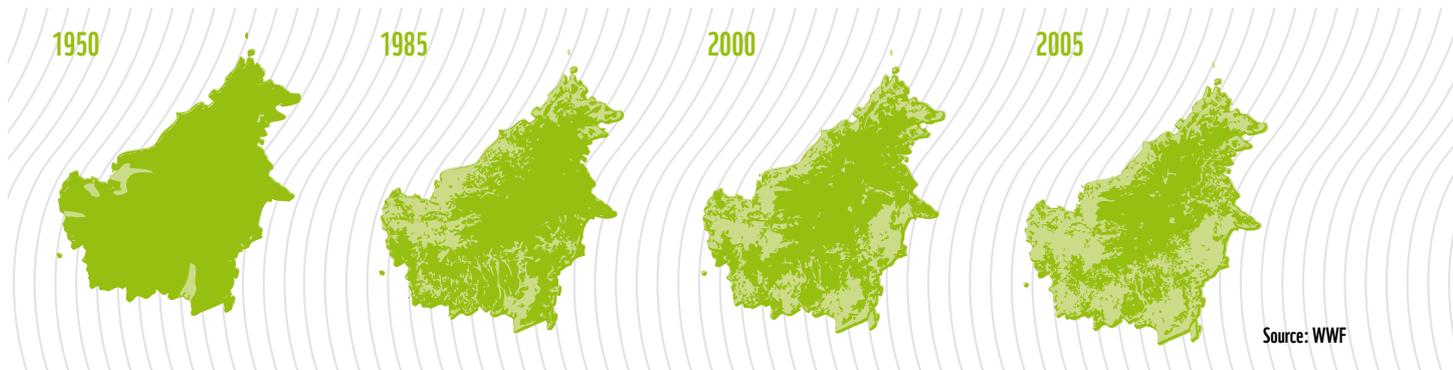


FIGURE 1.5: EXTENT OF FOREST COVER IN BORNEO 1950 TO 2005

Growing populations and international demand have led to increased production from the palm oil, forestry and mining industries (amongst others) putting increasing pressure on Borneo’s forests. It is important that the appropriate balance is reached between the values provided to society by standing forests, and the revenues from activities which replace them.

To date, the exploitation of Borneo’s natural resources for short term financial returns has not given sufficient consideration to the broader environmental, economic and social implications of this activity. The cost to society of lost biodiversity and ecosystem services has not been visible to key decision makers and this may have contributed to a greater level of extractive activity than is optimal for the long term future of the economy and people of Borneo.

The Heart of Borneo Declaration

The HoB Initiative was created in response to the observed pressure on Borneo’s forests. First, the governments of Brunei Darussalam, Indonesia, and Malaysia held meetings and workshops to develop a common understanding of the principles and objectives of the HoB. The HoB Declaration was officially signed in Bali in 2007, through which the three governments pledged to cooperate in realising the HoB vision. The three governments quickly developed the Trilateral Strategic Plan of Action and Indonesia, Sabah and Brunei have also developed and are implementing their own national and state action plans to meet their shared vision.



FIGURE 1.6: THE HOB DECLARATION

⁸ WWF, Borneo: Treasure Island at Risk, 2005

THE AGREED PRINCIPLES AND OBJECTIVES FOR THE HOB INITIATIVE ARE AS FOLLOWS:

Principles:

- The provision of a sustainable life support system;
- Attention to socio-cultural economical and ecological functions;
- Partnerships among countries and districts; and
- Ecological connectivity.

Objectives:

- To support sustainable natural resource management within the network of conservation areas and protected areas as well as production forests and other land uses;
- The implementation of policy and law enforcement that support sustainable management in line with existing multilateral and bilateral agreements; and
- The implementation of sustainable development based on scientific methods and local wisdom for improving community welfare. This will include the application of sustainable management, protection, education and training initiatives, as well as other activities relevant to cross boundary management activities, conservation and responsible production in the HoB area.

The area designated as the HoB under the Declaration occupies 22 million hectares, 56.6% of which is in Indonesia (East, West and Central Kalimantan), 41.8% in Malaysia (Sabah and Sarawak), and 1.6% in Brunei Darussalam (58% of the entire area of the country).



FIGURE 1.7: MINISTERS FROM BRUNEI, INDONESIA AND MALAYSIA AFTER SIGNING THE DECLARATION

SINCE THE DECLARATION WAS SIGNED THE THREE GOVERNMENTS HAVE MADE SIGNIFICANT PROGRESS AGAINST THEIR TRILATERAL STRATEGIC PLAN OF ACTION, INCLUDING VIA:

- ASEAN and BIMP-EAGA leaders summits endorse the HoB Declaration.
- The Sabah government has mandated certified sustainable forest management in Sabah forest concessions by 2014.
- In Kalimantan, over 1.6 million ha of logging concessions in and around the HoB have signed up to work towards sustainable management certified by the Forest Stewardship Council (FSC). The first business in Sarawak, Ta Ann, has also signed up to work towards FSC certification.
- Four HoB trilateral meetings driving progress on key trans-boundary issues such as eco-tourism, protected areas and species action plans.
- The development of multi-ministerial governance bodies in the areas of environment, economics and development.
- A trans-boundary peatlands management project in Brunei as well as a scientific expedition to discover new species and biological resources within the HoB.
- Indonesian government use of HoB protected areas as training ‘centres of excellence’ for more than 150 national park management trainees from across the country.
- The development and launch of a comprehensive feasibility assessment looking at Sustainable Finance in the Heart of Borneo.

In addition, the government of Indonesia is currently undertaking a consultation process to designate the HoB as a ‘Kawasan Strategis Nasional’ (KSN) or National Strategic Area (NSA). This is an area whose spatial plan is considered as a national priority. Historically this priority could be for reasons of state sovereignty, national security, or for economic, social or cultural reasons. The HoB is the first KSN to be proposed for environmental reasons. The HoB KSN will aim to clarify the spatial plan and give clearer guidance for land users as to the definition of ‘conservation and sustainable development’ in their specific area and for their specific industry. The KSN and associated guidance should help business to work together with government to implement sustainable business practices which help to meet the governments goals for the area.

The Importance of the private sector in Borneo

Central to the principles and objectives of the HoB Initiative is the welfare of local communities and the continuing economic and social development of the region. The private sector has a critical role to play in this. Indeed the revenues from the exploitation of Borneo's natural resources have played a central role in the development of the region over the last few decades. The percentage of the population living below the national poverty line in Indonesia and Malaysia dropped from around 40% in the 1970's, to 17.8% in Indonesia and 5% in Malaysia, in 2006 and 2007, respectively.⁹ Despite reductions in poverty the states of Borneo remain some of the poorest in the region, with an estimated 23% of the population living below the poverty line in Sabah, Malaysia, for example.¹⁰

The private sector will continue to play an important role in reducing poverty across Borneo. However, as the forests retreat, it is becoming increasingly clear that the current growth path is not sustainable in the long term. Not only does the destructive use of natural resources result in the loss of ecosystem services to the detriment of local, national, and international communities, but it focuses the economy on short term gains, potentially at the expense of long term sustainable growth opportunities. Without a re-evaluation of the economic growth model in Borneo the prospects for sustained long term poverty reduction may be limited.¹¹

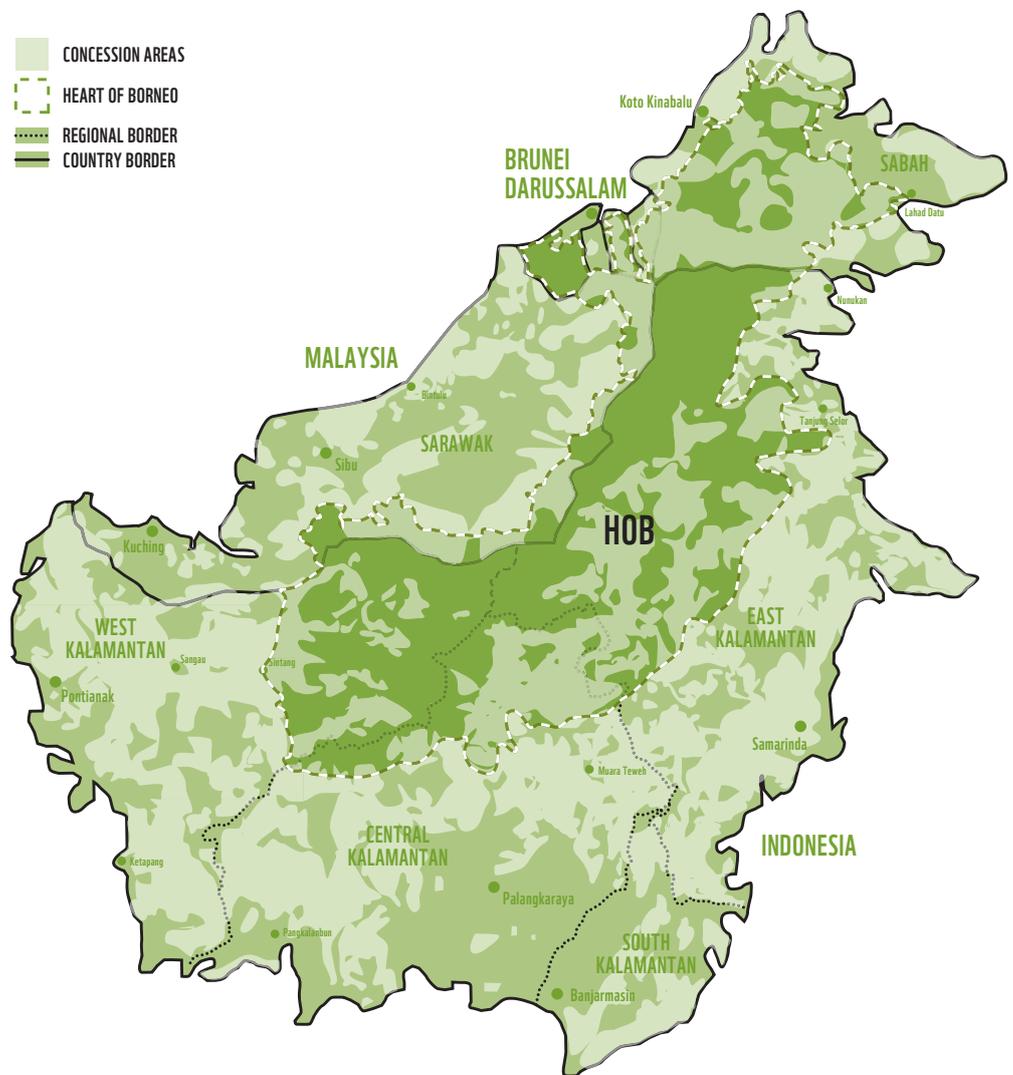


FIGURE 1.8: COMBINED FORESTRY, PALM OIL AND MINING CONCESSION AREAS IN BORNEO

NB: This map provides an illustrative estimate of the location and size of concessions based on publicly available information; it is not intended to be a precise representation.

⁹ CIA World Fact Book - <https://www.cia.gov/library/publications/the-world-factbook/fields/2046.html>; UNDP, Malaysia Measuring and Monitoring Poverty and Inequality, 2007

¹⁰ Ninth Malaysian Plan 2006-2010

¹¹ Pezzey, Sustainable development concepts : an economic analysis, World Bank, 1992; Toman, The Roles of the Environment and Natural Resources in Economic Growth Analysis, Resources for the Future, 2003; Indonesia: Critical Development Constraints, Asian Development Bank, 2010

Figure 1.8 indicates the current extent of forestry, palm oil and mining concessions inside and around the HoB. Table 1.1¹² shows that based on this estimate of current concession allocations, the private sector could manage almost 40% of the land area within the HoB, providing an indication of the important role that the private sector will need to play in delivering on the HoB Declaration. Many of the key threats to the HoB are perceived to arise from private sector activity, but equally, the private sector has the opportunity to be the source and implementer of solutions to environmental and social challenges and can continue to be a driver of economic and social development.

	Kalimantan (ha)	Malaysia (ha)	Brunei (ha)	Total (ha)
Palm Oil in the HoB	830,000	770,000	-	1,600,000
Palm Oil RSPO certified in the HoB	-	12,000	-	12,000
Forestry in the HoB	2,600,000	3,200,000	138,000	5,938,000
Forestry FSC certified in the HoB	424,000	215,000	-	639,000
Mining in the HoB	1,100,000	-	-	1,100,000
Mining concessions in production	120,000	-	-	120,000
Total concessions				8,638,000
% of HoB allocated as concessions				39%
Total FSC / RSPO certified				651,000
% of concession area certified (FSC / RSPO)				8%
Total HoB Area				22,000,000

TABLE 1.1: EXTENT OF FORESTRY, PALM OIL AND COAL MINING CONCESSIONS WITHIN THE HOB



I've heard of the Heart of Borneo, but don't yet know what it's all about

I know we have concessions in the Heart of Borneo but I'm not clear how the initiative will affect our business?

I think acting sustainably will be good for my company's bottom line in the long run



Engagement with companies in the Heart of Borneo

Increasing the support and buy-in of industry is critical to successfully meeting the objectives of the HoB Declaration. Conscious of this, and in support of the government's efforts to achieve their conservation vision, WWF launched the Heart of Borneo Green Business Network to engage with business and spread greater awareness and understanding of the Heart of Borneo initiative. This report, together with the associated website, represents the results of a project to specifically engage with the forestry, palm oil and mining sectors operating in Borneo, focusing on Kalimantan, Sabah and Sarawak.¹³

Industry and sustainability specialists from PwC based in Malaysia and Indonesia assisted WWF to engage with more than 80 company representatives from the forestry, palm oil and mining sectors operating in and around the Heart of Borneo. This engagement process involved more than 50 detailed interviews, as well as industry focussed workshops in Kuala Lumpur and Jakarta. These were supported by a specially developed survey available in hard copy and on-line formats.

The objectives of this industry engagement exercise were to:

- Understand company views on environmental sustainability and the HoB Initiative;
- Highlight current industry progress and existing good practice;
- Identify particular challenges faced by companies trying to pursue good environmental practices; and
- Inform practical solutions that could be implemented by producers, regulators, investors, and consumers to help deliver sustainable production.

¹² Sources: Forestry – Indonesian Ministry of Forestry 2008, FSC 2010, Financing the HoB Landscape, Brunei Forestry Department, 2010. Palm oil – Ministry of Agriculture and Agriculture Agency (District/Kabupaten level) 2008, WWF Palm Oil company field Survey 2008, MPOB 2010, RSPO 2010. Mining – Indonesian Ministry of Energy and Mineral Resources 2008, Malaysian Mining Report 2008.

¹³ The conditions in Brunei differ from elsewhere on the island for these sectors: palm oil and mining are not significant, and Brunei does not export timber. In fact, Brunei imports approximately 20% of its domestic timber needs and is attempting to provide the remaining 80% on a fully sustainable basis.

Who provided input?

The charts below provide a summary of the profile of participants in this engagement exercise.

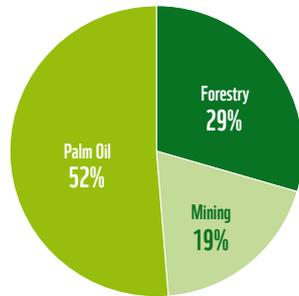


FIGURE 1.9: % OF RESPONDENTS BY SECTOR

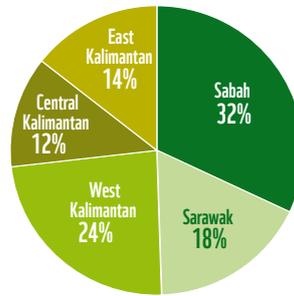


FIGURE 1.10: % OF RESPONDENTS WITH OPERATIONS IN EACH STATE

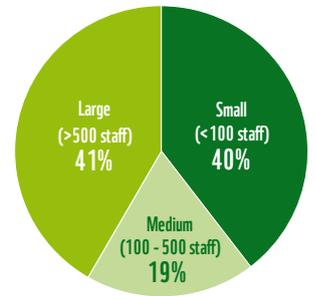


FIGURE 1.11: % OF RESPONDENTS BY SIZE OF COMPANY

(n=84)

What did they say?

The analysis below provides a brief snapshot of the high level results from our industry engagement exercise based on all respondents.

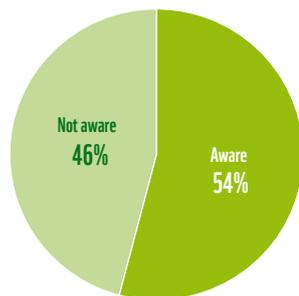


FIGURE 1.12: AWARENESS OF THE HOB INITIATIVE

(n=84)



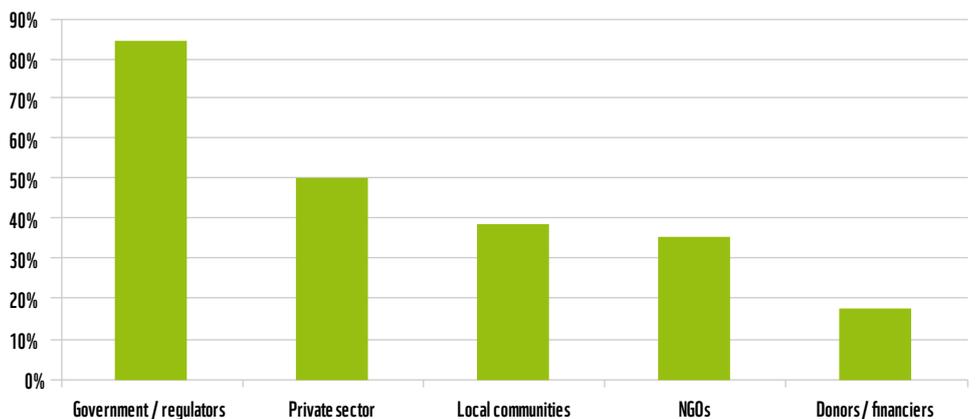
If the Heart of Borneo initiative is to be successful it needs to be driven by regulation

Good environmental and social practices have helped to shield my business from risk

Educating employees and contractors is central to our sustainability approach



The first question in surveys and interviews was to inquire as to the knowledge of the respondents of the HoB and its objectives. 46 percent of the respondents were not aware of the HoB, which demonstrates the need for the governments and other proponents of the HoB to work hard to raise the profile of the initiative with companies, especially given the important role that the private sector will need to play in delivery.



(n=84, NB: Respondents were asked to 'select all that apply')

FIGURE 1.13: WHICH STAKEHOLDERS HAVE A SIGNIFICANT ROLE TO PLAY IN IMPLEMENTING THE HEART OF BORNEO DECLARATION?

After a short briefing on the HoB Initiative, respondents were asked which stakeholders would have a significant role to play in its delivery. The overwhelming majority felt that the initiative would need to be strongly led by governments (both state and national) and regulators. This message was echoed in industry engagement workshops during which the majority of companies in all sectors indicated that they based their action on environmental and social good practice on government requirements. Just over half (51%) felt that the private sector would have a significant role to play while 39% thought that local communities would be important. Over a third (36%) saw a significant role for NGOs but just 18% thought that donors and financiers would have an important part to play.

Given that many of the benefits of Borneo’s forests are regional and global we are hopeful that international donors in particular will help to provide support to drive the change that is needed to protect the HoB. Other financiers also have a part to play through encouraging good practice and putting in place a robust assessment framework for less responsible players.

The business case for change

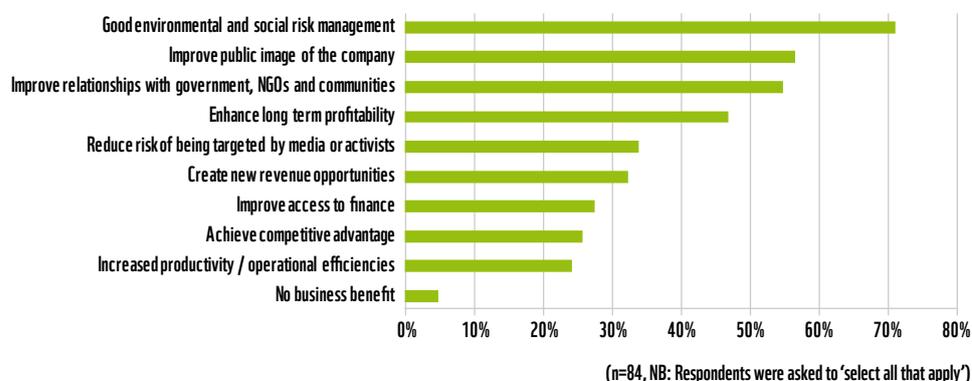


FIGURE 1. 14: WHAT ARE THE BENEFITS OF GOOD ENVIRONMENTAL AND SOCIAL PRACTICES?

Respondents were also asked about what benefits they had identified as a result of pursuing good environmental and social practices. The results (Figure 1. 14) provide some telling insights into the potential business case for sustainable production in Borneo.

A large majority (71%) identified good environmental and social risk management as a key reason to adopt good practices. Almost equal proportions of respondents thought that adopting sustainable practices would improve the public image of their company (56%) and improve relationships with key stakeholders (55%). Nearly half (47%) of respondents felt that pursuing good environmental and social practices enhanced long term profitability. A host of other benefits were also frequently cited including creating new revenue opportunities (32%), improving access to finance (27%) and increasing productivity (24%).

Companies also identified a number of specific challenges to adopting sustainable practices. The most commonly cited challenges included: a lack of financial support to change practices coupled with a perception that some sustainable practices are high cost and have limited benefits; a lack of knowledge or capacity amongst employees on leading environmental and social practices; and, difficulties obtaining buy-in from key stakeholders, particularly contractors and employees, to undertake sustainable practices. In general the challenges reported were more disparate than the benefits and therefore more difficult to group and report in percentage terms but we have paid particular attention to challenges raised by companies in the solutions sections of Chapters 2, 3 and 4.

Whilst acknowledging the challenges, the results above demonstrate that many companies operating in Borneo do identify at least some elements of a business case for moving to sustainable production. We are hopeful that the analysis and solutions presented in the industry specific chapters of this report will serve to inform and strengthen the business case for sustainable production and crucially, will help to remove some of the perceived barriers to action.

The results of our industry engagement exercise heavily informed the structure and content of this report and these are discussed in more detail at a sector level in Chapters 2, 3 and 4. The findings of this study have also been passed on to the government. The HoB working groups and we hope that this report will be the start of increased engagement between business, government and NGOs in support of the HoB. WWF is also using the results to drive it’s strategy for the HoB Green Business Network. The following webpage will keep you up to date on our progress and on HoB issues which affect business:

wwf.panda.org/borneo/greenbusinessnetwork



The chapters that follow consider the forestry, palm oil and mining sectors in turn; highlighting their economic importance while drawing attention to the potential environmental and social consequences of unchecked expansion.

Practical solutions to environmental challenges identified by HoB businesses are offered for producers as well as those sourcing and financing business in the HoB. Some concerns can be addressed relatively easily in the confines of this report, but others are more complex and will require on-going engagement between companies, NGOs and regulators to define suitable answers – we look forward to opportunities for this on-going engagement. The solutions offered also consider the important role of investors, consumers and NGO's in helping to shift the balance towards a profitable yet environmentally and socially sustainable economy.

This chapter separately analyses logging of natural forests and plantation forestry. Wood fibre from both of these sources also currently supplies the small but growing pulp and paper industry in Borneo and developments in this sector are also reviewed. The first section of this chapter considers the trends in production, how unsustainable practices have lead to a reduction of available raw materials and how this in turn is changing the industry, and developments in sustainable production. The second part of the chapter looks at the environmental and social challenges and solutions in relation to forestry. The final section draws on the results of our engagement with producers to summarise the business case for sustainable forestry in Borneo.

“

THERE ARE GREAT OPPORTUNITIES FOR SUSTAINABLE FOREST MANAGEMENT IN THE HOB

”

CHAPTER 2

BUSINESS SOLUTIONS FOR SUSTAINABLE FORESTRY IN BORNEO



Summary

- The forestry sector manages the most land of any sector operating inside the HoB, and therefore has the greatest opportunities for sustainable use, but also the greatest risks in the absence of good practice.
- Sustainable logging of natural forests is a good example of how the standing forests can provide long term revenues while maintaining a large proportion of the forests values.
- Plantation area is increasing across Borneo to meet the growing demand for timber, and fibre for paper mills. It is essential that the expansion of mill capacity is matched by commensurate increases in sustainable plantations. Critically, to ensure supply meets demand without putting pressure on high conservation value forests, plantations need to be planned, sustainably located and planted long before pulp mills are constructed.
- International demand for sustainable forest products is increasing, WWF's GFTN member companies trade over USD 70 billion of forest products every year, 40% of which is FSC certified, an estimated USD 28 billion of FSC materials.

Recommendations

- Logging activities should be avoided in high conservation value forests, and elsewhere reduced impact logging and sustainable forest management should be implemented to minimise environmental impacts.
- Plantations should not replace high conservation value forests, and should instead be cultivated on the available idle land. WWF's 'New Generation Plantations' programme can provide the basis for good plantation management.
- Investors, traders and consumers should help drive sustainable management through financing and sourcing FSC certified production.

More information can be found in the solutions sections:

Activities	Solutions	Page
Locating and planning	High Conservation Value Forest	29
	Logging - Restoration Concessions	30
	Plantations - Responsible Cultivation Areas	31
Managing	Species Management Practices	32
	Certification	33
	Logging - Reduced Impact Logging	34
	Plantations - New Generation Plantations	35
Financing	Responsible Finance	36
	New Financial Incentives	37
Buyers	Driving Demand for Sustainable Forest Products	38
	Buying Environmentally Friendly Paper	39

Introduction

Borneo's forests provide a valuable resource for the governments of Indonesia, Malaysia, and Brunei. Sales of timber and other forest products have contributed to economic growth, and the exploitation of the forests has helped lift many households out of poverty over the last two decades. However, unsustainable logging rates, combined with prevalent illegal activities, have meant that this valuable resource is declining. A new model of sustainable forest use is required to ensure that the governments, companies and communities of Borneo can continue to rely on their forest resources to provide revenue without reducing the potential for future growth.

The HoB Declaration recognises the fact that Borneo's forests are unique and valuable. However, the on-going degradation of timber concessions in Borneo through over-exploitation puts increasing pressure on remaining high conservation value forests, many of which lie within the HoB. The forestry sector manages the most land of any sector operating inside the HoB, and therefore has the greatest opportunities for sustainable use, but also the greatest risks in the absence of good practice. In order to realise the HoB's vision for conservation and sustainable use, the forests inside the HoB will need to be carefully managed and protected from illegal and unsustainable logging. As part of this, a shift to sustainable forest management, independently certified through the FSC or other equivalent standard, will result in improved environmental performance and allow long term revenues from a given area of forest to be maintained. As has been demonstrated in Sabah, governments have an important role in moving towards more sustainable production, and this should be encouraged and driven by the actions of consumers and financiers.

Forestry Production

Natural Forest Management

Changes in the production of Indonesia's and Malaysia's timber industry illustrate the need for an urgent shift towards a sustainable extraction model. Figures 1.1 and 1.2 show the roundwood¹⁴ production in Indonesia and Malaysia from 1970 to 2009.¹⁵ Both countries have suffered a reduction by a half relative to their respective peaks of production. Indonesia's roundwood production has been in decline since the early 1970's from more than 200 million m³ to about 100 million m³ in 2009. Malaysia's production continued to increase through the 1970's and 1980's, but has since declined from almost 50 million m³ to a little over 25 million m³ in 2009.

In Brunei the Forest Resources and Strategic Planning Study (1984) predicted an acute timber deficit by 2015, when the mixed dipterocarp forests, the country's main source of timber supply, would be completely logged-over. To avert this, the Forestry Department halved the annual allowable cut from 200,000 m³ to 100,000 m³ per annum starting from 1990. Partly as a result of these measures, Brunei's forestry production has followed a similar trend to that seen in Malaysia and Indonesia, but on a much smaller scale. Production of sawn wood for example increased from 40,000 tonnes in 1970 to a peak of 90,000 tonnes in the mid 1990's, followed by a decline to about 45,000 tonnes per annum in 2005.¹⁶

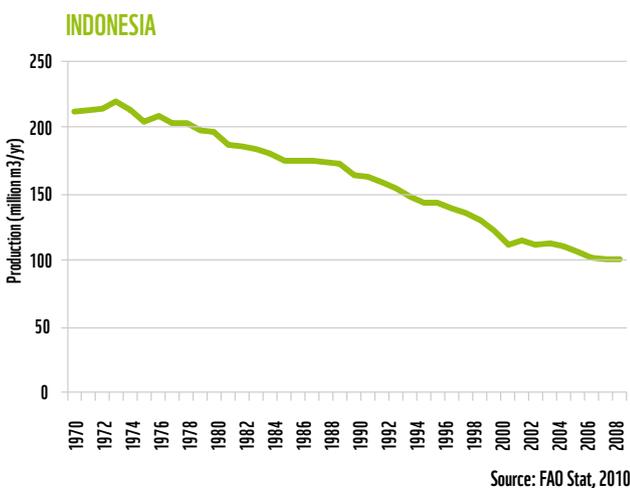


FIGURE 2.1: ROUNDWOOD PRODUCTION IN INDONESIA 1970 TO 2009

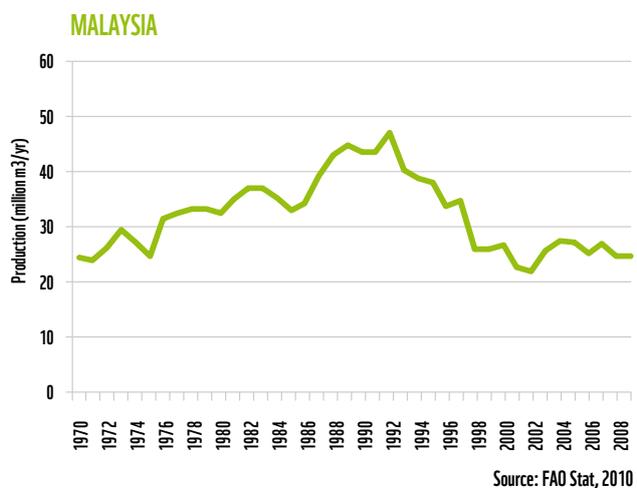


FIGURE 2.2: ROUNDWOOD PRODUCTION IN MALAYSIA 1970 TO 2009

¹⁴ Wood in its natural state as felled, or otherwise harvested, commodities included are sawlogs and veneer logs, pulpwood, other industrial roundwood (including pitprops) and fuelwood.

¹⁵ Production includes harvests from plantation forestry, however this is considered to only contribute a small proportion of the total, except towards the end of the time series where plantation production may be responsible for the levelling off of the trend. Illegal production may not be fully recognised in these figures

¹⁶ FAO Stat; www.forestry.gov.bn/stats_20.gif

At a state level, in Sabah and Sarawak total log production (a sub-set of roundwood production) in 1990 was 8.4 million m³ and 18.9 million m³ respectively, but by 2008 this had decreased to 3.9 million m³ and 10.1 million m³, respectively.¹⁷ Similar trends are seen in Kalimantan, for example, in East Kalimantan, which represents 55% of Kalimantan's, and almost a third of Indonesia's forest concession area¹⁸, log production from natural forests declined from 5.4 million m³ in 1997, to 1.7 million m³ in 2008.¹⁹

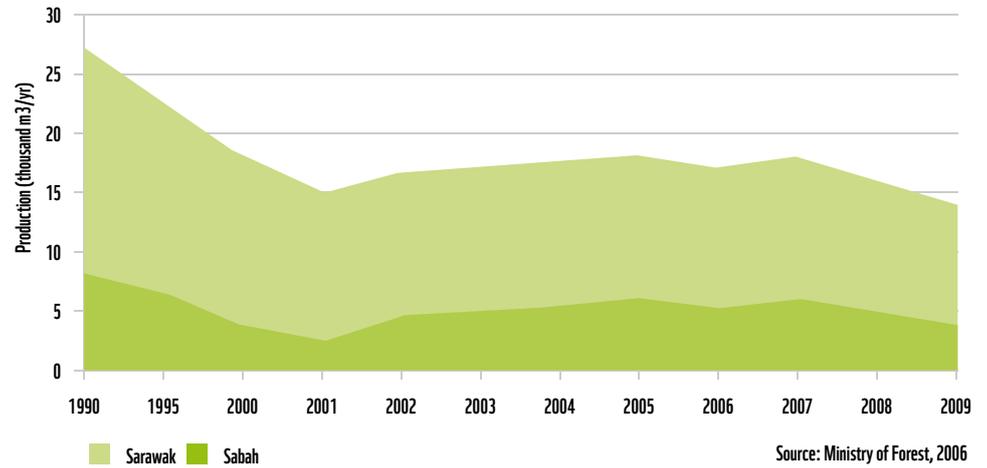


FIGURE 2.3: THE DECREASE IN LOG PRODUCTION FROM NATURAL FOREST MANAGEMENT IN SABAH AND SARAWAK



FIGURE 2.4: TRANSPORT OF LOGS FOR PROCESSING

¹⁷ FDP, FD-Sabah, and FD-Sarawak. Data available in "Statistics on Commodities 2009"

¹⁸ In 2008 there were 6,581,712 ha of forest concessions in East Kalimantan; 12,275,773 across Kalimantan, and 26,169,813 ha across all of Indonesia. BPS, 2008.

¹⁹ Kalimantan Timur dalam Angka, 1997 and BPS Kalimantan Timur Dalam Angka, 2009

Timber Plantations

While production from natural forests is generally on the decrease due principally to scarcity and the increased cost of harvesting in inaccessible areas, production from plantations has increased rapidly in an effort to meet demand. Plantations have the advantage of providing a predictable supply at a known cost.

Sarawak in particular is undergoing an extensive replanting policy, with annual log production from plantations projected to increase from 2 million m³ between 2006 and 2010 to 15 million m³ between 2016 and 2020.²⁰ This supply is to be created through annual plantings of 375,000 ha per year until 2020. However, thus far these targets have not always been met because of difficulties sourcing available land and slow local government approval processes.²¹

In Indonesia, plantations are also starting to represent a more important proportion of timber supplies; in the 6 years from 1999 to 2005, timber production from industrial plantations increased from 190,000 m³ to 12.8 million m³. This increase has principally come from plantations located in Sumatra, however plantation area is now starting to increase in Kalimantan also.²²

In Brunei, the Forestry Department began the sawn timber plantation development programme in the 1990s with the objective of developing 30,000 ha of plantations at a rate of 1,000 ha per year. It was predicted that at maturity the sawntimber plantations would yield about 200,000 m³ per annum, more or less equivalent to the annual demand of the local timber industry.

Pulp and Paper

At a regional level, a major driver of demand for plantation development and wood-fibre in general, has been the pulp and paper industry. China has been behind much of the increase in demand for pulp and paper, with imports increasing more than tenfold between 1995 and 2005.²³ The capacity of pulp mills in Indonesia has expanded to meet this demand, with increases from about 1 million tonnes in 1990²⁴ to more than 7 million tonnes per annum in 2008²⁵. However, most of the expansion to date has occurred in Sumatra as the mills have been expanding much faster than their plantations. This growth has come at a significant cost in terms of natural forest cover; CIFOR estimate that 70% of pulp wood supply has been met through clearance of natural forests.²⁶

In Borneo the pulp industry is still relatively undeveloped, but the expansion of the industry is widely anticipated. Currently, there is a single major mill in East Kalimantan, Kertas Nusantara (previously Kiani Kertas), with a capacity to process half a million tonnes of pulp annually (and 200,000 tonnes of fibreboard). There are also a number of smaller pulp mills, including one in Sabah which has recently expanded its capacity up from 180,000 tonnes to 240,000 tonnes, and two in Sarawak each with a capacity of less than 100,000 tonnes.²⁷

The Indonesian government's 'Roadmap for Forest Industry Revitalisation' targets significant growth in the pulp industry, with capacity reaching 16 million tonnes by 2020, achieved through USD 15 billion of public and private investment. Proposals are reportedly under consideration for up to 8 new pulp mills in Kalimantan. While it is unlikely that all of these will be built, those that are could put increased pressure on the remaining natural forests of Kalimantan²⁸ unless careful regulations are put in place to stop approval of any extra pulp capacity that cannot demonstrate sustainable supply and with monitoring of pulp supply chains.

To avoid the loss of natural forests which occurred in Sumatra, and reduce the pressure on the HoB's natural forests, the expansion of pulp mill capacity needs to be matched by commensurate increases in fibre volumes from sustainable plantations. Critically, to ensure supply meets demand without putting pressure on natural forests, plantations need to be planned and planted before pulp mills are constructed. Plantations should not replace high conservation value forests, but should rather be cultivated on the available idle land after careful land title and tenure rights checks. Idle land is land which does not have a current use and also no clearly designated land use, it also has low conservation value and low carbon value.

As part of Sarawak's plantations programme fast growing acacia species are being cultivated to supply new pulp mills. For example, Sarawak Planted Forest Sdn Bhd will supply 3.2 million cubic metres of wood pulp to a 750,000 tonne capacity mill being planned by Acacell Cellulose International Sdn Bhd in Bintulu. In addition, a Chinese consortium is looking to invest RM 3.3 billion (approx. USD 1 billion) in Sarawak to set up a 200,000 ha forest plantation to supply pulp mills in mainland China.²⁹

²⁰ Malaysian National Timber policy 2009-2020

²¹ Malaysian National Timber policy 2009-2020

²² Ministry of Forest (2006). Executive, Strategic Forest Data (2006); as cited in A Roadmap for the Revitalisation of Indonesia's Forest Industry

²³ Increase from 750,000 tonnes in 1995 to 7.2 million tonnes in 2005; UN Comtrade, 2007

²⁴ www.pulpmillwatch.org/countries/indonesia/

²⁵ CIFOR, Indonesia's Pulp & Paper Industry: Overview of Risks and Opportunities 2008

²⁶ CIFOR, Indonesia's pulp and paper industry: overview of risk and opportunities, 2005

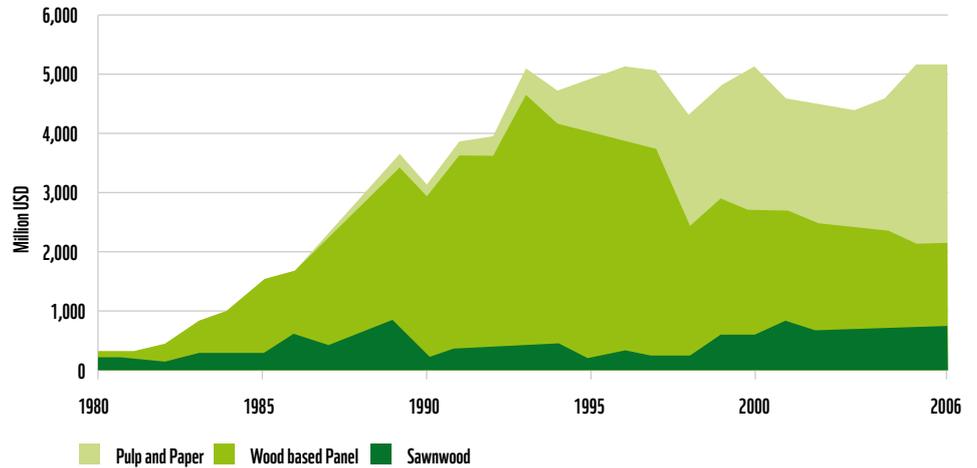
²⁷ CIRAD, Feeding China's Expanding Demand for Wood Pulp, 2007

²⁸ Verchot et al. Reducing forestry emissions in Indonesia. (CIFOR, 2010). South Kalimantan: Putra Adil Laksana; East Kalimantan: Kaltim Prima P&P, Sinar Mas; Central Kalimantan: Tranindo Sinar Utama; UFS; West Kalimantan: Korindo; Garunda Kalimantan; Karawang Ekawana.

²⁹ Interview by Sarawak Chinese Chamber of Commerce and Industry president Sia Hiong Ngiein The Star, September 2010.

Industry Revenues

Despite the decline in timber production, both Indonesia and Malaysia have been able to maintain their forestry export revenues. This has been achievable through industry diversification; in Indonesia pulp and paper has filled the gap of declining timber exports (Figure 2.5), and in Malaysia sales of furniture have helped maintain export revenues. Export revenues in Indonesia totalled USD 6.7 billion³⁰, and in Malaysia USD 6.8 billion in 2008³¹.



Source: FAO, 2008

FIGURE 2.5: INDONESIAN EXPORT VALUES OF WOOD PRODUCTS, 1980 TO 2006

Direct exports from Indonesia and Malaysia are principally to other Asian states, with less than 6% of exports to Europe.

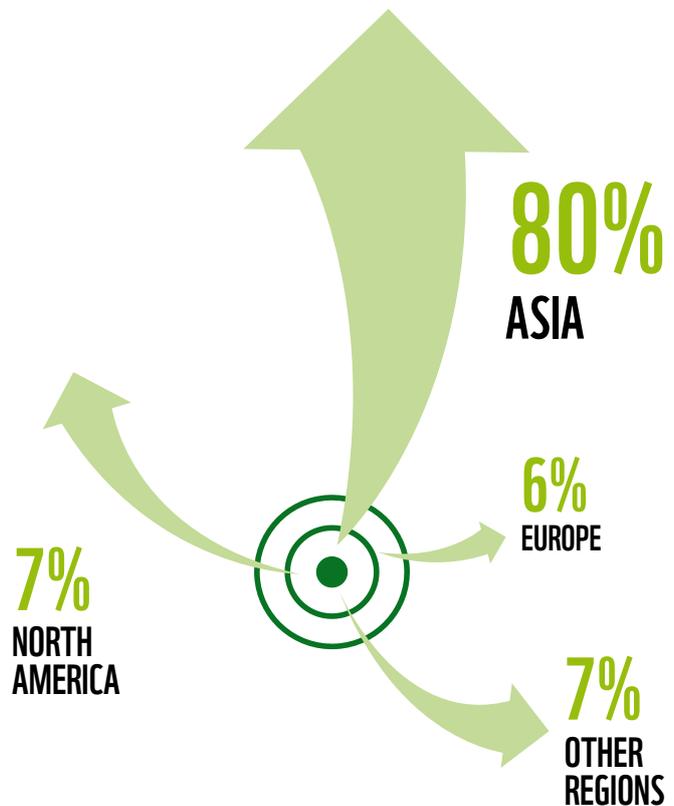


FIGURE 2.6: DIRECT EXPORTS BY DESTINATION FOR FOREST PRODUCTS FROM INDONESIA AND MALAYSIA

³⁰ FAO Stat, 2010

³¹ National Timber Industry Policy 2009-2020

Forest products contribute 2.1% of Indonesia's³² and 3% of Malaysia's³³ national GDP; a relatively modest proportion given their rich forest resources. Indeed, both countries are seeking greater value added from their forestry activities. The 'Malaysian National Timber Industry Policy' lays out plans for annual growth of 6.4%, more than doubling revenue to 2020. This is to be achieved by further increases in downstream processing (principally from, flooring, laminated veneer lumber, laminated timber, furniture, and joinery products such as doors, windows and mouldings), such that they represent 60% of the value in the industry, up from 40% today. In Indonesia they are also looking at downstream industries, but the focus of their strategy is on timber supply, in particular from the expansion of plantations.³⁴



FIGURE 2.7: LOGS ARE LOADED ONTO SHIPS FOR EXPORT

Forestry and the Heart of Borneo

Decreasing availability of natural forests as an economic source of timber puts increasing pressure on remaining intact forests. There are currently 5.8 million ha of logging and plantation concessions inside the HoB.³⁵ To ensure these activities do not compromise the governments' vision for the HoB it is important that they are sustainably managed.

³² BPS National Income of Indonesia, 2008

³³ Malaysia's National Timber Industry Policy 2009-2020

³⁴ A Roadmap for the Revitalisation of Indonesia's Forest Industry, 2007

³⁵ Malaysia 3.2 million ha (Source: Sabah, Sabah Forestry Department presentation, HSBC Forum, July 2010; Sarawak, Project Implementation Framework (PIF) Sarawak, August 2009); Indonesia 2.6 million ha (WWF data); Brunei 138,000 ha, (source: Feasibility Assessment Report for Financing the Heart of Borneo Landscape, pg 31)

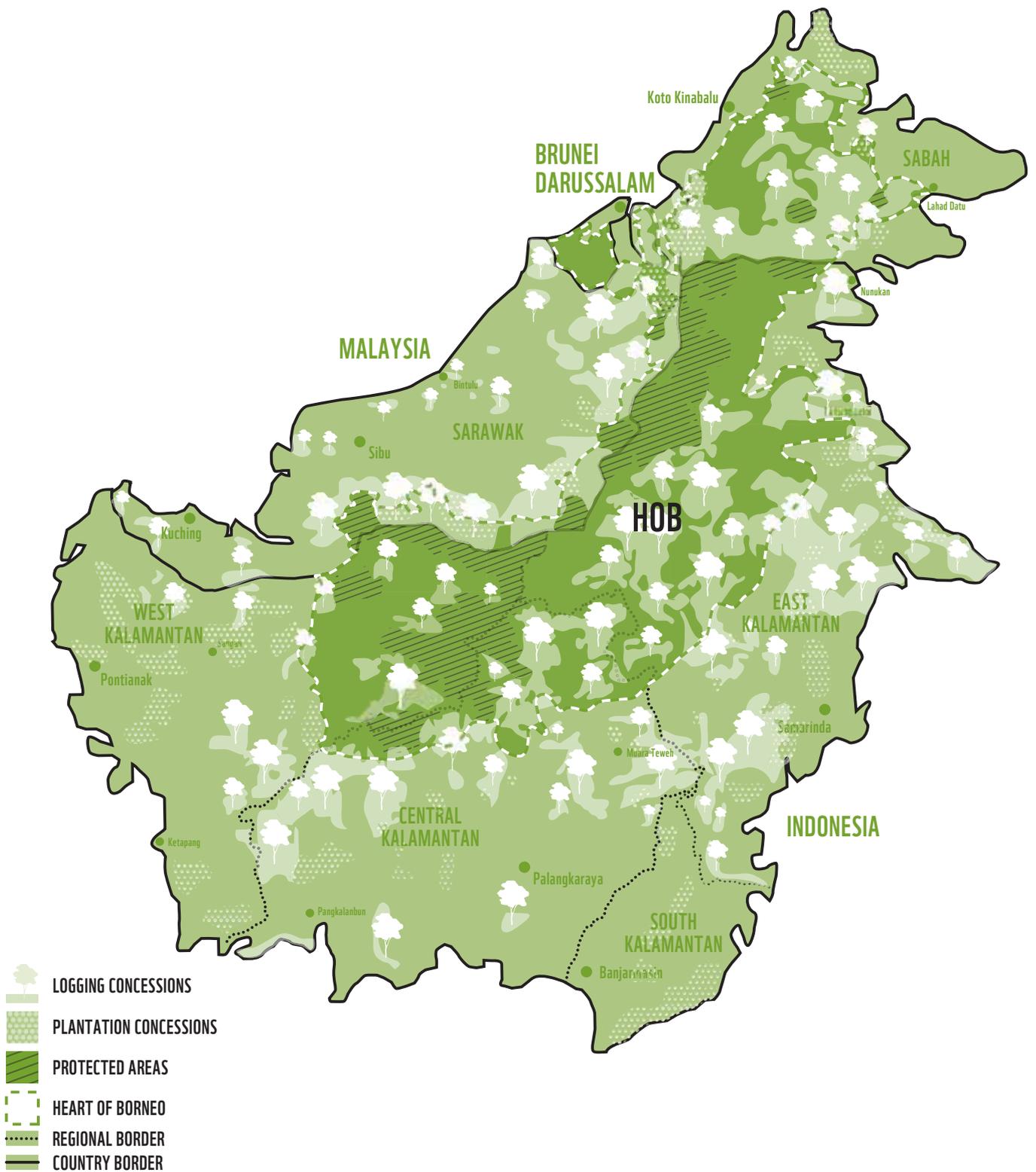


FIGURE 2.8: ILLUSTRATIVE MAP OF LOGGING AND PLANTATION CONCESSIONS IN BORNEO

NB: This map provides an illustrative estimate of the location and size of concessions based on publicly available information; it is not intended to be a precise representation.

Amongst the states of Borneo, Sabah is currently leading the way on sustainable forest management. Following the decline in available natural timber resources, and growing environmental concerns, Sabah Forest Department has mandated that all forest management units must be independently certified by 2014, for example through the FSC. In addition, the state has imposed more stringent limits on the annual allowable cut and enlisted an independent firm to monitor all natural forest management areas under the Reduced Impact Logging Approach. There are currently over 270,000 ha of certified logging concessions (FSC or MTCC certified) within the Sabah region of the HoB, with the balance of 1.5 million ha within this area aiming to meet the challenging 2014 timetable for certification. As a result of these moves towards sustainable production levels, annual log production from natural forests is likely to decline moderately in the near term but, if the aims of the programme are met, continuing production should be truly sustainable and continue to deliver value to government, companies and communities over the long term.³⁶



FIGURE 2.9: FSC STAMPED TIMBER

In Sarawak the planned production from natural forests is set to remain at the current level of about 10 million m³ per year. Much of this is likely to be produced from the 1.7 million ha of active timber concessions within the HoB.³⁷ The implementation of sustainable practices will be important to ensure that a reasonable level of production can be maintained without sacrificing future supplies and the delivery of the HoB vision. To this end, WWF is helping Ta Ann to work towards FSC certification for their concession in Sarawak, it hopes to be the first company in the state to achieve FSC certification.

The Indonesian forestry roadmap emphasises the need to temporarily reduce production until adequate sustainable sources of timber can be provided. There are currently 2.6 million ha of logging concessions inside the HoB boundaries in Indonesia. In September 2010 the Ministry of Forestry issued a decree that all forest management units in Indonesia must now be assessed under the Indonesian Timber Legality Assurance System.

Several private forestry companies were already pursuing more sustainable practices and some are moving towards formal certification. For example, WWF's Global Forest Trade Network is working with 9 forestry companies operating in Borneo, representing more than 1.3 million ha of logging concessions, and 36 manufacturers and exporters across Indonesia and Malaysia, to support sustainable logging practices and move towards greater uptake of FSC certification.³⁸ Despite this assistance, consultations indicated that progress towards certification can be slow, in some cases limited by conflicting state and national regulations, or by uncertain long term tenure.

³⁶ National Timber Industry Policy 2009-2020

³⁷ Project Implementation Framework (PIF) Sarawak, 2009

³⁸ http://gftn.panda.org/gftn_worldwide/asia/indonesia_ftn/

Illegal logging

The good intentions of governments and companies increasingly interested in sustainable forest management are however threatened by illegal forestry. The UN Office on Drugs and Crime estimates that Indonesia loses between 1.6 and 2.8 million ha of forest annually to illegal forest clearance.³⁹ However, illegal logging is thought to be decreasing; for example, estimated consumption of illegal roundwood by mills halved between 2002 and 2005 from 42.5 million m³ to 20.3 million m³.⁴⁰ Government efforts to halt illegal logging have no doubt contributed to this decline. For example, in Sabah 245 cases of illegal logging were under investigation in 2008 (193 people arrested and 106 sentenced) and 150 vehicles seized.⁴¹ Bans on the export of roundwood logs greater than 30cm in diameter in Indonesia and Malaysia are also thought to have contributed to reductions in illegal logging.



FIGURE 2.10: ILLEGAL TIMBER BEING TRANSPORTED DOWN RIVER

International agreements are also pushing for greater control on the forest value chain. Most notably the EU Forest Law Enforcement, Governance and Trade (FLEGT) law, which comes into force in 2013, aims to ensure none of the timber entering the EU is illegally sourced. The law sets up bilateral agreements between forest nations and the EU to work together to tackle illegal logging. The bilateral agreements with Indonesia and Malaysia focus on promoting harmonization of national and regional legislation, capacity building in the Forestry Ministries and auditing bodies to improve forestry management and promote sustainable techniques. In addition the bilateral agreements set up provisions for third party auditing of forestry licences and the value chain to ensure its legality.

³⁹ quoted figures from the Indonesian Ministry of Forestry - <http://www.unodc.org/unodc/en/frontpage/2010/June/illegal-logging-in-indonesia-the-link-between-forest-crime-and-corruption.html>

⁴⁰ A Roadmap for the Revitalisation of Indonesia's Forestry Industry

⁴¹ Sabah Forestry Department Annual Report 2008

ENVIRONMENTAL AND SOCIAL CHALLENGES AND SOLUTIONS

The continuing expansion and developments in Borneo’s forestry sector demands that ever more careful attention be paid to environmental and social concerns, especially given the presence of logging and plantation concessions inside the HoB.

Better environmental practices are being implemented by leading companies who are also seeing revenue opportunities through good management of environmental risks. State, national and international governments, NGOs, investors, and consumers can also help to drive the changes, and provide the appropriate technical assistance, regulatory frameworks, and price signals.

Table 2.1 outlines some of the key potential environmental issues which can arise from poor management of forestry activities.

Habitat loss	Logging Natural Forests:	Clear-felling removes the whole forest ecosystem, resulting in severe reduction or complete loss of habitat and ecosystem values. The impacts associated with selective logging are less adverse, but can nevertheless be significant if managed poorly.
	Plantations:	Plantations demand large areas, and their monocultures have very limited biodiversity. If plantations are built by clear-felling natural forest they lead to a severe loss of habitat and ecosystem values.
Carbon emissions		Borneo’s forests are a carbon sink of global importance; however, deforestation releases this carbon. Fire is often used to clear forest, which can spread uncontrollably. The 1997/8 fires burnt 9.7 million ha of land, releasing huge quantities of carbon dioxide. ⁴² Plantations on cleared land only sequester a small proportion of these emissions.
Land erosion	Logging Natural Forests:	Clear felling exposes the land to soil erosion, and poorly implemented selective logging can also result in serious soil degradation. Heavy rain and wind removes exposed and disturbed topsoil rendering the land less productive for agriculture, and severely impacts the prospects of forest regeneration in the area.
	Plantations:	Without proper management plantations suffer from soil erosion and land degradation, especially where large expanses of land are cleared and then not subsequently planted.
Degradation of watercourses	Logging Natural Forests:	The clearance of watershed forest cover can degrade the quality of watercourses, leading to unpredictable and severe flash floods and mudslides that endanger downstream settlements.
	Plantations and Processing Operations:	Plantations often use chemical fertilisers and pesticides. In addition, effluent waste from paper processing can contain high concentrations of bleaches that are toxic if not properly treated. This can leach into groundwater, affecting drinking supplies for the local communities and downstream urban areas. The overuse of water and diversion of watercourses can lead to shortages elsewhere.
Social Issues		The allocation of logging and plantation concessions does not always take into consideration the traditional land rights of indigenous and other communities. These communities may use the land for crops and fruit trees, or for social activities. Logging and plantation expansion can result in conflict and displacement.

TABLE 2.1: POTENTIAL ENVIRONMENTAL ISSUES DUE TO POOR FORESTRY MANAGEMENT

The issues noted above are addressed in the following solution boxes. These highlight the appropriate practical actions that different stakeholders can take to reduce their impact and therefore their risks. In addition, the solutions identify how WWF can help companies and governments successfully implement more sustainable practices.

⁴² <http://www.restorpeat.alterra.wur.nl/download/Fires%20in%20Indonesia%201997-2006%20Hotspots%20RSS.pdf> (detected by NOAA, ATSR & MODIS)

High Conservation Value Forest

What's the issue?

Forests are valuable for many reasons; regulating water flow, preventing floods and land slides, storing carbon and providing habitat for endangered species. Logging high conservation value forest (HCVF) reduces these sources of forest value and clear felling results in their near total loss. If valuable areas are not identified and appropriately managed the economic and environmental damage may outweigh short term financial returns.

What did you tell us?

Need for better and quicker services to identify and manage HCVF - HCVF assessment can be a slow process in Borneo due to lack of assessors, and there is a need for better industry specific management guidance.

Cooperation for conservation - Wildlife corridors and conservation initiatives need to be planned at a landscape level requiring potentially complex multi-stakeholder cooperation.

Restricting access - HCVF are often in relatively remote areas; restricting access from small scale and illegal actors can cause conflict and be resource intensive.

Solutions and guidance

The distribution of high conservation value forests needs to be considered prior to allocation of forestry concessions and long before any clearance and planting. In situations where some habitat fragmentation is unavoidable, wildlife corridors connecting fragmented forests should be set up and maintained to allow migration and ensure population viability. WWF and FSC guidelines do allow for some reduced impact logging in HCVF but firmly recommend that new forest plantations do not replace HCVF or any area required to maintain or enhance HCVF.

See: www.hcvnetwork.org for the latest tools and guidelines for HCVF identification and management

See: www.wwf.or.id/berita_fakta/publications/?13160/Panduan-Identifikasi-Kawasan-Bernilai-Konservasi-Tinggi-di-Indonesia for Indonesia's HCVF toolkit

See: www.wwf.org.my/media_and_information/publications_main/?9920/HCVF-Toolkit for Malaysia's HCVF toolkit.

What's the issue?

Logging specific - Restoration Concessions

Forest degradation is a serious problem in Borneo. Concessions that are inactive can be subject to illegal logging and encroachment. The loss of value from degradation may then result in them becoming idle and being abandoned completely; lack of proper management and access restriction in such cases can result in degradation to the point where the forest cannot recover and the area becomes a wasteland.

In Kalimantan for example there are an estimated 34 concessions covering an area of 3.2 million ha considered at high risk from inactivity.⁴³ Concessions might be inactive for several reasons:

- High concentration of low value timber and low concentration of the most valuable species;
- Poor access or difficult terrain with steep slopes rendering harvesting uneconomic; and
- Third party issues such as those associated with encroachment (legally and illegally) for other types of activities (mining, plantations, or residential).

What did you tell us? Solutions and guidance

Need technical expertise – Forest restoration requires more technical know-how than logging operations and so companies need support.

To address the problem of idle land and abandoned concessions the government of Indonesia introduced a new type of forest concession in 2008, 'Restoration Concessions' (Minister of Forestry Regulation No. P61/Menhut-11/2008). This concession type is designed to protect the abandoned concessions so they can recover to a point where they are again viable for timber harvesting. Often these might be adjacent to active concessions making it easier for companies to restrict access, monitor their restoration, and subsequently commence logging activities. Two such concessions have been licenced in Indonesia and 12 permits are pending. The WWF Global Forest and Trade Network (GFTN) is actively helping Indonesian foresters to locate and manage restoration concessions. The GFTN has a target to assist 2 million ha of abandoned forest concessions to be approved for restoration status by 2015.

This will involve:

1. Identification of potential sites in need of restoration forest management;
2. Assessment of the local social sensitivities;
3. Promotion and marketing to generate support for the restoration concession ;
4. Facilitation of companies that are seeking restoration concessions in the area;
5. Development of the business model; and
6. Development of a scheme to manage all of the remaining forest concession that are currently abandoned with the purpose of avoiding further degradation and deforestation.

This comprehensive program should help return the health of the standing stock so that it may be utilised in the future as production forest.

GFTN members PT. Alas Kusuma Group and PT. Sumalindo have each applied for an abandoned concession adjacent to their existing logging concessions. Once the forest quality has been restored, these may then be appropriate for revenue generating sustainable logging practices.

Financing restoration concessions remains one of the biggest challenges, as the permits have the same cost as other extractive licenses. New financial incentives will therefore be important in ensuring the success of restoration concessions.



FIGURE 2.11 GFTN WORKSHOP

⁴³WWF, unpublished analysis, Solutions to dormant and abandoned concessions in Indonesia

What's the issue?

What did you tell us?

Solutions and guidance

Plantation specific - Responsible Cultivation Areas

Just as there are areas of forest with high conservation values, there is also a lot of available land, particularly in Kalimantan, that has relatively low conservation value; usually because it has been heavily degraded by past activities and then abandoned. This idle land can in many cases be used to gain the economic and social benefits of forestry plantation development without serious environmental trade-offs once land titles and tenure rights are clarified.

In the past, some forestry plantation concessions that have been awarded on forest lands have not been planted following clearance. It is important that idle or cleared lands such as these are prioritised for any new plantations.

Regulators play an important role - "Central and local government need to clarify and harmonise spatial plans and the guidelines for land allocation."

Adequate compensation is needed - "If we are awarded a concession, what incentive is there for us not to use it?" - Suitable replacement plots should be provided where forest concessions are given up and support for relocation will be needed.

Better access - "Many of these areas have poor transport links, and it is more expensive to reach mills." - The attractiveness of existing plots of idle land for use as forestry plantations can be enhanced by providing improved infrastructure and access to markets.

The allocation of land is a government process which is why WWF are working hard with the government in Indonesia and Malaysia to support good land use planning which takes the value of standing forests into account.

1) Use of idle lands

Areas with low conservation value and idle land can provide ideal sites for new plantations if land title and tenure rights have been clarified.

As part of WWF's efforts to support the sustainable growth of the sustainable biofuels industry we supported Ecofys in the development of a tool to help identify areas which may be suitable for responsible plantation cultivation, including those which:

- Have low conservation values;
- Have low carbon storage;
- Have resolved any land tenure issues; and
- Have appropriate land use designations in the national and local spatial plans.

This was developed for energy crops but we aim to continue to develop this tool to make it relevant to other plantation crops as well as combining it with our HCVF tools to offer useful high level information on areas with high and low conservation value across landscapes important to WWF.

See: www.ecofys.com/com/publications/documents/EcofysRCAMethodologyv1.0.pdf

The World Agroforestry Centre (ICRAF) rapid tenure assessment tool also provides more information on how to assess land tenure issues in the siting of a plantation.

See: www.worldagroforestry.org/sea/projects/tulsea/inrmtools/RaTA

2) Land swaps:

One new idea with a potentially high impact is to work with government and business to swap concessions from high value forest land to low value idle lands. If this proves acceptable to business, communities and government it has the potential to secure many hundreds of thousands of hectares of currently allocated forest lands, whilst maintaining the economic growth and opportunity associated with the forest plantation industry. It is also possible that the significant carbon savings associated with these swaps could be converted into carbon credits and used to compensate communities and businesses for any costs associated with the swap.

WWF are currently involved in discussions to identify a pilot area and an implementation coalition soon, look out for news on our website.

3) See HCVF solution above for guidance on identifying and managing HCVF

Species Management Practices

What's the issue?

Borneo is home to some of the world's most charismatic species, such as the pygmy elephant, orang-utan and rhino. There are 511 IUCN Red List threatened species in Borneo which are in danger of further decline without careful management.⁴⁴

The perceived conflict between the forestry industry and some of Borneo's most charismatic species and has caused significant negative international publicity for the industry in Indonesia and Malaysia.

What did you tell us?

Animals can cause damage - Some of the animals found in Borneo can eat or trample young saplings causing disruption to plantation activities and costing operators money.

Environmental and social sustainability - Consultations indicated that the rights of local communities should be the priority; WWF agrees that human well-being should be the top priority but also asserts that with good species management humans and animals can coexist comfortably and both local communities and animal populations can benefit.

Multi-stakeholder process - Species conservation requires consideration at the landscape level which requires cooperation between landholders.

Solutions and guidance

WWF has developed toolkits and training for companies who have important species in and around their logging concessions and plantations. These solutions can help to reduce the impact of plantations on key species as well as avoiding animal conflict which can be costly for plantation owners; for example, by outlining measures to reduce the likelihood that large animals cause damage to plantations.

See: wwf.panda.org/borneo/greenbusinessnetwork for links to specific species management resources.

WWF Indonesia through GFTN-IND has a collaboration program to support good species management. For example, WWF, with Fauna and Flora International, has worked with PT SJM in their Rongga-Perai concession to carry out HCVF assessments and develop species management plans, WWF will apply the lessons of this work to assist other companies.

⁴⁴ www.iucn.com

Certification

What's the issue?

The forestry sector in Borneo has received considerable negative international publicity for its perceived impacts on the rainforests of Borneo. WWF recognises that there are forestry companies that want to run their businesses responsibly and in balance with communities and the environment. The Forest Stewardship Council (FSC) was created over 15 years ago and has worked together with the industry and social and environmental NGOs to develop a set of principles and criteria which companies can use to ensure they strike that balance and to prove this to their stakeholders, including buyers, regulators, and financiers. WWF estimates that nearly 10% of global trade in industrial round wood is FSC certified and that over 26% is covered by one of the certification schemes (e.g. FSC, PEFC etc).

What did you tell us?

Technical capacity - "Certification bodies set stringent standards which are difficult to meet on the ground." - Assistance is needed for the implementation of new techniques requiring specialist knowledge to help producers meet the guidelines of the certification body.

Greater incentives required - "Changing management practices and incorporating sustainability factors is expensive."
"The European market is small relative to the Asian market."

Solutions and guidance

WWF recommends the use of the FSC certification system or equivalent standards. Both Indonesia and Malaysia have national certification schemes, the LEI and MTCC. These schemes are working closely with the FSC to strengthen their conditions and processes and gain greater international recognition, and thus greater price premiums. A WWF assessment showed that while FSC timber from Borneo could achieve a price premium of 10% to 15%, premiums for MTCC were only around 1% to 5%.⁴⁵

Environmental guidelines in the major certification standards include requirements for careful management of logging concessions, such as through Reduced Impact Logging. For plantations, guidance is provided to help foresters on issues such as land and erosion management, the use of chemical fertilisers and pesticides, control of run-off and waste, and the protection of watercourses and other surrounding features.

There are many ways that both small and large companies can access support to move towards sustainable certification:

- WWF's GFTN gives support to create a stepwise plan to achieve FSC certification, see: www.gftn.panda.org
- The Borneo Initiative gives grants to companies willing to sign up to a time bound plan towards FSC certification, see: www.theborneoinitiative.org
- The Forest Trust (TFT) works in forests and factories, helping companies and communities to implement sustainable practices and robust timber tracking systems. TFT guides partners along the path to achieve independent third party verification of legality and certification to FSC standards and helps to bring responsible wood products to the market by linking responsible buyers, suppliers and producers. On the island of Borneo TFT is currently assisting the managers of more than 550,000 ha of production forest to improve forest management practices and to achieve legality and sustainability certification. TFT works with natural forests, timber plantations and supply chains for timber and pulp and paper, see: www.tft-forests.org/product-groups/page.asp?p=6283

CASE STUDY - SFI OBTAINS CERTIFICATION

The Issue

SFI is part of a large multinational company and is required to manage its business in accordance with international standards of social and environmental responsibility alongside providing a fair return for its investors.

The Response

SFI enlisted TFT to review their different options to meet their requirements, concluding that certification through FSC best met their corporate responsibility objectives and would also allow them access to protected markets for sustainable forest products.

The Results

With the assistance of TFT, SFI's operations were compared with the FSC Controlled Wood (CW) standard and a number of shortcomings, or gaps, were identified. In particular, to achieve certification SFI needed to ensure its operations provided the appropriate protection to high conservation value forests (HCVF). Lacking in-house expertise and resources to complete a HCVF survey, SFI sought the help of WWF Malaysia to do this for them. WWF, using their own experts together with those from the Sabah Museum, University Malaysia Sabah, Yayasan Sabah, and the Sabah Forestry Department's Forest Research Centre, was able to work with SFI to produce a report that met the FSC-CW requirements for HCVF. Good cooperation from employees and contractors allowed the other gaps to be closed and in February 2010 SFI was awarded an FSC-CW certificate for a period of 5 years by SmartWood, the certifying body of the USA based Rainforest Alliance.

⁴⁵ WWF, 2007 Natural Capital, Financing Forest Certification in Malaysia

What's the issue?

Logging specific - Reduced Impact Logging

Poor forest management practices cause unnecessary damage to the surrounding forest and also reduce regeneration rates and thus future revenues. Reduced Impact Logging (RIL) is a collection of harvesting techniques that reduce the damage to the surrounding forest by as much as half⁴⁶, and reduce carbon emissions⁴⁷, allowing periodic harvesting and sustained forestry revenues.

RIL requires preparatory activities to ensure the subsequent harvesting operation is efficient and minimises forest damage. Pre-harvest activities include gathering information on the location of valuable trees, which is used, together with knowledge of HCVF and sensitive areas (such as sloped land), to produce a comprehensive harvesting plan. The harvesting operation itself might include other techniques to reduce damage to the forest, such as cutting connecting vines, and reducing the number of skid trails used to extract felled trees.

What did you tell us?

Incentives are needed - Reduced impact logging can be more expensive and difficult to implement in the short term. "Some companies call it Reduced Income Logging because of the impact it has on returns."

Long term view - Short forestry licences and uncertain tenure reduces the attractiveness of RIL over more intensive options. "Why should we be concerned with preserving long term revenues when we can only secure a short term licence."

Solutions and guidance

WWF is working with government in Indonesia to call for longer concession licences to make investment in long term sustainable management more attractive.

RIL can be combined with certification programmes allowing companies to access markets offering a price premium for sustainable products (see Certification solution above). In 2006 PT. Sumalindo Lestari Jaya II received FSC certification for their 267,600 ha natural production forest unit in East Borneo, a process which involved demonstrating their ability to consistently practice RIL.

For advice and information on RIL organisations such as WWF's GFTN and The Tropical Forest Foundation can help:

www.gftn.panda.org

www.tropicalforestfoundation.org

To find out more about the potential costs and benefits try the RIL cost calculator:

www.blueoxforestry.com/rilsim

⁴⁶ Marsh et al., Reduced Impact Logging: A Pilot Project in Sabah, Malaysia, CIFOR, 1996

⁴⁷ Putz et al., Improved tropical forest management for carbon retention, PLoS Biology, 2008

What's the Issue?

What did you tell us?

Solutions and guidance

Plantation specific - New Generation Plantation Project

Poorly designed or managed plantations may threaten the rights or livelihoods of local peoples and degrade valuable ecosystems but WWF believes that responsible production can contribute positively to local economic and social development.

New Generation Plantations are forest plantations that:

- Maintain ecosystem integrity;
- Protect high conservation value areas;
- Are developed through effective stakeholder participation processes; and
- Contribute to economic growth and employment.

Changing practices - "It is difficult to change from proven practices without confidence that the alternatives can be equally profitable."

WWF is promoting best management practices for pulpwood and timber plantations through the New Generation Plantations Project (NGPP).

The project brings together companies, governments and market stakeholders from around the world, including Sabahan company: SFI and the Sabah Forest Department. The NGPP responds to a growing need for a better understanding of the role that plantations can play in forest landscapes, by collecting examples of well-managed and appropriately located plantations, as key features of healthy, diverse and multi-functional forest landscapes, compatible with biodiversity conservation and human needs.

See the NGPP website www.newgenerationplantations.com for research papers the project has developed which respond directly to the needs raised by the plantation companies involved.

They include papers on:

- Stakeholder engagement;
- Ecosystem integrity; and
- High conservation value forests.

The FAO's Voluntary Guidelines on the Responsible Management of Planted Forests provide a further useful resource for plantation managers: www.fao.org/docrep/009/j9256e/j9256e00.HTM



FIGURE 2. 12: A WELL MAINTAINED PLANTATION

Responsible Finance

What's the issue?

Timber companies must answer to their investors and shareholders and demonstrate that their money is being well spent. Many of the potential environmental impacts of logging and plantations can be avoided through the application of good management practices and investors can provide an important source of encouragement to implement these practices.

What did you tell us?

Incentive to act for larger companies – Larger companies seeking investment, particularly from international banks and investors, find responsible lending criteria to be an important incentive to act; 35% noted access to finance an important motivation for sustainability.

Local lenders less concerned – Smaller business investors and lenders are often less concerned about sustainability and smaller operators have less exposure to different forms of finance so financing criteria do not provide a strong incentive.

Solutions and guidance

Some major banks active in the Borneo region have policies which prevent investment in unsustainable operations and promote investment in sustainable timber businesses.

WWF has produced detailed guidance to help financial institutions develop and implement a responsible timber financing and investment policy, see: <http://assets.panda.org/downloads/wwfinvestmentpol7oct03final.pdf>

The World Business Council for Sustainable Development and PwC also produced a toolkit to inform the responsible financing of activities which impact on forests: www.pwc.co.uk/pdf/forest_finance_toolkit.pdf

Further guidelines are available via the: UNEP Finance Initiative, UN Principles for Responsible Investment, and Equator Principles.

What's the Issue?

New Financial Incentives

Forests provide society with valuable ecosystem services; however, private companies often do not take these values into account when making decisions to log forests or clear them for plantations, resulting in a net loss of value to society. New financial incentives are being developed and implemented to encourage greater consideration of public forest values by private actors.

New financial incentives include payments for ecosystem services, payments for carbon credits generated through Reducing Emissions from Deforestation and forest Degradation (REDD+) and Clean Development Mechanism (CDM) projects, as well as accessing price premiums through certification bodies.

Examples of REDD+ programmes may be direct payments to foresters who reduce their carbon emissions from logging natural forests, either through sustainable forest management, reduced impact logging, or forest restoration and conservation. REDD+ currently operates via the voluntary carbon markets, however, efforts are underway to bring into effect an international mechanism for REDD+, with the aim of securing much greater financial flows. In the meantime, a USD 1 billion agreement between Norway and Indonesia is looking to place a moratorium on new forest clearance between 2011 and 2013. How these funds might be allocated to forest managers is currently under discussion. REDD+ could help to make FSC and RIL more financially attractive if a rigorous mechanism which supplements sustainable forest management income with carbon credit revenues can be developed.

What did you tell us?

Financial incentives – NGOs and governments need to help producers learn about the new financial incentives available and how to take advantage of them. “Traditional foresters are not familiar with being paid to not cut down trees!”

Solutions and guidance

WWF is working with the three HoB governments to help them to understand the value of the HoB forests and also how to sustainably finance the delivery of the HoB Declaration. In October 2010 the three governments launched a sustainable financing assessment for the HoB. This outlines finance sources which are available to support companies, governments and communities to meet the HoB Declaration, see our website for more details.

There are tangible advantages available from new financial incentives for forestry operators. For example, there are a number of REDD+ pilot projects in Borneo. The Rimba Raya Conservation project covers 91,000 ha in Central Kalimantan and is currently selling carbon credits through the voluntary market to Gazprom Marketing & Trading. The area was purchased by InfiniteEARTH to avoid forest clearance.

The Ramba Raya project is a ‘pure conservation’ example, however, REDD+ projects can operate alongside sustainable forest management. For example, the INFAPRO project in Sabah is rehabilitating 25,000 ha of degraded forest, and is also selling carbon credits through the voluntary market. Following restoration the forest will be sustainably managed for timber and other forest products. It also serves as a buffer for the adjacent Danum Valley Conservation Area.

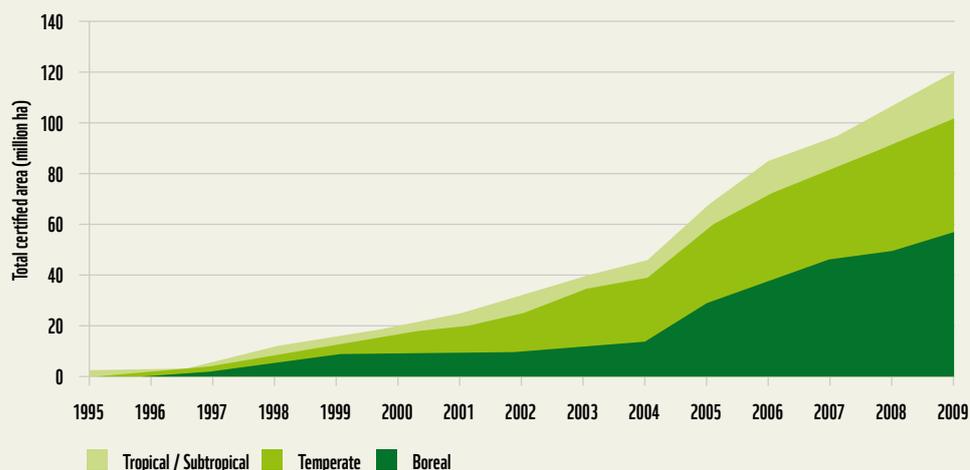
WWF has a number of initiatives underway to help producers, investors and regulators access new financial incentives. WWF US is also a partner in The Natural Capital Project – this project has developed a tool called INVEST (Integrated Valuation of Ecosystem Services and Trade-offs), a tool which helps to map and value the services provided by nature. We are working with the three HoB governments to use this tool in the HoB. Its outputs will be of interest to government policy makers and companies alike.

For more information see: wwf.panda.org/borneo/greenbusinessnetwork

What's the issue?

Driving Demand for Sustainable Forest Products

There is a growing awareness amongst consumers of the potentially negative environmental and social impacts associated with unsustainably produced forest products. As a result, demand for sustainably sourced products has increased significantly over the last 15 years. WWF's GFTN member companies trade over USD 70 billion of forest products every year, 40% of which is FSC certified; an estimated USD 28 billion of FSC materials. It is estimated that the current area of FSC certified forestry is now more than 120 million hectares (Figure 2.13). However, to encourage continued expansion of FSC certification price premiums are needed which in turn requires that demand for FSC certified material continues to increase at least in line with increases in supply.



Source: FSC, 2010

FIGURE 2.13: FSC CERTIFIED FOREST AREA

What did you tell us?

Lack of market information – Information on demand for certified timber and potential premiums needs to be passed up the supply chain to local producers. “Price premiums are only accessible by vertically integrated companies, small companies have less incentive to seek certification.”

Lack of demand in major markets – China and other areas of Asia (except Japan and Australia) currently seem less concerned with provenance of supply. “Certified production is chiefly for Europe, but this is only a small portion of the total market.”

Solutions and guidance

WWF believe that sustainable management of natural forests can be an important way to keep forests standing and that sustainably managed timber plantations, in the right places, can take the pressure off natural forests. WWF is working hard to ensure that demand for sustainable timber continues to increase to maintain and enhance the incentives to seek certification.

For example, all of the GFTN member companies have committed to move towards sourcing 100% sustainable, FSC certified timber. See: www.gftn.panda.org for more information.

WWF also recognises the need to do more to encourage the Asian markets to buy sustainable forest products and we now have active programmes to do just that in both countries. To find out more about progress visit: wwf.panda.org/borneo/greenbusinessnetwork

What's the issue?

What did you tell us?

Solutions and guidance

Buying Environmentally Friendly Paper

Growing paper consumption necessitates increases in the area of pulpwood plantations. Consumers and paper distributors can help increase the uptake of sustainable production methods through sourcing environmentally friendly paper.

Demand is key - "Unless buyers specify demand for certified paper there is no incentive to produce it, especially given the costs involved."

To reduce the environmental footprint of paper production and paper consumption, WWF has developed a one-stop 'paper toolbox' to guide paper producers as well as commercial and individual paper buyers: wwf.panda.org/how_you_can_help/live_green/at_the_office/reducing_paper/paper_toolbox/

We also published the 'Paper Guide' to help paper buyers and end consumers to adopt an environmentally and socially responsible approach to sourcing paper: http://assets.panda.org/downloads/wwf_paper_guide.pdf

In addition, the 'WWF Paper Scorecard' is a practical tool that assists paper purchasers to score the environmental footprint of the paper they buy, and allows responsible paper producers to demonstrate what they are doing to minimize negative environmental impacts of the paper products they sell: wwf.panda.org/how_you_can_help/live_green/at_the_office/reducing_paper/paper_toolbox/tools_for_paper_buyers/wwf_paper_scorecard/

The business case for sustainable forestry in Borneo

The economic case for reducing deforestation and improving environmental practices is increasingly being recognised at national and international levels based on the value which intact ecosystems deliver to society.

At the level of an individual company the business case for sustainable practices can be more complex. A range of challenges, often linked to cost and technical capacity, have been identified by producers and these are addressed in the preceding sections. Notwithstanding these challenges, the business benefits of improving environmental practices are increasingly recognised by some forestry companies in Borneo.

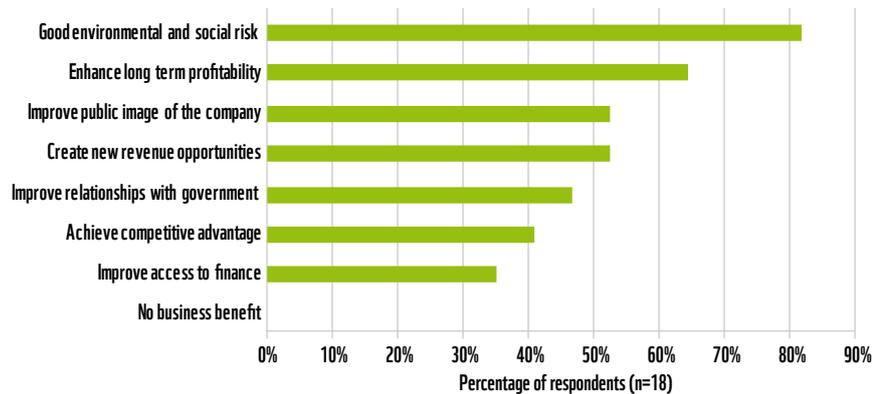


FIGURE 2. 14: BENEFITS OF GOOD ENVIRONMENTAL AND SOCIAL PRACTICES AS REPORTED BY FORESTRY COMPANIES IN BORNEO

Figure 2. 14 is based on interviews and surveys with 18 respondents from forestry companies operating across Sabah, Sarawak and Kalimantan. 82% of this group identified good environmental and social risk management as a benefit of sustainability activities while two thirds (65%) of respondents thought that sustainability activities would improve their profitability in the long term. More than half (53%) felt that their company would benefit from an improved public image and an equal proportion cited opportunities to create new revenue streams as a reason to pursue sustainable practices.

Furthermore, as indicated in the solution boxes on previous pages; from increasing demand for FSC certified forest products and new international funds for avoided deforestation; to heightened enforcement of existing regulation and new financing requirements from lenders; many factors are coming together to strengthen the business case for sustainable forestry in Borneo.



The first section of this chapter considers palm oil production, consumption and export in Borneo and sets this in the context of recent developments in the palm oil industry in Indonesia and Malaysia, noting the implications for the HoB. The second part of the chapter extends this analysis to look specifically at the environmental and social impacts associated with palm oil production, the challenges of pursuing more sustainable practices identified by palm oil producers in Borneo, and suggests practical solutions to these challenges. The final section draws on the results of our engagement with producers to summarise the business case for sustainable palm oil in Borneo.

“**DEMAND FOR CERTIFIED SUSTAINABLE
PALM OIL IS CHANGING THE MARKET**”

CHAPTER 3

BUSINESS SOLUTIONS FOR SUSTAINABLE PALM OIL IN BORNEO



Summary

- The palm oil industry in Borneo has undergone rapid growth, and continues to expand to meet growing world demand. Indonesia's and Malaysia's palm oil production amounts to 85% of the global supply and production in Borneo in 2008 was 16.5 million tonnes, representing more than a third of this.
- Palm oil plantations require the complete conversion of land use; if concessions are placed in high conservation value areas it can result in a significant loss of ecosystem value. The challenge for the governments' vision enshrined in the Heart of Borneo (HoB) Declaration is to ensure that as the cultivated area increases adequate protection is given to the HoB.
- Future revenues from the industry can be maintained and even increased, by concentrating on increasing productivity, particularly amongst small holders, expanding plantations on idle lands and developing downstream processing industries to add value without increasing pressure to convert natural forests.

Recommendations

- Government planners should ensure concessions are not allocated in high conservation value areas of the HoB, but rather on idle land with low conservation values.
- A shift to sustainable production, independently certified through the Round Table for Sustainable Palm Oil (RSPO), will result in improved environmental performance on existing and new plantations.
- Investors, traders and consumers should help drive sustainable management through financing and sourcing certified production.

More information can be found in the solutions sections:

Activities	Solutions	Page
Locating and planning	High Conservation Value Areas	53
	Responsible Cultivation Areas	54
Managing	Species Management Practices	55
	RSPO Certification	56
	Improving Smallholder Productivity	57
Financing	Responsible Finance	58
	New Financial Incentives	59
Buyers	Driving Demand for Sustainable Palm Oil	60

Introduction

Palm oil plantations dominate large parts of Borneo's landscape. There are more than 3.6 million ha of palm oil plantations across Borneo, much of this was once lowland tropical forest. Without the appropriate planning and regulation palm oil expansion could threaten the integrity of the HoB. WWF recognises that the industry continues to be a major contributor to the economic and social development of the communities in Borneo. There is however, increasing awareness of the environmental and economic costs brought about by the conversion of high conservation value areas. These potential costs of palm oil expansion can be avoided but this will require wide ranging implementation of sustainable practices, along with changes in regulation and the way national and regional governments zone and allocate land.

The challenge for the governments' vision encapsulated in the HoB Declaration is therefore to ensure that as producers look to expand the area under plantations, the value of the HoB forests is adequately maintained through conservation and sustainable use. Most importantly, government planners should aim to ensure concessions are not allocated in the most high value areas of the HoB, and that the activities of new and existing large and small scale plantations are regulated effectively. In addition, a shift to sustainable production, independently certified through the Round Table for Sustainable Palm Oil (RSPO), will result in better environmental performance on existing and new plantations. There is also a strong role for palm oil buyers to provide the incentives for change, through greater demand for RSPO products over unsustainable palm oil, and for financiers to drive better practices through implementation of sustainable investment criteria.

Palm Oil Production

Oil Palms were introduced to Borneo by the Dutch and British in the nineteenth century. It was not until the late twentieth century that production moved from principally small household plots to large scale commercial plantations. In particular, the industry has undergone enormous growth over the last 2 decades.⁴⁸ Indonesia and Malaysia account for more than 85% of the global palm oil supply, producing nearly 40 million tonnes per year from over 10 million hectares (ha) in cultivation.⁴⁹

Palm oil production in Borneo in 2008 was 16.5 million tonnes, representing more than a third of Indonesia's and Malaysia's combined production (Table 3.1). Since 2000 the total planted area in Borneo has increased by around 5% per year in Malaysia⁵⁰ and by 9% per year in Indonesia⁵¹ reaching 3.6 million ha in 2008⁵¹.

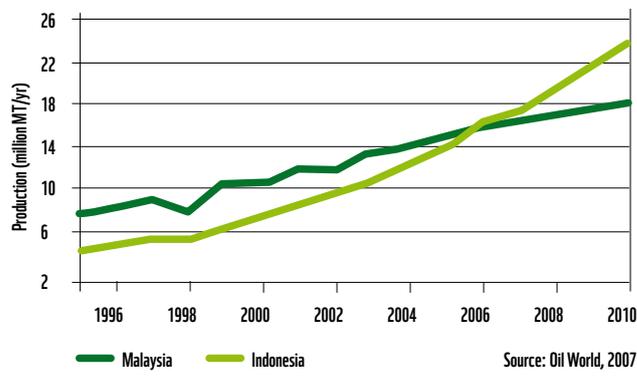


FIGURE 3.1: CRUDE PALM OIL PRODUCTION IN INDONESIA AND MALAYSIA

⁴⁸ Oil World, 2010

⁴⁹ Oil Palm Industry Economic Journal, 2003

⁵⁰ MPOB, 2009

⁵¹ Indonesian Commercial Newsletter, November 2009

⁵² BPS Kalimantan, 2009; MPOB, Statistics on Commodities, 2009; Department of Agricultural Sarawak, 2009

State	Production (tonnes)			Area (ha)
	2006	2007	2008	2008
West Kalimantan	557,000	520,000	523,000	410,000
Central Kalimantan	6,300,000	6,400,000	6,400,000	712,000
East Kalimantan	1,400,000	2,000,000	1,700,000	410,000
South Kalimantan	360,000	430,000	435,000	190,000
Sarawak	1,500,000	1,600,000	1,800,000	740,000
Sabah	5,400,000	5,600,000	5,700,000	1,200,000
Total	15,517,000	16,550,000	16,558,000	3,662,000

Sources: BPS Kalimantan, 2009; MPOB Statistics on Commodities, 2009; Sarawak Department of Agriculture, 2009

TABLE 3.1 REGIONAL PALM OIL PRODUCTION IN BORNEO

The palm oil industry is an important part of the national economies of Indonesia and Malaysia, representing 4.5%⁵³ and 3.2%⁵⁴ of GDP respectively. Palm oil also provides a significant source of employment for many of Indonesia's and Malaysia's rural poor employing more than 3 million in Indonesia⁵⁵ and 1.5 million in Malaysia⁵⁶. Further developments in palm oil offer continuing potential for economic and social development, but if environmental concerns are not adequately addressed the costs associated with environmental degradation in the long run, may outweigh the benefits from palm oil production.



FIGURE 3.2: PALM OIL PLANTATIONS IN BORNEO

Consumption and export

Indonesia's domestic consumption totals around 5 million tonnes per annum, about a quarter of its annual production of crude palm oil.⁵⁷ Malaysia uses around 2 million tonnes.⁵⁸ This domestic consumption is comprised of use in cooking oil, food products, cosmetics, oleo-chemicals and biodiesel production.

⁵³ Technology and Research Ministry, 2010

⁵⁴ New Economic Model for Malaysia, 2010

⁵⁵ World Bank Group palm oil strategy, 2010

⁵⁶ East Coast Economic Region Development Council, 2010

⁵⁷ Indonesian Commercial Newsletter, November 2009

⁵⁸ Global oils and fats business magazine, October 2010

While domestic consumption is increasing, the vast majority of crude palm oil production in Indonesia and Malaysia is still exported. The main export market is Asia, which represents more than 60% of exports with only a little over a quarter of exports going to the more mature European and American markets (see Figure 3.3). China, India, and Pakistan are likely to remain the dominant drivers of export growth for Indonesian and Malaysian palm oil. Global demand for palm oil is expected to continue to grow and palm oil is already a significant source of foreign exchange, generating export revenues of USD 12.4 billion⁵⁹ in Indonesia and USD 14 billion⁶⁰ in Malaysia.

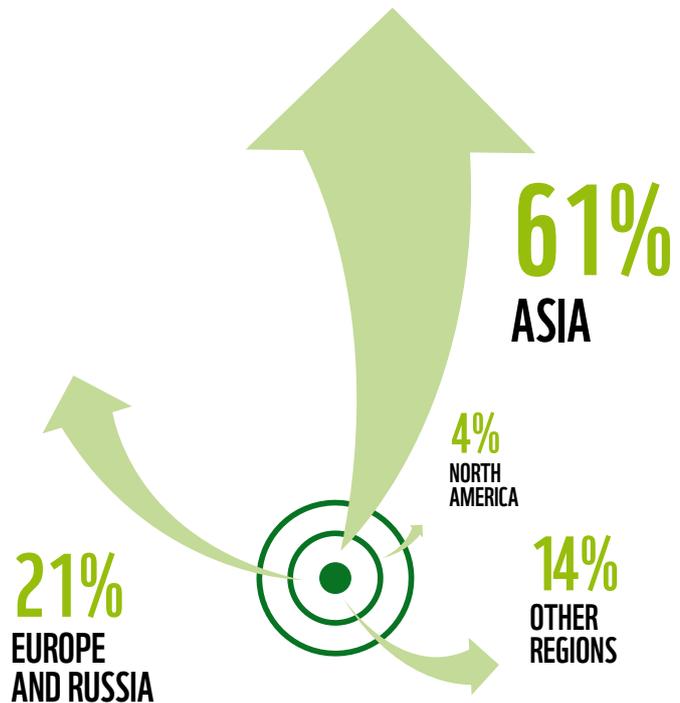


FIGURE 3.3: EXPORT DESTINATIONS FOR PALM OIL FROM INDONESIA AND MALAYSIA

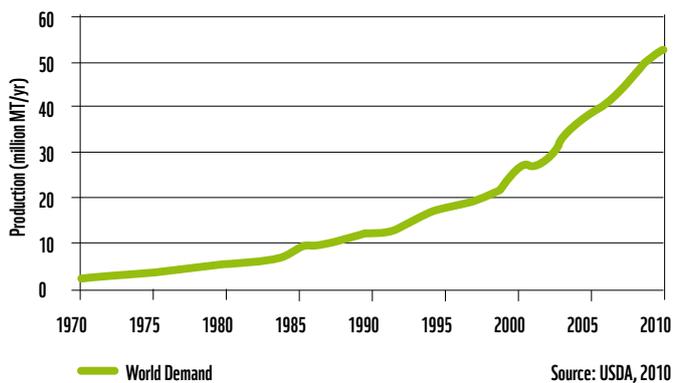


FIGURE 3.4: GLOBAL PALM OIL DEMAND

⁵⁹ Hatta Rajasa, Indonesia's Coordinating Minister for the Economy, interviewed in Bali, 2009

⁶⁰ MPQB, Statistics on Commodities, 2009

Production and infrastructure developments

Both Indonesia and Malaysia recognise that the exponential growth of palm oil demand shows no sign of abating and the governments are looking to build on their prominent position in the market. Malaysia's New Economic Model to 2020 envisages annual growth of 13.7%, from increases in planted area, improved yield, and greater capacity for downstream refining industry. Indonesia's Road Map of Development of CPO Processing Infrastructure also hopes to increase the value-added from palm oil production by increasing processing and refining capacity. Improved productivity and greater development of downstream processing are both important ways in which the palm oil industry can increase revenues and value added without increasing pressure on the HoB forests.

Adding value

As part of this, in Indonesia the government is planning five new industrial clusters, including three focusing on the development of the palm oil industry.⁶¹ They aim to decrease exports of crude palm oil, and increase downstream exports, and thus increase production value-added. One of these clusters is to be based in East Kalimantan, with the others in Riau and North Sumatra. The government is directing part of their fiscal stimulus towards these developments, and is actively seeking private investment, offering a range of incentives to push the plans forward.

Similarly, in Sabah the palm oil clusters at Lahad Datu, Sandakan, and Kimanis continue to expand and diversify, including a USD 50 million refinery to be built by the Mewah Group.⁶² In Sarawak, Bintulu and Tanjong Manis in Mukah Division have been identified as potential sites for clusters due to their proximity to deep-sea ports. Furthermore, the Malaysian government is planning a significant increase in refining capacity as part of a new palm oil cluster in the USD 35 billion East Coast Economic Region in Johor, Peninsular Malaysia which could ultimately process crude palm oil from all over Malaysia. National developments such as these will serve to drive continued demand and growth in the palm oil sector and put increased pressure on land use in the HoB. This may well be further exacerbated by international developments and new markets, including the rapid growth of biodiesel markets. For example, there are currently 20 operational biofuels plants in Malaysia, including 3 in Sabah. A further 91 licences have been approved for the construction of biodiesel plants, however, only 7 of these are currently under construction.⁶³ In addition, Neste Oil opened the world's largest biodiesel refinery in Singapore in November 2010, supported by the Singapore Economic Development Board.



FIGURE 3.5. PALM OIL STORAGE AFTER PRIMARY PROCESSING

Improved productivity

Included in the governments' plans for investment in the palm oil infrastructure are proposals for new and improved road networks. This is important because poor transportation infrastructure is one of the major barriers to increasing productivity - palm oil kernels need to be processed within two days of harvest or the fruit starts to decompose, reducing its yield. But improved transport infrastructure can be a double edged sword for vulnerable areas; on the one hand road improvement may serve to increase productivity, reducing pressure for new forest conversion, but on the other, new roads may open up previously inaccessible areas for development. If new roads result in improved access to intact forests this could lead to increased encroachment and illegal logging.

⁶¹ Industry Minister Mohamad S. Hidayat, interviewed in Jakarta Post, August 2010.

⁶² Company announcement, August 2010

⁶³ USDA Foreign Agricultural Service, Malaysia Biofuels Annual, 2010



FIGURE 3.6: ACCESS IS IMPORTANT TO ENSURE HARVESTS REACH THE PROCESSING FACILITY

Increased productivity is an important mechanism through which growing demand can, at least partly, be met without expanding planted areas. Together with access to processing facilities, productivity can be improved by providing assistance to smallholders. The Indonesian Palm Oil Commission estimates that smallholder productivity is about 2.5 tonnes per ha, compared with 4.1 tonnes per ha on large private plantations. This difference is largely due to the quality of smallholder seeds and their cultivation techniques. Smallholder plantations are particularly common in Indonesia and in Kalimantan they represent about 25% of the planted area.⁶⁴ Smallholders represent 5% and 11% of the palm oil area in Sarawak and Sabah, respectively.⁶⁵ Both countries are working towards improving productivity through smallholder replanting grants for quality seeds (including high yielding genetically modified varieties under development) and strategic replanting of ageing plantations.⁶⁶ Supporting smallholders to increase production and assist in the reduction of environmental impact offers significant potential to reduce the conversion pressure on forests.



FIGURE 3.7: REPLANTING ON INDUSTRIAL PLANTATIONS MAXIMISES USE OF LAND

Plantation expansion

Alongside efforts to increase productivity, both Indonesia and Malaysia are increasing their total planted areas. For example, Malaysia's Third Industrial Master Plan seeks to have 2.7 million ha planted by 2020, an increase of 800,000 ha from 2008. More ambitious still, Sarawak aims to have 2 million ha of plantations by 2015, an increase of 1.3 million from 2008.⁶⁷ This growth is expected to be outside of the HoB, as Sarawak currently has no concessions for palm oil plantations inside the HoB. On the other hand, new palm oil concessions in Kalimantan, particularly West Kalimantan, have been allocated inside the HoB boundaries. There are 1,600,000 ha of concessions inside the HoB; 770,000 ha of active concessions in Sabah,⁶⁸ and 830,000 ha of active and newly allocated concessions in Kalimantan,⁶⁹ these represent a significant threat to the ecological integrity of the HoB.

⁶⁴ BPS Kalimantan Tengah Dalam Angka 2009

⁶⁵ MPOB, Statistics on Commodities 2009

⁶⁶ Oil palms start to yield fruits after about 5 years, reaching peak production at the age of 8 to 11 years, after which point they start to decline in productivity.

⁶⁷ Land Development Minister Dr James Masing, 2007

⁶⁸ MPOB, 2009; plantation considered to be inside HoB if it lies within one of the 16 districts within the Sabah HoB region.

⁶⁹ Ministry of Agriculture and Agriculture Agency (District/Kabupaten level) and WWF Palm Oil company field Survey 2008

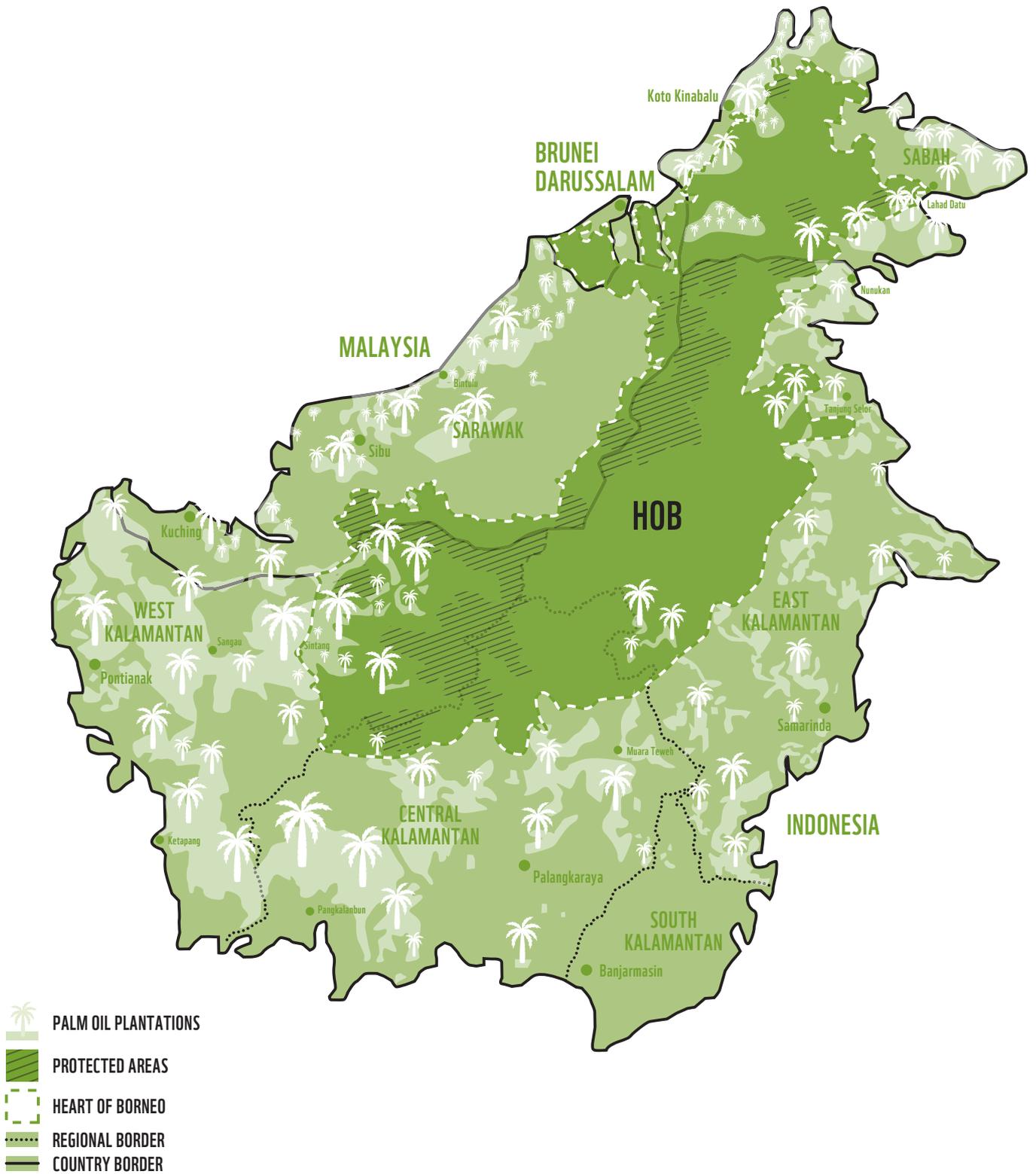


FIGURE 3.8: ILLUSTRATIVE MAP OF PALM OIL CONCESSIONS IN BORNEO

NB: This map provides an illustrative estimate of the location and size of concessions based on publically available information; it is not intended to be a precise representation.

Developments in Sustainable Palm Oil

The RSPO is a multistakeholder initiative through which industry, financiers, and NGOs have come together to develop a much needed set of principles and criteria to define sustainable palm oil. This ensures that key stakeholders such as international buyers and NGOs have a mechanism to support a sustainable palm oil industry. The RSPO is a voluntary certification scheme, providing environmental and social guidelines which signatories must adhere to, and it could help minimise the environmental impact of palm oil in the HoB. Certification allows producers to access markets for sustainable palm oil and potentially to achieve a price premium. Producers have voiced concerns that the premium is currently low and may be insufficient to cover the costs of RSPO certification. However, it is expected to increase significantly as the demand for RSPO certified palm oil increases.

The first RSPO plantations were certified in 2008, and membership has grown rapidly since. RSPO production is predicted to reach 3.5 million tonnes in 2010, 7.5% of total world production.⁷⁰ In Borneo there are currently 145,000 ha of RSPO certified plantations⁷¹ of which 12,000 ha are within the HoB boundaries⁷². For the most part, these are run by the large international producers with significant markets in western countries. However, the RSPO has a specialised task force which is working to bring RSPO certification to small holders and community groups.

⁷⁰ www.rspo.eu

⁷¹ 25,000 ha in Sarawak and 120,000 ha in Sabah

⁷² www.rspo.eu

When environmental decline becomes an economic reality

Despite promising prospects for future demand and the importance of the palm oil industry for providing jobs in rural areas and generating export revenues, continued expansion involving clearance of high conservation value areas will have high environmental and economic costs.

Recent analysis suggests that the economic and social costs of the loss of valuable environmental services (like fresh water provision, erosion control and carbon storage) outweigh the short term economic gains from clearance of high conservation value areas and conversion to alternative land uses. The value to society of intact tropical rainforest has been estimated at over USD 6,000 per hectare per year⁷³ on average, compared with private returns of around USD 2,100 per hectare per year⁷⁴ from mature palm oil plantations. While well managed palm oil plantation can provide some similar services to forests, such as erosion control, plantations cannot offer many other services including cultural and aesthetic values, comparable carbon storage or water filtration services.

In the medium to long term, the impacts on producers of nutrient loss and land erosion, loss of clean water supplies and disruption of local climate caused by large-scale deforestation can lead to declining productivity and in some cases complete ecosystem collapse, with significant economic and social costs associated. As an example, from the 1950s to the end of the century China significantly depleted its natural forests in order to meet increasing demand for timber. In the process, key ecosystem services such as watershed protection and soil conservation were severely compromised. This reached a tipping point in 1997 when severe droughts caused the lower reaches of the Yellow River to dry up for 267 days, threatening industrial, agricultural, and residential water users. Then, in 1998, major flash flooding occurred in almost all major river basins, devastating large areas, resulting in a significant loss of life, the displacement of millions of families, and causing approximately USD 30 billion of damage.⁷⁵

Mechanisms must therefore be put in place that recognise the full societal value of forests, including the valuable services that remaining intact forests provide to existing palm oil plantations. A change in the incentive structures which currently favour forest conversion is needed. This does not mean an end to palm oil expansion in Borneo, but should encourage a reallocation of new palm oil concessions to less valuable areas (e.g. already idle lands) and encourage improved environmental practices on existing plantations to ensure that any benefits are not outweighed by costs to society.

Shifting plantations to idle lands can be a win-win solution. Conservation of remaining standing forest maintains the value of the forest ecosystem services and by planting on idle land it is possible to improve the environmental quality of the land at the same time as producing palm oil revenues. WWF is planning to test this from an environmental, social and economic point of view in the work in the district of Kutai Barat in East Kalimantan.

Business does not need to face the challenge of the shift towards a green economy alone. All beneficiaries of ecosystem services need to work together to protect Borneo's remaining forests; international finance should be provided to recognise services provided internationally (such as carbon sequestration), and action is needed from national and state governments to realign incentives and support businesses that are affected.

⁷³ The Economics of Ecosystems and Biodiversity, UN, 2010

⁷⁴ Koh, L.P., Wilcove D.S. (2007) Cashing in palm oil for conservation. *Nature* 448, 993–994.

⁷⁵ Sun et al. The long march of green: The chronicle of returning agricultural land to forests in China, China Modern Economics Press, 2002, as reference in TEEB for Business, 2010.

ENVIRONMENTAL AND SOCIAL CHALLENGES AND SOLUTIONS

Government plans to drive further palm oil expansion and industry development in Borneo demands that ever more careful attention be paid to environmental and social concerns, especially given the presence of plantations inside the HoB.

Better environmental practices are being implemented by leading companies who are also seeing revenue opportunities and benefits through good management of environmental risks. State, national and international governments, NGOs, investors, and consumers can also help to drive the changes, and provide the appropriate technical assistance, regulatory frameworks, and price signals.

Table 3.2 outlines some of the key potential environmental issues which can arise due to inappropriate choice of locations or poor management of palm oil plantations.

Habitat loss	Conversion of high conservation value areas and their ultimate replacement with palm oil plantations results in reduced habitat and the loss of 80-90% of species; many of which may be endemic or threatened. ⁷⁶ Orang-utan habitat declined 39% between 1992 and 2002. ⁷⁷
Carbon emissions	Borneo's forests are a carbon sink of global importance; deforestation releases this carbon contributing to global climate change.
Fire	Despite its use being illegal across Borneo fire is still used to clear forests. In 1997/8 fires burnt 9.7 million ha of land, releasing huge quantities of carbon dioxide and fires can still be severe; most recently in May 2010. ⁷⁸
Watershed degradation	Palm oil plantations often use chemical fertilisers and pesticides. Inappropriate use can result in polluting run-off entering watercourses and contaminating groundwater through leaching. This in turn can pollute drinking water for downstream communities and adversely affect aquatic wildlife and fishing yields. Inappropriate irrigation and diversion of watercourses can also lead to water shortages.
Land degradation	Deforestation, forest fires, and peat land drainage expose the land to soil erosion. If land is left uncultivated, or is not effectively managed, soil erosion and land degradation can occur, particularly on sloped land. Heavy rain and wind removes topsoil rendering the land less productive for agriculture, and reducing the chance of forest regeneration. This can increase the frequency and severity of unpredictable flash floods threatening lives, infrastructure, and the environment.
Social Issues	The allocation of palm oil concessions does not always take into consideration the traditional land rights of indigenous and other communities. These communities may use the land for crops and fruit trees, or for social activities. Plantation expansion can result in conflict and displacement.

TABLE 3.2: POTENTIAL ENVIRONMENTAL ISSUES DUE TO INAPPROPRIATE LOCATIONS OR POOR MANAGEMENT OF PALM OIL PLANTATIONS

The issues above are addressed in the following solution boxes. These highlight the appropriate practical actions that different stakeholders can take to reduce their impacts and therefore reduce business risks. In addition, the solutions identify how WWF can help companies and governments successfully implement more sustainable practices.

⁷⁶ WWF, Borneo: Treasure Island at Risk, 2005

⁷⁷ Husson S. et al: The Status Of The Orang-utan In Indonesia; Report to the Orang-utan Foundation, UK, 2003

⁷⁸ <http://www.restorpeat.alterra.wur.nl/download/Fires%20in%20Indonesia%201997-2006%20Hotspots%20RSS.pdf> (detected by NOAA, ATSR & MODIS)

What's the issue?

High Conservation Value Areas

Forests are valuable for many reasons; regulating water flow, preventing floods and land slides, storing carbon and providing habitat for endangered species. If high conservation value areas are not identified and managed the economic and environmental damage caused by their conversion for oil palm might outweigh the benefits.

New plantations should also avoid carbon rich peat lands and swamp forest. About 50% of all newly planned large plantations in SE Asia are located in peat land areas⁷⁹. According to Wetlands International, this is a particular problem in Sarawak where the rapid expansion of plantations is largely on peatlands.⁸⁰ Until recently drainage of 'deep peat' (more than 3 meters) was prohibited in Indonesia. However, a recent Indonesian Ministerial decree reduced this protection by stating that conversion and drainage of peat more than 3 meters deep is now permissible if 70 percent or more of the area is less than 3 meters in depth. A key reason for the change is to allocate more land for palm oil.⁸¹ This development will inevitably have repercussions for global climate change.

In the past, some palm oil concessions that have been awarded on forest lands have not been planted following clearance. For example, in West Kalimantan, the regional administration has issued license to reserve 2 million ha of forest lands for oil palm plantations since 2002 but only 350,000 ha of those concessions have ultimately been planted, with the remainder left idle after the trees were felled.⁸² It is important that idle or cleared lands such as these are prioritised for any new plantations.

What did you tell us?

Regulators play an important role - "Central and local government need to clarify and harmonise spatial plans and the guidelines for land allocation."

Need for better and quicker services to identify and manage high conservation value areas (HCVA) - HCVA assessment can be a slow process in Borneo due to lack of assessors, and there is a need for better industry specific management guidance.

Cooperation for conservation - Wildlife corridors and conservation initiatives need to be planned at a landscape level requiring potentially complex multi-stakeholder cooperation.

Restricting HCVA access - HCVA are often in relatively remote areas; restricting access from small scale and illegal actors can cause conflict and be resource intensive.

Solutions and guidance

HCVA need to be identified prior to allocation of concessions and long before any clearance and planting. In situations where habitat is fragmented wildlife corridors connecting fragmented forests should be set up and maintained to allow migration and ensure population viability. WWF and RSPO guidelines firmly recommend that new palm oil plantations do not replace HCVA or any area required to maintain or enhance HCVA.

See: www.hcvnetwork.org for the latest tools and guidelines for HCVA identification and management.

See: www.wwf.or.id/berita_fakta/publications/?13160/Panduan-Identifikasi-Kawasan-Bernilai-Konservasi-Tinggi-di-Indonesia for Indonesia's HCVA toolkit

⁷⁹ Hooijer et al. 2006. Peat-CO2; CIFOR, 2009; The impacts and opportunities of oil palm in Southeast Asia. 2009. Paper no. 51.

⁸⁰ Status of Peat swamp forests in Malaysia, August 2009, Wetlands International

⁸¹ Impacts of increasing biofuel demands on carbon dioxide emissions from peatlands, Wetlands International; Decree details: Peraturan Menteri Pertanian nomor: 14/Permentan/PL.110/2/2009

⁸² Indonesian Commercial Newsletter, November 2009

What's the issue?

What did you tell us?

Solutions and guidance

Responsible Cultivation Areas

Just as there are areas of forest with high conservation values, there is also a lot of available land, particularly in Kalimantan, that has relatively low conservation value; usually because it has been heavily degraded by past activities and then abandoned. This land can in many cases be used to gain the economic and social benefits of palm oil plantation development without serious environmental trade-offs once land titles and tenure rights are clarified.

In the past, some plantation concessions that have been awarded on forest lands have not been planted following clearance. It is important that idle or cleared lands such as these are prioritised for any new palm oil plantations.

Regulators play an important role - "Central and local government need to clarify and harmonise spatial plans and the guidelines for land allocation".

Adequate compensation is needed - "If we are awarded a concession, what incentive is there for us not to use it?" - Suitable replacement plots should be provided where forest concessions are given up and support for relocation will be needed.

Better access - "Many of these areas have poor transport links, and it is more expensive to reach mills." - The attractiveness of existing plots of idle land for use as forestry plantations can be enhanced by providing improved infrastructure and access to markets.

The allocation of land is a government process which is why WWF are working hard with the government in Indonesia and Malaysia to support good land use planning which takes the value of standing forests into account.

1) Use of idle lands

Areas with low conservation value and idle land can provide ideal sites for new plantations if land title and tenure rights have been clarified.

As part of WWF's efforts to support the growth of the sustainable biofuels industry we supported Ecofys in the development of a tool to help identify areas which may be suitable for responsible plantation cultivation, including those which:

- Have low conservation values;
- Have low carbon storage;
- Have resolved any land tenure issues; and
- Have appropriate land use designations in the national and local spatial plans.

This was developed for energy crops and piloted in West Kalimantan. We aim to continue to develop this tool to make it relevant to other plantation crops as well as combining it with our HCVA tools to offer useful high level information on areas with high and low conservation value across landscapes important to WWF.

See: www.ecofys.com/com/publications/documents/EcofysRCAMethodologyv1.0.pdf

The World Agroforestry Centre (ICRAF) rapid tenure assessment tool also provides more information on how to assess land tenure issues in the siting of a plantation.

See: www.worldagroforestry.org/sea/projects/tulsea/inrmttools/RaTA

2) Land swaps

One new idea with a potentially high impact is to work with government and business to swap concessions from high value conservation areas to conservation value idle lands. If this proves acceptable to business, communities and government it has the potential to secure many hundreds of thousands of hectares of currently allocated forest lands, whilst maintaining the economic growth and opportunity associated with the palm oil industry. It is also possible that the significant carbon savings associated with these swaps could be converted into carbon credits and used to compensate communities and businesses for any costs associated with the swap.

WWF are currently involved in discussions to identify a pilot area and an implementation coalition soon, look out for news on our website.

3) See HCVA solution above for guidance on identifying and managing HCVA

What's the issue?

What did you tell us?

Solutions and guidance

Species Management Practices

Borneo is home to some of the world's most charismatic species, such as the pygmy elephant, orang-utan and rhino. There are 511 IUCN Red List threatened species in Borneo which are in danger of further decline without careful management.⁸³

The perceived conflict between the palm oil industry and some of Borneo's most charismatic species and has caused significant negative international publicity for the industry in Indonesia and Malaysia.

Animals can cause damage - Some of the animals found in Borneo can eat or trample young oil palms causing disruption to plantation activities and costing operators money.

Environmental and Social Sustainability - Consultations indicated that the rights of local communities should be the priority; WWF agrees that human well-being should be the top priority but also asserts that with good species management, humans and animals can coexist comfortably and both local communities and animal populations can benefit.

Multi-stakeholder process - Species conservation requires consideration at the landscape level which requires cooperation between landholders.

Toolkits and training are available for companies who have important species in and around their palm oil plantations. These solutions can help to reduce the impact of plantations on key species as well as avoiding animal conflict which can be costly for plantation owners; for example, by outlining measures to reduce the likelihood that large animals cause damage to plantations.

See for example: www.rspo.org/files/resource_centre/HEC%20BMP%20guide%20v1.0%2020050729.pdf for guidance on managing human-elephant conflict around palm oil plantations.

http://rafflesia.wwf.or.id/library/admin/attachment/books/OU_BMT_report.pdf for guidance on managing human-orangutan conflict around palm oil plantations.

wwf.panda.org/borneo/greenbusinessnetwork for links to further specific species management resources.

The case study below shows how PPB Oil Palms Berhad (PPBOP) has successfully established a wildlife corridor. These are effective practices to link fragmented habitat and provide a channel for wildlife migration.

CASE STUDY - PPB OIL PALMS BERHAD UNDERTAKES RIPARIAN MANAGEMENT PROJECT

The Issue

The Segama river flows through PPB Oil Palms Berhad's (PPBOP) RSPO certified Sabahmas plantation in Lahad Datu. The river and its riparian areas provide important habitat for more than 150 proboscis monkeys, an endemic species. The river also supports several downstream communities.

The Response

In recognition of the importance of riparian areas, PPBOP is investing RM3 million to initiate a five-year riparian management project in collaboration with the Sabah Forestry Department. The legal buffer zone is 20 meters, and as part of their sustainability commitment PPBOP is extending this by an additional 30 meters. To this end, they are planting 150,000 trees along a 47 km stretch of the riparian zone covering a total of 382 hectares and providing a corridor for wildlife to the Tabin Forest Reserve.

The Results

The additional habitat linking the riverine areas and the reserve are expected to benefit the proboscis monkeys and other wildlife living in the adjacent area. It is also hoped that it will provide research insights into riparian rehabilitation in the tropics.

⁸³ www.iucn.com

What's the issue?

What did you tell us?

Solutions and guidance

RSPO Certification

Many palm oil companies want to run their businesses responsibly and in balance with communities and the environment. The RSPO has worked with the industry, together with social and environmental NGOs, to develop a set of principles and criteria which companies can use to ensure they strike that balance and can demonstrate it to their investors and customers.

Smaller producers are disadvantaged - Respondents from smaller upstream-only operators suggested that any price premiums from the sale of certified production were captured by downstream traders and not passed on to local producers.

Technical capacity - "Large companies have greater resources to devote to changing practices, smaller producers are disadvantaged."

More support needed for companies committed to making progress - "Our company experienced increased NGO targeting since pursuing RSPO certification."

Certification to the RSPO indicates that a palm oil producer is addressing the major environmental challenges associated with production. See solution box on 'Driving demand for sustainable palm oil' below for more information on the increasingly strong demand for RSPO certification from palm oil buyers.

Examples of RSPO guidance:

- To address issues relating to land and watershed degradation RSPO advises that companies avoid cultivation on highly erodible land, including steep slopes, riverbanks and peat lands; these should be identified during the environmental impact assessment.
- The use of fire to clear land should always be avoided.
- Recommended management practices that maintain or improve soil fertility and thus ensure the continuing productivity of plantations include; land terracing, cover crops, road maintenance, and soil integrity monitoring.
- Chemical use can be reduced through the use of organic alternatives, such as kernels and other waste by-products, and integrated pest management can reduce pesticide use.
- Treatment ponds and vegetative buffers can be employed to reduce run-off and watercourse pollution and optimal irrigation timing and drip-irrigation in nurseries helps to minimise water usage.
- Potential social conflict on community or indigenous lands need to be identified and the Free Prior and Informed consent of those groups given prior to concession allocation. Plantations should only be permitted if producers have legal ownership or use rights, and where this is not contested by local communities with demonstrable claims.

See: www.rspo.org for more information on RSPO.

WWFs team of palm oil experts on the ground in Borneo can also offer advice and support, please contact us via email: borneo.gbn@wwf.panda.org

Other organisations offering support to companies wanting to achieve RSPO certification include:

- The Forest Trust (TFT): Adapting knowledge of forest management and supply chain expertise, TFT is working to bring positive change to the palm oil industry. Present in plantations and mills, TFT staff bring technical support to improve management practices and standards to meet buyer's responsible purchasing guidelines and meet RSPO standards. See: www.tft-forests.org/product-groups/page.asp?p=6277
- Pro Forest and Wild Asia: ProForest and Wild Asia's Stepwise Support Programme (SSP) is one of the first global support programmes specifically designed for the oil palm sector. ProForest and Wild Asia both share the common goal of promoting sustainability in agriculture through a combination of training, policy development, field assessments and supply chain audits. See: www.wildasia.org/main.cfm/stepwise

What's the issue?

What did you tell us?

Solutions and guidance

Improving Smallholder Productivity

Smallholders represent a significant portion of palm oil production in Borneo, for example they manage up to 25% of the planted area in Kalimantan⁸⁴. However, smallholders generally have a lower productivity, often due to lower quality seeds and less efficient production practices. The Indonesian Palm Oil Commission estimates that smallholder productivity is about 2.5 tonnes per ha, compared with 4.1 tonnes per ha on large private plantations. Increasing the productivity of smallholders would not only provide rural communities with a greater income, but it would reduce the pressure to further increase planted area.

Smallholders are disadvantaged – “It is hard for smallholders to gain certification, but we need technical assistance to improve our productivity.”

The RSPO has a task force dedicated to promoting the interests of smallholders in the RSPO process. Efforts are being made to produce standards and procedures to allow smallholders to get certified, and to raise awareness amongst smallholders as to the potential benefits of RSPO. A ‘Protocol for Group Certification’ is also under development so a number of smallholders can work together towards certification, improving the efficiency of the process for all concerned.

See: www.rspo.org for more information on this programme.

WWF is also beginning to work with smallholders in Indonesia to help them obtain RSPO certification, see our website for more details.

Other efforts to support smallholders include:

- Wild Asia is working to build practical and workable models to promote sustainable oil palm production for small plantation businesses and smallholders. Through training workshops and advisory support, the project aims to create a support model for small businesses and smallholders that are influenced by RSPO mills that operate within their vicinity.
- The Princes Rainforest Project recently released a report suggesting that smallholder productivity improvements could be linked to payments for Reduced Emissions from Deforestation and Degradation (REDD+): www.rainforestsos.org/wp-content/uploads/pdfs/REDD-and-Agriculture-Proposed-Solutions-from-Private-Sector.pdf

⁸⁴ BPS Kalimantan Tengah Dalam Angka 2009

Responsible Finance

What's the issue?

Palm oil companies must answer to their investors and other financiers to demonstrate that funds are being put to good use and that their activities will not expose financiers to undue risks or unwanted attention from activists and the media. Many of the environmental issues potentially caused by oil palm plantations can be avoided through the application of best management practices (some of which are outlined in the solution boxes above) and we understand that investors can provide an important source of encouragement to implement these best practices.

What did you tell us?

Incentive to act for larger producers – Larger producers seeking investment, particularly from international banks and investors find responsible lending criteria to be an important incentive to act; 25% noted access to finance an important motivation for sustainability.

Local lenders less concerned – Smaller business investors and lenders are often less concerned about sustainability and smaller operators have less exposure to different forms of finance so financing criteria do not provide a strong incentive.

Solutions and guidance

Sustainable Finance Handbooks:

A number of major banks have joined the RSPO; these include International Finance Corporation, Rabobank, Standard Chartered Bank, WestLB AG, Credit Suisse, ANZ Banking Group, and HSBC. Members are required to abide by the RSPO Code of Conduct and direct their investment accordingly.

WWF has produced a practical handbook to help financial institutions develop and implement a responsible palm oil financing and investment policy: http://assets.panda.org/downloads/the_palmoil_financing_handbook.pdf

The World Business Council for Sustainable Development and PricewaterhouseCoopers developed a toolkit to inform the responsible financing of activities which impact on forests: www.pwc.co.uk/pdf/forest_finance_toolkit.pdf

What's the issue?

New Financial Incentives

Forests provide society with valuable ecosystem services; however, often governments and private companies often do not take these values into account when allocating concessions and making decisions to clear forests for plantations and this can result in a net loss in value to society. New types of financial incentive are being developed to help private actors to take these public values into account and these could provide palm oil companies with a supplementary revenue streams to support sustainable activities. Many of these ideas are under development, but there is considerable momentum within the field and good prospects of growth.

For example, the carbon markets currently provide payments for reduced carbon emissions through the Clean Development Mechanism (CDM) of the EU Emissions Trading Scheme. In addition, a new mechanism is being developed to provide payments for Reducing Emissions from Deforestation and forest Degradation (REDD+) and this may well provide revenue opportunities for palm oil companies if they can demonstrate (in accordance with methodologies that are being developed) that they are helping to create verifiable emissions reductions.

What did you tell us?

Financial incentives – NGOs and governments need to help producers learn about the new financial incentives available and how to take advantage of them.

“If my company is protecting a ‘public good’ we need to know how we can be rewarded or compensated for this.”

Solutions and guidance

WWF is working with the three HoB governments to help them to understand the value of the HoB forests and also how to sustainably finance the delivery of the HoB Declaration. In October 2010 the three governments launched a sustainable financing assessment for the HoB. This outlines finance sources which are available to support companies, governments and communities to meet the HoB Declaration, see our website for more details.

There are tangible advantages available from new financial incentives for palm oil producers. For example, a large palm oil producer in Sabah is working to develop a CDM project at one of their palm oil mills.⁸⁵ The project hopes to avoid the equivalent of 130,000 tonnes of carbon emissions over 7 years through wastewater treatment and biogas generation, at current carbon prices this would be worth more than USD 2 million⁸⁶.

WWF has a number of initiatives underway to help producers, investors and regulators access new financial incentives. WWF US is also a partner in The Natural Capital Project – this project has developed a tool called INVEST (Integrated Valuation of Ecosystem Services and Trade-offs), a tool which helps to map and value the services provided by nature. We are working with the three HoB governments to use this tool in the HoB. Its outputs will be of interest to government policy makers and companies alike.

For more information see: wwf.panda.org/borneo/greenbusinessnetwork

The Princes Rainforest Project also recently released two reports on how the palm oil sector could benefit from REDD+ credits in future through either swapping concessions granted on idle lands or through productivity gains. These proposals are at an early stage of but may provide interesting alternative revenue opportunities for palm oil companies in future.

www.rainforestsos.org/wp-content/uploads/pdfs/REDD-and-Agriculture-Proposed-Solutions-from-Private-Sector.pdf

⁸⁵ UNFCCC (CDM-SSC-PDD)

⁸⁶ 26/11/2010: CER price Euro 12.26 (Bluenext.eu) = circa USD 16 * 130.000 CERs = USD 2.08 million (un-discounted)

What's the issue?

Driving Demand for Sustainable Palm Oil

RSPO certification addresses many of the concerns raised by consumers regarding the potential impacts of palm oil production on the environment. However, producers do face costs in achieving RSPO certification and need to be compensated with price premiums to encourage continued expansion of RSPO. Producers have indicated that price premiums are currently small and limited to specific markets and it is therefore important that demand for RSPO certified palm oil continues to increase at least in line with increases in supply. Demand for sustainable palm oil is increasing rapidly, and the RSPO has predicted that demand may reach 30 million tonnes by 2019 (Figure 3.9).

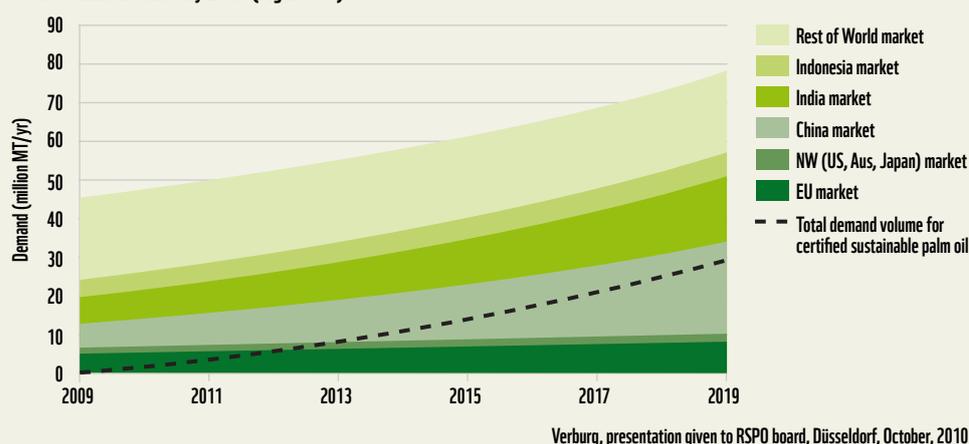


FIGURE 3.9: PREDICTED DEMAND FOR PALM OIL, AND PROPORTION OF DEMAND FOR CERTIFIED PALM OIL.

This predicted increase is based in part on the firm commitments of numerous major companies and retailers to exclusively source sustainable palm oil; for example, Walmart has committed to only use RSPO certified palm oil in Walmart branded products by 2015 and similar commitments have been made by Nestle, Proctor & Gamble, Unilever, and Kraft to name a few. In addition, the Netherlands, Europe's largest importer and exporter of palm oil (about 2 million tonnes annually), is the first country to commit to only sourcing from certified producers for its national industries by 2015.⁸⁷ While American and European markets are increasingly demanding sustainably sourced palm oil, markets in the rest of the world, particularly Asia, have to date been less concerned with the provenance of supply. Given the dominance of Asia in driving increased palm oil production, spreading awareness and demand for sustainable products in these markets will be an important challenge.

What did you tell us?

Greater incentives required - "Changing management practices and incorporating sustainability factors is expensive."
"The European market is small relative to the Asian market and certified palm oil isn't priced much higher anyway."

Solutions and guidance

RSPO certification is an increasing requirement of major international brands, retailers and financiers, including all those signed up as RSPO members. WWF advises palm oil buyers to source 100% RSPO certified and is working hard to ensure that demand for RSPO palm oil continues to strengthen.

- **Buyer scorecard:** Consumer pressure in Europe and America is driving the uptake of sustainable products by retailers. In 2009 WWF published a scorecard of retailers and brands in Europe who were buying RSPO certified oil, this scorecard aimed to recognise and reward the good performers as well as encouraging others to follow their lead. The market showed a sharp increase in demand in the month following the launch of this scorecard.
- **Working with Asian markets:** WWF know that more needs to be done to encourage the Chinese and Indian markets to buy sustainable oils and WWF now have active programmes to do just that in both countries. To find out more about progress visit our website.
- **Company Partnerships:** Across the world WWF's 'Market Transformation Initiative' aims to work with the top 100 most influential brands and retailers whose buyers have significant concentrated power to influence many thousands of supply chains and individual producers. We are forming partnerships in many countries with leading companies who are willing to go beyond minimum standards and develop and implement best practice on sustainable commodity sourcing. For example our partnership with UK retailer, Marks & Spencer, led to that company implementing a 100% sustainable palm oil sourcing policy. We have also been engaged by Walmart, the world's largest retailer, who recently launched a commitment to source 100% sustainable palm oil for their own brand products by 2015.

For further information on these programmes as well as information for palm oil buyers see: wwf.panda.org/what_we_do/footprint/agriculture/palm_oil/solutions/responsible_purchasing/

⁸⁷ Manifesto of the Task Force Sustainable Palm Oil, Netherlands, 2010

The business case for sustainable palm oil in Borneo

The economic case for reducing deforestation and improving environmental practices is increasingly being recognised at national and international levels based on the value which intact ecosystems deliver to society.

At the level of an individual company the business case for sustainable practices can be more complex. A range of challenges, often linked to cost and technical capacity, have been identified by producers and these are addressed in the preceding sections. Notwithstanding these challenges, the business benefits of improving environmental practices are increasingly recognised by some palm oil producers in Borneo.

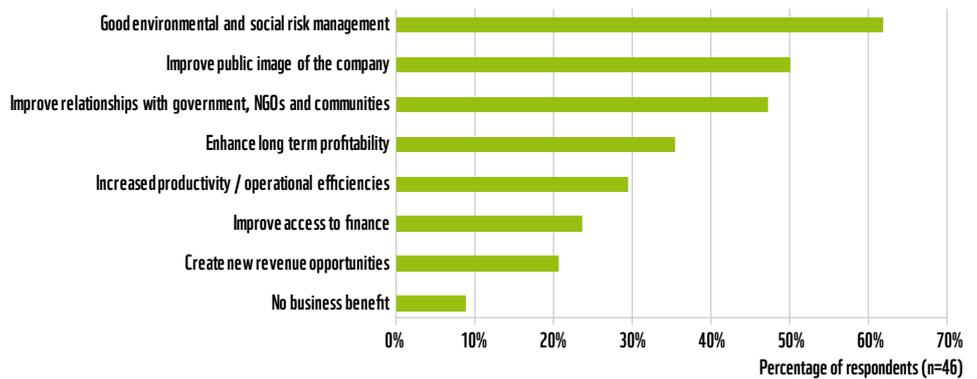


FIGURE 3. 10: BENEFITS OF GOOD ENVIRONMENTAL AND SOCIAL PRACTICES AS REPORTED BY PALM OIL PRODUCERS IN BORNEO

Figure 3. 10 is based on interviews and surveys with 46 respondents from palm oil companies operating across all the states of Borneo. 62% of this group identified good environmental and social risk management as a benefit of sustainability activities while 50% thought their company would benefit from an improved public image. More than a third (35%) of respondents thought that sustainability activities would improve their profitability in the long term and 29% cited increased productivity or other operational efficiencies as a reason to pursue sustainable practices.

Furthermore, as indicated in the solution boxes on previous pages; from increasing demand for RSPO certified palm oil and new international funds for avoided deforestation; to heightened enforcement of existing regulation and new financing requirements from lenders; many factors are coming together to strengthen the business case for sustainable palm oil in Borneo.

The first section of this chapter principally focuses on coal mining, analysing production, consumption and export trends alongside major recent developments and the potential implications of these for the HoB. The focus is on coal because this is the largest mining sub-sector in Borneo and continues to show significant growth, with important implications for both the HoB and the global climate. Trends and developments in other sub-sectors are also briefly covered. The second part of the chapter extends this analysis to look specifically at the environmental and social impacts associated with mining, and considers some of the challenges and solutions in relation to adopting more sustainable practices. The final section draws on the results of our engagement with mining companies to summarise the business case for



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**CLEAR REGULATIONS
AND RESPONSIBLE
MINING WILL HELP
MAINTAIN THE
NATURAL CAPITAL
OF THE HOB**

”

CHAPTER 4

BUSINESS SOLUTIONS FOR RESPONSIBLE MINING IN BORNEO



Summary

- The Indonesian and Malaysian governments are both considering increasing their mining production from deposits in Borneo, particularly that of coal. There are more than 1,100,000 ha of coal concessions within the HoB, of these most, 980,000 ha, are in the research or exploration phase, indicating the potential future growth, and impact, of the industry in the HoB.
- WWF believes that due to the high carbon emissions from coal, its use as an energy source should be significantly reduced over time. However, in the short term WWF recognises that coal will remain an important and relatively low cost source of energy for developing countries.
- Illegal coal and gold mining has significant social and environmental impacts, along with economic consequences for governments and legitimate activities. National and regional governments need to continue to tackle illegal mining, while seeking to provide alternative livelihoods for the many rural poor who are involved.

Recommendations

- Clear regulation and effective enforcement is needed across the region. For example, ensuring that the regulatory requirement for Environmental Impact Assessments and reclamation of land are consistently enforced.
- Heightened efforts are needed to control illegal mining. A specific example is the need to reduce mercury use by illegal gold miners and protect them from the adverse health effects.
- Mining companies should identify high conservation value forests before commencing mining operations and ensure an adequate management plan is put in place to protect the value of the area during mining operations and after they are completed.
- Mine rehabilitation needs to be planned logistically and financially well in advance of the commencement of mining operations.

More information can be found in the solutions sections:

Activities	Solutions	Page
Locating and planning	High Conservation Value Forest	72
	Environmental Impact Assessments	74
Managing	Mercury Use	75
	Mine Rehabilitation	76
Financing	Responsible Finance	77
	New Financial Incentives	78

Introduction

Mining has made an important contribution to the economic development of Borneo, providing export revenue, jobs, and resources for power generation. However, the environmental impacts of mining have also been severe and there is a growing recognition that continued economic development in Borneo will be contingent on significant improvements in the environmental and social practices of companies and individuals operating there. Furthermore, much of the mining in Borneo is for coal; burning coal is a significant contributor to climate change which is adding to environmental and social pressures in Borneo and around the world.

Mining in Borneo has been carried out by traditional miners since the eighteenth century. Large scale commercial mining took off following geological surveys by the Dutch in the first half of the twentieth century and has since grown rapidly. In recent years, both the Malaysian and Indonesian governments have expressed interest in further expanding large-scale commercial coal production in Borneo. The challenge for the governments' vision for conservation and sustainable use enshrined in the HoB Declaration is therefore to ensure that as producers turn their attention to deposits within the HoB, careful spatial planning is conducted, and good regulations are developed and / or are rigorously and consistently enforced.

In many ways however, small scale miners pose a greater challenge for regulators than larger operators because their activities are more numerous and they are often dispersed throughout inaccessible areas. Steps need to be taken to ensure that the access and activities of small scale, as well as illegal miners, are effectively controlled.

The Coal mining sector in Borneo

Production

Annual coal production in Indonesia has grown rapidly in the last decade to over 250 million tonnes. This figure is currently forecast to continue to grow by 4-6% per annum, reaching 316 million tonnes in 2014.⁸⁸ Much of this growth is expected to come from Kalimantan, which holds 53% of Indonesia's 4,300 million tonnes of recoverable coal reserves.⁸⁹ Some of these reserves are within the HoB, indeed there are already signs of activity; there are more than 1,100,000 ha of coal concessions within the HoB, of these most, 980,000 ha, are still in the research or exploration phase.⁹⁰ This provides some indication of the potential growth of the industry, and its future role managing lands within the HoB in Indonesia. However, this does not include the illegal mining activity, which is also significant.

The Malaysian coal industry is almost wholly based in Sarawak. In contrast to Indonesia, it is relatively undeveloped producing a little over 1 million tonnes per annum which supplies 6 power plants.⁹¹ However, the Department of Minerals and Geology estimates that Malaysia holds reserves of 1,724 billion tonnes with the vast majority of these in Sarawak (80%) and Sabah (19%).⁹² Some of these reserves are located in environmentally sensitive areas inside the HoB, for example the Maliau Basin (nominated to become a World Heritage Site) and Danum Valley forest reserves in Sabah are both thought to sit above significant deposits.

Brunei also has considerable coal deposits, but since the closure of Brooketon Colliery in 1924 it has no active mines. There are no public plans to develop Brunei's coal resources although some exploration is taking place in order to update estimates of known reserves. The country has rich oil and gas resources from which it generates all of its electricity and it is actively exploring new reserves to maintain this supply.

⁸⁸ Business Monitor International, Indonesia Mining report Q3, 2010

⁸⁹ Innovation Energy Environment, 2010

⁹⁰ Indonesian Ministry of Energy and Mineral Resources, 2008.

⁹¹ Malaysian Mining Industry Report 2008

⁹² Mineral and Geosciences Department, Malaysia, 2010

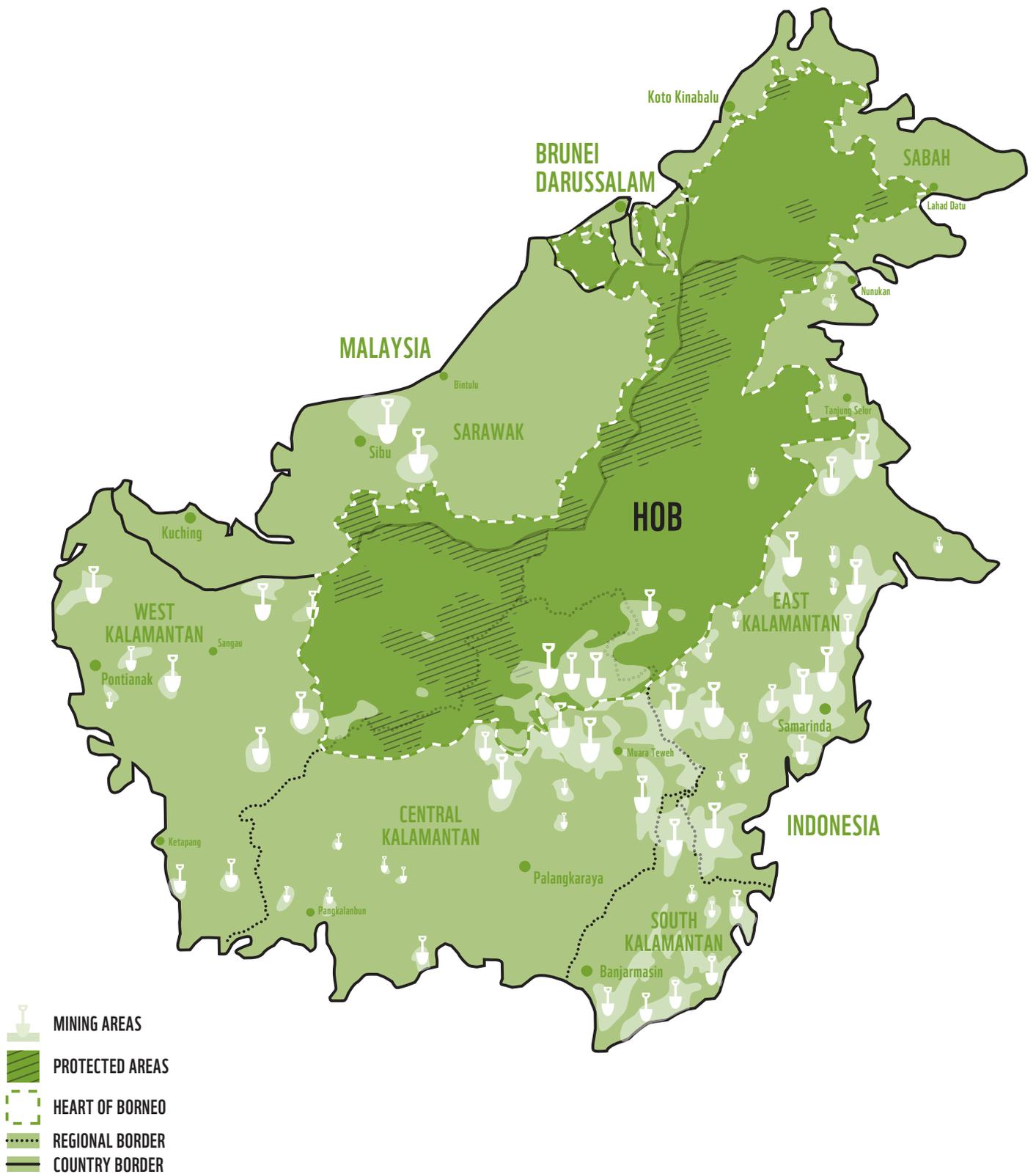
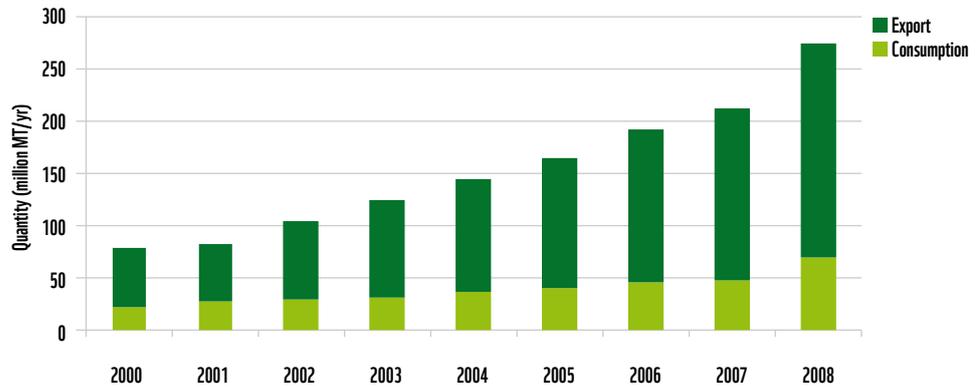


FIGURE 4.1: ILLUSTRATIVE MAP OF MINING CONCESSIONS IN KALIMANTAN, MINES IN SARAWAK

NB: This map provides an illustrative estimate of the location and size of concessions based on publically available information; it is not intended to be a precise representation.

Consumption and Export

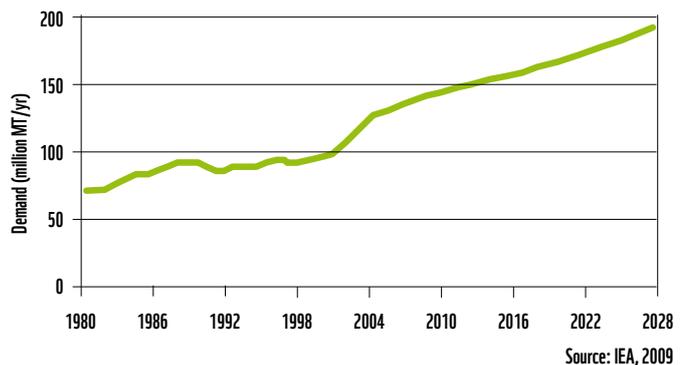
About 20% of Indonesian coal production is used domestically, principally to generate electricity, but also directly by industry. The Indonesian National Energy Policy states that it plans to see coal represent 33% of the energy mix in 2025⁹³, up from 17.1% in 2006,⁹⁴ and about 25% today.



Source: World Coal, 2009

FIGURE 4.2: INDONESIA THERMAL COAL CONSUMPTION AND EXPORT

Indonesia exports large quantities of coal to Japan, Taiwan, India and South Korea; indeed Asia represents 78% of sales.⁹⁵ Consumption in many western countries is predicted to decline, partly due to the external costs associated with carbon emissions and climate change. However, as Figure 4.3 shows, the International Energy Agency (IEA) prediction sees continuing growth in world demand, largely driven by developing countries, particularly India and China. WWF believes that due to the high carbon emissions from coal, its use as an energy source needs to be significantly reduced over time. However, in the short term WWF recognises that coal will remain an important and relatively low cost source of energy for developing countries. The 'WWF Energy Vision' does in fact acknowledge that coal usage will increase in the global energy supply to 2020, before declining as other renewable technologies are developed as cost effective alternatives.



Source: IEA, 2009

FIGURE 4.3: WORLD COAL DEMAND FORECAST (BUSINESS AS USUAL SCENARIO)

Coal exports are an important source of foreign exchange for Indonesia, generating revenues of USD 7.7 billion in the first 4 months of 2010 alone.⁹⁶ The industry has also been an important contributor to economic growth, representing 4.5% of national GDP in 2009. In Kalimantan coal represents more than 7% of the local GDP⁹⁷.

⁹³ Along with 30% natural gas, 20% oil, 2% coal liquefaction, 5% renewable energy, and 5% geothermal.

⁹⁴ Presidential decree no. 5 Tahun, 2006

⁹⁵ Handbook of energy and economic statistics of Indonesia, 2009

⁹⁶ <http://theindonesiatoday.com/stock-headline/1292.html>

⁹⁷ BPS Kalimantan Tengah Dalam Angka, 2009

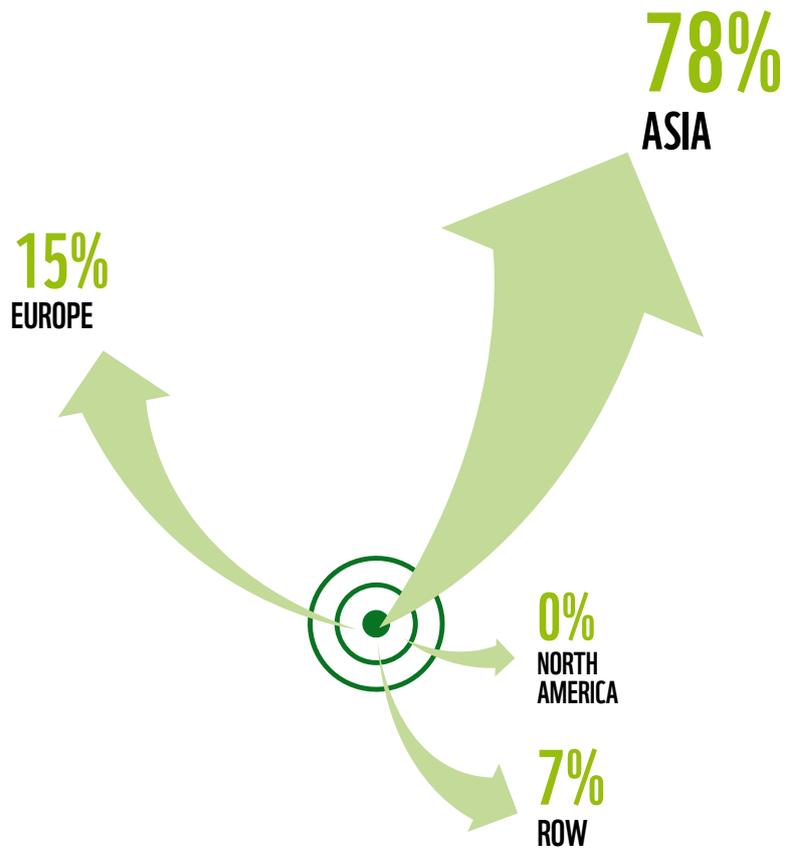
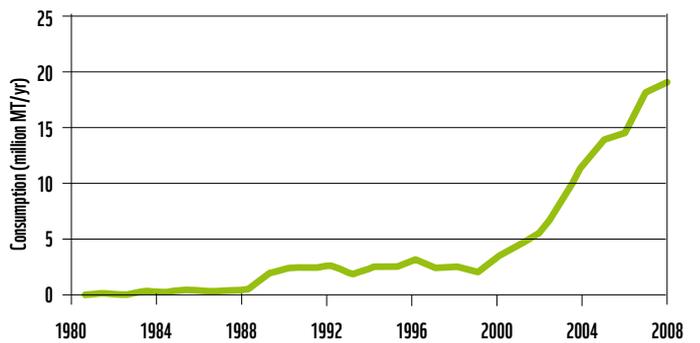


FIGURE 4.4: EXPORT DESTINATIONS FOR COAL FROM INDONESIA AND MALAYSIA

Malaysia's national consumption has undergone a rapid increase over the last decade, driven largely by increases in the proportion of coal in the fuel mix, which has replaced more expensive natural gas, and is now up to nearly 40%.⁹⁸ Given Malaysia's current low domestic production, this is sustained by imports, principally from Indonesia, Australia, and China. These imports have a significant cost of more than USD 1.6 billion per annum.⁹⁹



Source: TitiTudorancea.com, 2010

FIGURE 4.5: MALAYSIAN COAL CONSUMPTION

⁹⁸ COGEN3, Malaysian National Energy Review, 2003.

⁹⁹ <http://malaysianminerals.com/minerals-statistics.html>

Production Developments

Potential for relatively low cost energy generation, increased export revenues in Indonesia, and reduced import costs in Malaysia, are motivating both governments to seek greater exploitation of their deposits in Borneo.

In Kalimantan there are plans for the development of a 1,461 km Integrated Coal Transportation System connecting the main areas along East and South Kalimantan's coast for increased coal export; Sanggata, Mahakam, South Balikpapan, Mangkupadi and Batu. Proposals include 7 new or expanded port terminals, providing significantly greater export capacity. Some of this is financed by international private investors hoping to guarantee a portion of future exports. For example the India based Middle East Coal Company intends to invest USD1.4 billion in East Kalimantan, including part of the rail line and a port capable of receiving capesize vessels.¹⁰⁰ To ensure that there is adequate reasonably priced coal for domestic consumption the New Mining Law No 4/2009 requires all companies to sell at least a quarter of their production to domestic users.

An emerging development in Indonesia's coal industry is the exploitation of coal bed methane. Indonesia is thought to hold 450 trillion cubic feet of coal bed methane resources. The first extraction of some of this is being led by VICO (jointly owned by BP and ENI) in East Kalimantan. Production is expected to start in 2011 from their Sanga-Sanga block, from which traditional gas extraction has been carried out for 40 years. Coal bed methane is often released during coal extraction, resulting in significant greenhouse gas emissions. However, it can also be an additional source of combustible fuel, and its further use could provide a potential route to reduce the carbon intensity of energy production in Indonesia.

The Tenth Malaysian Plan sets out plans for increased exploitation of coal resources in Sabah and Sarawak. These developments intend to reduce the cost of coal imports and increase regional energy security. The plans include the construction of two new coal power plants, one in Lahad Datu, Sabah, and one in Peninsula Malaysia, together with the associated mining infrastructure to meet their capacity. However, the Sabah plant has received significant media and NGO attention calling for the project to be abandoned.¹⁰¹ Challenge has also come from the Ministry of the Environment, who rejected the initial Environmental Impact Assessment based on its failure to address a number of environmental sensitivities in the area.¹⁰² In addition, the Sabah State Government has committed to conserving the Maliau Basin assigning it Class 1 Protection as Heritage Conservation under the Cultural Heritage Conservation Enactment 1977, such that future coal extraction of reserve in this area would require legislative approval.

Amongst the mining sub-sectors, coal mining has the most significant potential to impact on lands within the HoB. Both the Malaysian and Indonesian governments have well developed plans to increase their coal production from Borneo and these proposals will need to be carefully evaluated for their compatibility with parallel objectives to conserve and sustainably manage the HoB and increase the contribution of other sectors such as eco-tourism. For producers, a number of measures can be taken to reduce any negative impacts and these are outlined in the second half of this chapter.

Other Mining in Borneo

Gold

In 2007, reported Malaysian gold production was 3,497 kg¹⁰³, but there was no large scale commercial gold production in Sabah or Sarawak.¹⁰⁴ The Department of Minerals and Geoscience has, however, acknowledged the potential, particularly in Bau, south-west Sarawak, where small-scale miners have been operating since the nineteenth century.

Small-scale gold mining in Kalimantan is more widespread than in Sabah and Sarawak, particularly because alluvial deposits are more common. Small scale gold mining operations often operate without a licence and use illegal techniques, such as the use of mercury to extract gold. Mercury is a highly poisonous metal which is persistent in the food chain; the contamination of watercourses results in significant social and health impacts, as well as causing environmental damage.

¹⁰⁰ Business Monitor International, Indonesia Mining report Q3 2010

¹⁰¹ For example the Green SURF coalition launched a petition, run by Land Empowerment Animals and People, Partners of Community Organisations, Sabah Environmental Protection Association, the Malaysian Nature Society Sabah Branch, and the Sabah office of WWF-Malaysia.

¹⁰² Sabah Chief Minister Datuk Musa Aman as cited in The Star, 2nd April 2008 said "after careful consideration, we just cannot take the risk and destroy the environment that is intact. We need to look for more environmentally-friendly sources of energy."

¹⁰³ A decrease of almost 20%

¹⁰⁴ Mineral and geosciences department, Malaysia, 2010



FIGURE 4.6. PANNING FOR GOLD IN A BORNEO RIVER

Large scale gold mining in Kalimantan, on the other hand, has been in decline, most notably since the closure of Rio Tinto's Kelian gold and silver mine in East Kalimantan in 2003, which had produced almost 15 tonnes of gold and silver per year. There remains interest however in the potential for future production. For example, the village of Muara Asa in East Kalimantan is reported to hold total gold ore deposits of 300 million tonnes, yielding 400 mg of gold per tonne of ore. In addition, Waringin, Central Kalimantan, is estimated to hold over 140 million tonnes of ore.¹⁰⁵

Gold deposits often coincide with copper and future investment is being made on this basis; the Kalimantan Gold Corporation announced in late 2009 that it will issue additional shares to finance continuing exploration of copper and gold deposits in the south east of the HoB in Central Kalimantan, as well as outside the HoB boundary, near Malinau, in East Kalimantan¹⁰⁶.

While the historical impacts of large scale gold mining in Borneo appear to have been relatively limited, new exploration in Kalimantan, interest in Sarawak, and on-going illegal activity, coupled with current record gold prices, point towards an increasing threat for the HoB. The authorities will need to be mindful of potential negative impacts of gold mining from both existing small scale and new large scale operations. The second half of this chapter outlines a number of solutions to environmental and social impacts which are relevant for private operators.

Diamonds

Mining for diamonds is carried out in Kalimantan and Sarawak, principally by small scale alluvial miners. Reports suggest that while some of these have permits, many are illegal. There is also a major diamond mine in South Kalimantan, owned by PT Galuh Cempaka. According to the company website, it is estimated to hold 2.6 million carats within a 44.3 million cubic meter gravel bank. The presence of diamond deposits in Borneo presents some risks for the HoB, but a present there do not appear to be significant plans to develop these at scale. Authorities may wish to focus on regulating small scale activity. For prospective producers a number of the solutions outlined in the second half of this chapter will also be highly relevant.

¹⁰⁵ Business Monitor International, Indonesia Mining report Q3 2010

¹⁰⁶ <http://www.kalimantan.com/i/pdf/KLG-Admission-Doc.pdf>

Regulating Mining

Effective regulation and enforcement is a critical part of mining operations. Regulations help ensure operations are carried out in a manner which reduces the risk of undue negative impacts to third parties. In doing so, regulations help maximise the economic benefits of an operation without compromising or sacrificing the economic, environmental, and social needs of others.

Regulations in Borneo, and in particular in the HoB, need to guide companies to implement more environmentally and socially sustainable practices to avoid these potential adverse consequences.

To maximise compliance, regulations need to be clear and enforced. One of the challenges indicated by companies through consultations were issues related to unclear or conflicting regional regulations. Decentralisation in Indonesia has given regional government the responsibility to set and maintain regulations, but these efforts must still be coordinated.

For the regulators, the challenge is often greatest in monitoring the operations of small scale miners. These are less conspicuous than large scale mining and their operations are generally more numerous and isolated. Moreover, the Indonesian Mining Authority predicts that uncertainties in long term tenure introduced by the New Mining Law will proliferate small scale mining, as international actors are deterred. It is essential that regulators anticipate the required institutional developments to adequately regulate these actors.

Of particular concern are illegal mines. Illegal mines are those which operate without a licence, and often use inefficient and polluting techniques with little regard for health, safety, and the environment. Most illegal miners operate at a small scale, however there are some much larger scale operations which avoid enforcement. One illegal coal mining operation is reported to have 16 excavators and 200 trucks at their disposal. Accurate figures are difficult to gauge but illegal miners were thought to account for more than 5% of coal production in South Kalimantan¹⁰⁷ in the year 2000, and across Kalimantan and Sumatra illegal coal production is thought to be in the region of 20 million tonnes per year¹⁰⁸ today. These miners degrade concessions before commercial operations begin, resulting in lost private returns and considerable lost government revenue. National and regional governments can do more to control informal decision making and ensure that regulatory enforcement applies to all mining operations.

Tracking the origin of mining products is challenging, and stemming the illegal mining trade is hindered by high and diffuse domestic and international demand. The ease with which illegal miners can find a market for their goods despite the poor environmental and social practices under which they were produced means there is currently little incentive to improve operations. This makes it all the more important that governments work to reduce illegal mining and enforce regulations.

¹⁰⁷ Indonesia: Facing the Challenge, Australian Government, 2000

¹⁰⁸ Lucarelli, 2010, The history and future of Indonesia's coal industry: impact of politics and regulatory framework on industry structure and performance, Stanford Program on Energy and Sustainable Development.

ENVIRONMENTAL AND SOCIAL CHALLENGES AND SOLUTIONS

Government ambition to increase coal mining in Borneo demands that ever more careful attention be paid to environmental and social concerns, especially given the presence of concessions and exploration inside the HoB.

Without clear government guidance and strong regulatory enforcement there is a significant risk that measures will be insufficient to maintain the value of the HoB forests and the quality of the environment to ensure the wellbeing of local communities.

Table 4.1 outlines some of the key potential environmental issues which can arise from poor management of mining activities.

Habitat loss	Open cast mining is land intensive necessitating the removal of large areas of terrestrial habitat and the loss of associated ecosystem value. There are also often secondary impacts which lead to habitat loss associated with both open cast and underground mining activities. These include direct habitat removal and habitat fragmentation for construction of access roads or rail infrastructure. Although not a direct removal of habitat, increased noise, vibration and dust associated with mining activities can create an adverse impact on habitats adjacent to the development site.
Land removal and soil degradation	Large volumes of soil and overburden are extracted and processed in mining operations, and these can generate contaminated tailings as by-products. This can result in soil degradation, erosion and contamination, and also generate 'geohazards' such as subsidence and landslides. This reduces land productivity and value, and can also lead to safety risks for local communities.
Degradation of watercourses	Mine effluent can adversely affect water quality by increasing sedimentation in local watercourses and introducing contaminants. Even low levels of mercury and cyanide (used in gold processing) are toxic to most forms of wildlife and humans. Tailings can form acids through oxidation which leach into the groundwater and enter watercourses. The disposal of untreated waste and process effluents in shallow marine environments can be especially problematic for coastal ecosystems and the fisheries they support.
Social conflict, health, and displacement	Mining operations (both legal and illegal) attract large influxes of workers and associated temporary settlements and informal economies. This can encourage the spread of communicable diseases (e.g. HIV-AIDS) and diseases which thrive in poor quality worker living quarters which can also spread to local communities. There is often high workforce turnover, caused in part by adverse health effects of mercury and cyanide where these are used. Mining activities can in some cases displace both indigenous and local communities, resulting in conflicts with mining companies over security and land rights.

TABLE 4.1: POTENTIAL ENVIRONMENTAL ISSUES DUE TO POOR MANAGEMENT OF MINING ACTIVITIES

As part of or alongside responses to regulatory drivers, there are a series of practical actions which mining companies can take in order to reduce any environmental and social impacts they may have. The following boxes respond to the issues above, taking note of challenges raised in consultations and propose a range of practical solutions.

What's the issue?

High Conservation Value Forest

Forests are valuable for many reasons: regulating water flow, preventing floods and land slides, storing carbon and providing habitat for endangered species. Clearance of high conservation value forest (HCVF) results in reduced habitat and the loss of 80-90% of species.¹⁰⁹ Orang-utan habitat, for example, declined 39% between 1992 and 2002.¹¹⁰ If areas valuable for conservation are not identified and mining activities avoided in and adjacent to HCVF the lost forest value might outweigh the benefits from mining.

What did you tell us?

Mining less land intensive – “Mining operations have lower land requirements than palm oil or forestry and so is HCVF such an important issue for us?”

Need for better and quicker services to identify and manage HCVF – HCVF assessment can be a slow process in Borneo due to lack of assessors, and there is a need for better industry specific management guidance.

Cooperation for conservation – Wildlife corridors and conservation initiatives need to be planned at a landscape level requiring potentially complex multi-stakeholder cooperation.

Restricting access – “Illegal actors give the industry a bad name.” – HCVF are often in relatively remote areas; restricting access from small scale and illegal actors can cause conflict and be resource intensive.

Solutions and guidance

Despite creating a smaller overall environmental footprint than other sectors in the HoB thus far, mining activities still need to avoid development which adversely impacts HCVF areas. The distribution and locality of HCVF needs to be considered prior to allocation of concessions and long before clearance and mining operations begin. In order to facilitate this, the private sector and regulators alike would benefit from spatial planning databases and tools which indicate the presence of HCVFs. In situations where some habitat fragmentation is unavoidable, wildlife corridors connecting fragmented forests should be established to connect wildlife populations. WWF recommends that new concessions are not awarded in primary forest or any area required to maintain or enhance HCVF.

See: www.hcvnetwork.org for the latest tools and guidelines for HCVF identification and management.

¹⁰⁹ WWF, 2005

¹¹⁰ Husson S. et al: The Status Of The Orang-utan In Indonesia; Report to the Orang-utan Foundation, UK, 2003



FIGURE 4.7: INDONESIAN SCIENTIST CONDUCTING SMALL MAMMAL SURVEY IN BHP BILLITON COAL LEASE AREA ASSISTED BY BHP ENVIRONMENTAL ASSISTANT

CASE STUDY: BHP BILLITON'S INDOMET COAL BIODIVERSITY STRATEGY

The issue

BHP Billiton's IndoMet Coal Project (IMC), located within the Maruwai Basin in Central Kalimantan, is in the Pre-Feasibility Study Phase. IMC strives to benefit biodiversity conservation in Kalimantan both within the BHP Billiton areas of operation and by supporting broad-based conservation activities in the region. In order to better understand the challenges in the area before mining starts, IMC has commissioned more than 10 biodiversity surveys and a landscape-level high conservation value (HCV) assessment for the entire Maruwai Basin, enlisting the assistance of national and international scientists and NGOs. The first biodiversity assessments commenced in 1999 and start dates for construction and mining will be dependent on the outcome of the Selection and Definition phase studies, and having due regard for the development requirements contained in the Coal Contracts of Work (CCOWs) and Indonesian legal and Government approval requirements.

The response

IMC formulated the 'IndoMet Coal Project Biodiversity Strategy', implemented through leading industry practice and biodiversity-oriented projects. The plan requires overarching biodiversity procedures and systems across all IMC areas of operation. For example, biodiversity plans and engineering procedures are developed for each individual mine and major infrastructure element, incorporating site specific biodiversity information assembled from surveys. Each plan includes technical design factors, habitat set-asides, special regeneration plans, species specific requirements, and closure requirements.

The result

As BHP Billiton gains a better understanding of the environment around the IMC project it is able to respond with appropriate management strategies. For example, it ran a series of workshops with leading NGOs to build understanding of the pressures and sensitivities with local groups and regulators. BHP Billiton and Fauna and Flora International (FFI) have worked together since 2007, and in 2010 commenced a partnership to improve understanding of high conservation value areas within Murung Raya district with the goal of developing a conservation and sustainable development strategy for the district. In addition, BHP Billiton has supported the Borneo Orangutan Survival Foundation (BOSF) in its reintroduction of 149 rescued orangutans into the forests around the project area as well as other parts of Central Kalimantan.

Environmental Impact Assessments

What's the issue?

Environmental Impact Assessment (EIA) (also known as AMDAL in Indonesia) is a legal requirement in all three territories in Borneo, and is a necessary pre-requisite prior to commencing mining operations. Despite this regulatory requirement, there are still a number of challenges to ensuring EIAs adequately assess and mitigate environmental impacts related to mining development in the HoB.

What did you tell us?

The cost of conducting EIAs – EIAs require additional expenditure before projects begin which can be a burden for small companies.

Incentives need to be provided by the government – “Companies can only be expected to follow the requirements laid out for them by regulators.” – Regulators need to provide clearer guidance, and enforce it more effectively to incentivise companies to produce detailed EIAs.

Solutions and guidance

EIAs should identify the potential environmental and social issues relating to mining activities well in advance of the mining operations themselves and EIAs should be reviewed and approved by the local regulators before activities commence.

Mine developers (both small and large scale) can draw on global good practices for EIAs, including:

- **Informed site selection:** The EIA should be considered as a ‘site selection tool’ and should be initiated as early as practically possible in the exploration and pre-feasibility stage of mine planning.
- **Use of the ‘mitigation hierarchy’:** The EIA should follow the mitigation hierarchy (a concept which aims to reduce overall environmental impact) by initially preventing or avoiding adverse environmental impacts using appropriate site selection and examining alternative sites; then attempting to minimise or reduce impacts using mitigation measures, and then repairing or restoring adverse residual effects, potentially using biodiversity offsets.
- **Participative:** The EIA should provide early and appropriate opportunities to inform and involve the interested and affected stakeholders, and their inputs and concerns should be addressed explicitly in decision-making. This is especially important when considering indigenous peoples and other vulnerable minorities whose cultural traditions may be at risk.
- **Effective monitoring:** Monitoring (of both the operational and post-closure phase) is vital to ensure that the mitigation measures implemented are effective in avoiding significant environmental impacts. Mitigation measures (which may be documented in an Environmental or Biodiversity Action Plan) need to be re-visited regularly, and in different seasons to ensure effectiveness.

More information on conducting effective EIAs and obtaining timely approval can be found through the following agencies and government departments:

- International Association for Impact Assessment: www.iaia.org
- Malaysian EIA guidance: www.doe.gov.my/old/?q=ms/content/environmental-impact-assessment-eia
- Indonesia AMDAL guidance: <http://bapedalda-diy.go.id>
- Brunei has recently implemented EIA regulations, which must be approved by the Ministry of Development: www.mod.gov.bn

What's the issue?

What did you tell us?

Solutions and guidance

Mercury Use

Mercury is a metal that if inhaled or absorbed is highly toxic to both humans and wildlife. Mercury use in gold mining is banned in both Malaysia and Indonesia; however, its use continues amongst many small scale miners and illegal operations. In Central Kalimantan, over 50,000 kg is thought to be emitted into the environment annually in one location alone.¹¹¹

Alternatives needed - "Mining provides an income, and mercury use increases yield, what is the alternative?"

A number of groups are helping small scale miners reduce the negative health impacts from mercury use, and potentially find alternative revenue streams including:

- A UN-led initiative, the Global Mercury Project, is working in Kalimantan to reduce the use of mercury and provide miners with mercury recycling technology: www.globalmercuryproject.org/countries/indonesia/indonesia.htm#Indo_Newsletters
- Yayasan Tambuhak Sinta is currently working with government, NGO's and donor agencies in 50 villages in the district of Gunung Mas. The project helps villages to develop and implement 'economic livelihood groups': http://project-activities.susiladharma.org/location_asia_oceania/yaysan_tambuhak_sinta.shtml

INTERNATIONAL CASE STUDY - ORO VERDE: COLOMBIAN SMALL SCALE MINING CERTIFICATION SCHEME

In response to the negative impacts of uncontrolled mining activities on the environment and communities in the Chocó Bioregion of Colombia, the Oro Verde, or Green Gold initiative has successfully developed and promoted sustainable small scale mining techniques to reverse the trend. Under the scheme mercury and cyanide use are prohibited, instead relying on filtration and panning techniques to separate gold and platinum from other sediments. In addition, careful planning and timing of sediment extraction and washing is promoted to avoid erosion and watershed degradation.

The initiative covers more than 140,000 ha, where both communities and the environment benefit from the activities. Miners must comply with environmental and social criteria to join the scheme, and in return they receive a guaranteed price for their production. The sustainable production allows the gold to receive a premium on the market, and the profits are passed on to the producers and communities:

- 10% goes to certified miners as a direct economic incentive for environmental services.
- 30% allows the commercial wing of the programme to be sustainable.
- 60% is reinvested in the region in development projects.

¹¹¹ Kabar Itah, August 2010

Mine Rehabilitation

What's the issue?

Mining activities only require the temporary use of land and once the valuable resources have been extracted it is vital that the area is adequately restored to its previous state. Mine rehabilitation plans are a regulatory requirement and should be drawn-up before mining activities begin, and approved for each mine as part of the EIA. The costs of rehabilitation should thus be factored into the mines operating costs from the beginning.

Plans for the reclamation and rehabilitation of mines will include provisions for pre-mining assessments, storage of sediment and top soils during mining activities, and a strategy to return removed soil, with minimal disturbance, and replant the area to encourage natural regeneration. In addition, rehabilitation efforts should be monitored to track progress and ensure there are no adverse effects such as land contamination.

What did you tell us?

Technical capacity - "Many small scale miners do not have the technical capacity or available resources to put into mine rehabilitation."

Tenure - "Uncertain tenure reduces the incentive to put a lot of work into mine rehabilitation before operations begin."

Solutions and guidance

Good practice guidance can be found through the references in Environmental Impact Assessments solution box above.

The case study below provides an example of good practice for pre-operations assessment and planning for future site rehabilitation.

CASE STUDY - PT INDO TAMBANGRAYA MEGAH TBK MINE REHABILITATION PLANNING

The Issue

PT Indo Tambangraya Megah Tbk (ITM) strives to protect the natural habitat and biodiversity in its concession areas. Recognising the value and sensitivity of the HoB, ITM is carrying out detailed site assessments in their Bharinto Ekatama coal mining concession. Mining operations necessitate the removal of some of the forest habitat, but the long term impacts of this can be minimised through careful and thorough pre-project assessment and post-project site rehabilitation.

The Response

As part of their pre-project assessment at their Bharinto concession, ITM is collaborating with Purwodadi Botanical Gardens to conduct a field study examining the biodiversity in the area, producing an inventory of the flora and fauna and measuring the carbon stock. Particular attention is paid to the variety of wild orchids, as these are sensitive to environmental change, and can be used as an indicator of the environmental health of an area. Local communities are interviewed to assess their different requirements and uses of local plants. Using this information a sample of plants are being collected and transferred to a temporary location for cultivation. After mining operations are complete and during the rehabilitation of the area the removed top soil will be back-filled and this stock of plants will be used to replant the site, helping to restore it to its previous natural state. Continuous monitoring will be employed, together with genetic analysis of the diversity of flora in the rehabilitated site.

The Result

ITM plans to use its detailed information about the site together with the samples collected to minimise the impacts of its operations and maximise the speed at which the area is restored to its natural state once operations are complete. Through engagement with the local communities ITM aims to ensure that it takes into consideration their needs and requirements. In addition it helps educate communities as to the importance of environmental protection and sustainable use.



FIGURE 4. 8 BORNEO IS HOME TO NUMEROUS RARE ORCHID SPECIES

Responsible Finance

What's the issue?

Mining companies, particularly those funded by large multi-national commercial banks, are required by their financiers to demonstrate appropriate management of environmental and social impacts. For project finance funded mining developments, these environmental and social commitments are often established under the Equator Principles.

In the HoB specifically (but also common the world over) and there are several challenges with the current approach:

- Mine development and expansion may be funded using corporate loan facilities as opposed to project finance which means the use of proceeds are not always known by a bank. Banks face difficulties applying the Equator Principles to these types of facilities and thus face challenges ensuring responsible mine development.
- Mine development or expansion may be supported by local or national Indonesian or Malaysian banks which are either not Equator Principles signatories, or have limited environmental and social risk management functions.
- Even where mine expansion or development is supported by banks with leading environmental and social management functions and risk screening procedures, banks are challenged by how to practically, and pragmatically, implement these commitments, and in particular identify areas of high biodiversity value (e.g. High Conservation Value Forests) in their client's projects or portfolios.

What did you tell us?

Investment criteria - "Sustainability performance can affect our ability to attract investment or get project finance." - Larger producers seeking investment find responsible lending criteria to be an important incentive to act.

Need greater buy-in from stakeholders - Smaller business investors are often less concerned about sustainability, and contractors need to be brought on board.

Solutions and guidance

Encouraging local banks to adopt the Equator Principles: More banks in the region are being encouraged to become Equator Principles signatories. Although voluntary, they are the de facto standard across the financial sector for determining, assessing and managing social and environmental risk in project finance. The Equator Principles are supported by the International Finance Corporation's (IFC) Performance Standards (PS) which provide detailed guidance to banks and their clients to manage environmental and social impacts. For example PS1 (Social and Environmental Assessment and Management Systems), PS3 (Pollution Prevention and Abatement) and PS 6 (Biodiversity Conservation and Sustainable Natural Resource Management) are likely to be highly relevant to mining companies in the HoB. Supplementary to the Performance Standards the IFC have developed a specific Mining Industry Guideline which banks should encourage their clients to adhere to: [www.ifc.org/ifcext/sustainability.nsf/AttachmentsByTitle/gui_EHSGuidelines2007_Mining/\\$FILE/Final+-+Mining.pdf](http://www.ifc.org/ifcext/sustainability.nsf/AttachmentsByTitle/gui_EHSGuidelines2007_Mining/$FILE/Final+-+Mining.pdf)

Spatial biodiversity risk tools: WWF can help support financiers in identifying and avoiding areas of high biodiversity value. WWF is currently in discussions with key financiers to develop spatial mapping tools which identify for example, High Conservation Value Forests and protected areas. See our website for details of our progress.

What's the issue?

New Financial Incentives

Forests and rivers provide society with valuable ecosystem services; however, private companies do not always take these values into account when making decisions to protect the environment during mining operations. New financial incentives are being implemented to encourage greater consideration of public forest values by private actors.

A range of new financial incentives are available to mining companies to support them in a transition to more sustainable production. These include payments for ecosystem services, payments for reduced carbon emissions through the Clean Development Mechanism (CDM) and Reduced Emissions from Deforestation and forest Degradation (REDD+). Many of these are under development, but there is considerable momentum within the field and good prospects of growth.

For example, the carbon markets currently provide payments for reduced carbon emissions by generating carbon credits under the CDM which can subsequently be sold in the carbon markets. Under the CDM coal mining companies can receive payments for projects which reduce emissions of coal bed methane for example. There are currently no active programmes of this type in Borneo, however, a number of coal producers in China and India are profiting through these types of project.

In addition, mining companies may be able to receive REDD+ payments for minimising forest damage and forest restoration activities if they can demonstrate (in accordance with methodologies that are being developed) that they are helping to reduce emissions which are additional to their regulatory requirements.

What did you tell us?

Sustainability costs – “Changing management practices and incorporating sustainability factors is expensive.”

Regulatory incentives – More than 80% of interviewees thought sustainability needs to be driven and enforced through government regulations.

Financial incentives – NGOs and governments need to help producers learn about the new financial incentives available and how to take advantage of them.

Solutions and guidance

While the basic guidelines for sustainable practices need to be set through regulators, mining companies can also be financially rewarded for particular activities through national and international incentive systems. These incentives can represent a significant increase in revenue, such that operating the mine in a more sustainable way increases mine profits.

For example, the Fuxin Coal Mine in China set up a CDM project and will receive credits for capturing coal bed methane, a strong greenhouse gas, which was previously vented to the atmosphere. The project is expected to avoid over 600,000 tCO₂e emissions annually¹¹², worth USD 9.6 million in carbon credits¹¹³. Not only will the company benefit financially from the sale of carbon credits; the captured methane will also be used to generate electricity, reducing their operational costs.

¹¹² <http://cdm.unfccc.int/Projects/DB/DNV-CUK1214932135.8/view>

¹¹³ 26/11/2010: CER price Euro 12.26 (Bluenext.eu) = circa USD 16 * 600,000 CERs = USD 9.6 million (un-discounted)

Business case for responsible mining in Borneo

To realise the governments' vision for the HoB it is essential that the principles of environmental sustainability are embraced by the mining sector in Borneo. The economic case for reducing land degradation and improving environmental practices is increasingly recognised at national and international levels based on the valuable services which a healthy environment delivers to society.

The issue is more complex for individual companies. A range of challenges, often linked to a lack of regulatory enforcement, and technical capacity have been identified by mining companies and these are addressed in the preceding sections. Notwithstanding these challenges, the business benefits of improving environmental practices are increasingly recognised by mining companies in Borneo.

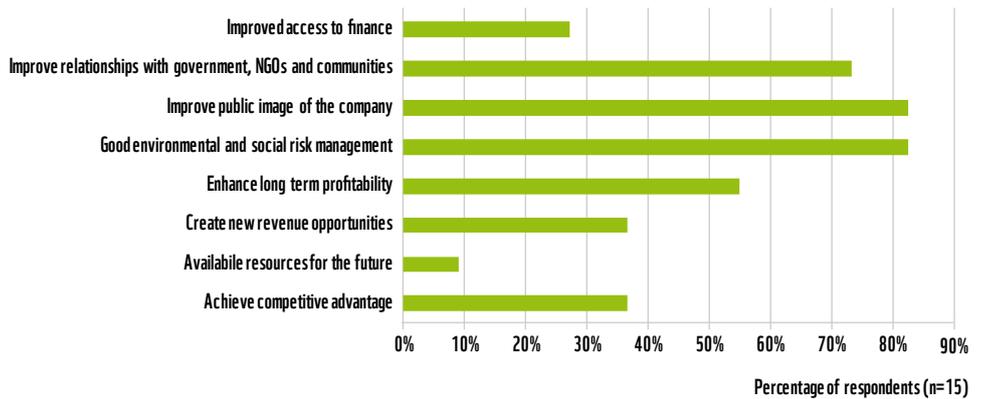


FIGURE 4.9: BENEFITS OF GOOD ENVIRONMENTAL AND SOCIAL PRACTICES AS REPORTED BY MINING COMPANIES IN BORNEO

Figure 4.9 is based on interviews and surveys with 15 respondents from mining companies operating in Borneo. 82% of this group identified good environmental and social risk management as a benefit of sustainability activities and the same proportion thought their company would benefit from an improved public image. Almost three quarters (73%) of respondents felt that sustainability activities improved their relationships with governments, NGOs and community groups and perhaps related to this, 64% saw reduced risk of being targeted by negative media campaigns. More than half (55%) of mining companies felt that sustainability activities would enhance their long term profitability.

Furthermore, as indicated in the solution boxes on previous pages; from heightened enforcement of existing regulation and new financing requirements from lenders; to strong competitor responses on biodiversity management; many factors are coming together to strengthen the business case for responsible mining in Borneo.

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