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DRAFT REPORT ON IMPROVING RESILIENCE OF THE TROPICAL TIMBER SECTOR TO THE IMPACTS OF GLOBAL AND REGIONAL ECONOMIC AND FINANCIAL CRISES

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ACRONYMS

ABIMCI	Brazilian Association for Mechanically Processed Timber
ABIPA	Brazilian Association of the Wood Panels Industry
ABRAF	Brazilian Association of Forest Plantation Producers
ADB	Asian Development Bank
AFPA	American Forest and Paper Association
AHEC	American Hardwood Export Council
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
ATIBT	Association Technique Internationale des Bois Tropicaux
BC	British Columbia
BCJ	Builders' Carpentry and Joinery
BNM	Bank Negara Malaysia (Central Bank of Malaysia)
BRACELPA	Brazilian Pulp and Paper Association
BREEAM	Building Research Establishment Environmental Assessment Method
BRIC	Brazil Russia Indonesia China
BRL	Brazilian real
BSI	Baltic Supramax Index
CDO	Collaterized Debt Obligations
CEPA	Center for Policy Analysis
CITES	Convention on International Trade in Endangered Species
CNY	Chinese yuan
COFI	Council of Forest Industries (British Columbia)
COST	European Cooperation in Science and Technology
CWG	Canada Wood Group
DGNB	German Sustainable Building Certification
DOSM	Department of Statistics Malaysia
DR	Democratic Republic
DRC	Democratic Republic of Congo
ECOWAS	Economic Community of West African States
EIU	Economist Intelligence Unit
ETF	Exchange Traded Fund
EU	European Union
EU FLEGT	FLEGT European Union Forest Law Enforcement Governance and Trade
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign Direct Investment
FDPM	Forestry Department of Peninsula Malaysia
FDSH	Forestry Department of Sabah
FDSK	Forestry Department of Sarawak
FII	Forestry Innovation Investment Ltd
FLEGT	Forest Law Enforcement Governance and Trade
FMU	forest management unit
FOB	Free on Board
FORIG	Forest Research Institute of Ghana
FRIM	Forest Research Institute of Malaysia
FSC	Forest Stewardship Council
GDP	Gross Domestic Product

GEM	Growth Enterprises Market
GIPC	The Ghana Investment Promotions Center
HQE	Haute Qualité Environnementale (High Quality Environmental Standard)
ICT	information and communications technology
IDR	Indonesian rupiah
IGO	International Governmental Organization
ILO	International Labour Organization
IMF	International Monetary Fund
INR	Indian rupee
ITC	International Trade Commission
ITTO	International Tropical Timber Organization
JPY	Japanese yen
LAS	legal assurance scheme
LEED	Leadership in Environmental and Energy Design
LESDEP	Local Enterprise and Skills Development Programme
LI	Legislative Instrument
LNG	Liquefied natural gas
LoTS	log tracking system
LPG	Liquefied petroleum gas
LSE	London Stock Exchange
LUS	lesser used species
M&A	mergers and acquisitions
MDF	medium density fibreboard
MFPC	Malaysian Furniture Promotion Council
MGW	MTC Global WoodMart
MIS	Market Information Service
MITI	Ministry of International Trade and Industry
MoF	Ministry of finance of Malaysia
MoPIC	Ministry of Plantation Industries and Commodities
MPC	Monetary Policy Committee
MPMA	Malaysian Panel-Products Manufacturers' Association
MTC	Malaysian Timber Council
MTCC	Malaysian Timber Certification Council
MTCS	Malaysian Timber Certification Scheme
MTIB	Malaysian Timber Industry Board
MWIA	Malaysian Wood Industries Association
MWMJC	Malaysian Wood Moulding and Joinery Council
MXN	Mexican peso
MYR	Malaysian ringgit
NATIP	National Timber Industry Policy
NGO	non-governmental organisation
NZ	New Zealand
OPEC	Organization of the Petroleum Exporting Countries
OSB	oriented strand board
PIGS	Portugal Ireland Greece Spain
PPP	public procurement policies
R	Brazilian real
R&D	research and development
REDD	Reducing Emissions from Deforestation and Forest Degradation
RM	Malaysian ringgit

RPP	Responsible Purchasing Policy
SFM	sustainable forest management
SME	Small or medium-sized enterprise
SPWP	secondary processed wood products
SRA	social responsibility agreement
STIDC	Sarawak Timber Industry Development Corporation
Taiwan POC	Taiwan Province of China
TEAM	Timber Exporters' Association of Malaysia
TIDD	Timber Industry Development Division
TTJ	Timber Trade Journal
TTM	Tropical Timber Market
UAE	United Arab Emirates
UK	United Kingdom
UNCTAD	United Nations Conference on Trade and Development
UNECE	United Nations Economic Commission for Europe
US	United States
USA	United States of America
USD	United States Dollars
USITC	United States International Trade Commission
VAT	value-added tax
VLCC	very large crude carrier
VPA	voluntary partnership agreement
WAN	wide area network
WEF	World Economic Forum
WPC	Wood plastic composite
WWF-Malaysia	World Wide Fund for Nature-Malaysia

EXECUTIVE SUMMARY

This project's objective is to assist in increasing the resilience of the tropical forestry sector to the threats resulting from future global economic and financial shocks by enhancing the capacity of ITTO producer member countries to anticipate, manage and recover from global economic crises.

Macroeconomic impacts of the global financial and economic crisis

Following a decade of strong and sustained growth in the world economy, in mid-2007 the global financial crisis started in the United States and spread rapidly to other parts of the world. The crisis transformed into a global economic crisis with its effects being most severe in 2009, resulting in declining economic growth in many tropical consuming countries, rising unemployment and large declines in international trade and capital flows. The impacts on gross domestic product (GDP) growth were most severe in the developed economies with the USA initially most affected by the impacts of the crisis that had originated in its own subprime mortgage market and which had marked impacts on US disposable incomes, consumer demand levels and housing starts. With interdependent globalised markets, the effects quickly spread to European Union (EU) countries and to developing countries with strong trading links with the USA and Europe.

By contrast, Asian producer and consumer economies have outpaced other regions and have led the recovery from recession supported by strong export performance despite slowing exports to the US and Europe, and growing domestic demand - particularly in China and India. Many Asian economies were cushioned from the full impacts of the economic shock because they adopted stronger economic frameworks in the aftermath of the Asian economic crisis at the end of the 1990s. However, a high proportion of Asia-Pacific producers have high trade in GDP ratios, particularly Malaysia, Cambodia, Thailand, and Papua New Guinea (PNG). Latin America/Caribbean countries and sub-regions with strong real linkages (trade and remittances) to the US economy (notably Mexico and the Caribbean) were more affected by the crisis than those with less dependence on the US (notably Brazil). The African region was less affected by the global downturn having relative insulation from financial spillovers from the EU, diversification of exports to fast-growing emerging economies (particularly China) and high commodity prices, which benefited the region's commodity exporters. Some of the other important macroeconomic impacts of the crisis include:

- Narrowing of trade imbalances, attributed to a fall in the US trade deficit and China's trade surplus, as China's post-crisis growth strategy focuses on domestic sources of growth rather than exports.
- Exchange rate volatility resulting from large changes in capital flows from developed to emerging economies, resulting in a depreciation of the US dollar and appreciation of currencies in the emerging economies.
- Significant declines in consumer spending, housing starts and construction activity in the US and EU, which are significant end-use markets for tropical wood products.
- High unemployment levels, high rates of youth unemployment and an increase in long-term unemployment in advanced economies contributing to poor recoveries in housing starts.
- Reductions in worker hours and retrenchment of workers in manufacturing enterprises in producer countries which have led to reductions in household expenditure and risks that the most vulnerable workers will be pushed into the informal economy, including migrant workers returning to rural forest areas in forest rich countries.

- Substantial contractions in international investment, including foreign direct investment (FDI) inflows to producer countries. While many of the least developed countries had limited exposure to the crisis through exports, their levels of FDI are threatened when FDI outflows from developed countries are reduced and there is greater competition for investment funds. Countries with strong macroeconomic stability and facilitating institutions have been the major recipients of the recovery in FDI inflows – notably China and Brazil.
- Volatility in energy and transport costs, with prices plunging in mid-2008 in response to decelerating demand, and rising in 2009 and 2010 in response to geopolitical uncertainty in the Middle East, while freight rates declined in mid to late-2010 owing to an oversupply of vessels.
- Disruptions for many firms and countries involved in supply chain networks, given the vertically integrated nature of supply chains involving firms from multiple countries and the just-in-time delivery systems employed.
- Country competitiveness determining the ability of ITTO producer countries to respond to the recovery in global demand post-crisis, with more competitive ITTO producer countries (e.g. Malaysia, Brazil, Thailand and Indonesia) having a comparative advantage in responding quickly to market signals and in sustaining growth.
- Increased risks of trade protectionism, particularly non-tariff trade measures, driven by high unemployment rates, global trade imbalances and perceptions of exchange rate undervaluation among trading partners.
- Strengthening of regional cooperation in producer regions following awareness of the benefits of regional cooperation, particularly in creating and exploiting regional demand.

Country level assessments of vulnerabilities to global economic shocks, which include ratings of global competitiveness, overall size of the domestic market, export dependence, level of corruption and FDI dependence, show major concerns for ITTO producer countries. Brazil is the only ITTO producer country with no major areas of vulnerability, while Cameroon, Dem. Republic of Congo, Republic of Congo, Côte d'Ivoire, Gabon, Liberia, Cambodia, Fiji, PNG, Bolivia, Honduras, Guyana, Panama, and Trinidad and Tobago have significant areas of vulnerability.

Impacts on the tropical timber sector

Major trends in tropical timber production during the global economic crisis include:

- In response to reduced global demand for wood products, log production declined in producer countries where a high proportion of production had been exported.
- Independent of impacts due to the crisis, supply constraints due to historical overexploitation of natural forests, and sustainable forest management(SFM) initiatives in response to overexploitation of forests, also impacted production levels marginally during the period under review.
- Small and medium-sized enterprises (SMEs), which dominate tropical wood processing industries in many ITTO producer countries, were exposed by the crisis because of limited access to finance, weak negotiating power, and limited ability to respond quickly when markets recovered. SME production curtailments and plant shutdowns occurred in most ITTO producer countries during the crisis period.

- In the Asian region, a significant overcapacity in the wood processing sector existed before the crisis period. Rationalisation and downsizing of many tropical wood processing industries is likely to have increased the overall competitiveness of the sector.
- As a result of the crisis, a focus on processing of higher value, well-known species to improve the economics of production occurred in some tropical producer countries. By contrast, lower value species were underutilised, with implications for SFM goals in some producer countries.
- Private sector organisations, which are generally more sensitive to changes in the market than public sector organisations, were more exposed to the global downturn in demand during the crisis.

Major trends in tropical wood products trade resulting from during the global economic crisis include:

- The impacts on construction and consumer spending in developed economies resulted in significant effects on demand for tropical wood products in the developed economies – particularly in North America and Europe – although the effects were uneven in European countries.
- While demand waned in Europe and the USA as a result of the crisis, domestic demand in producer countries and in some parts of Asia, expanded. In the long-term the crisis may have reinforced existing trends in the tropical trade as consumer demand for end-use tropical wood products exports shifts from the US and Europe to Asia.
- Growth in consumption, and imports, of primary wood products in China and India, has cushioned the impact of the crisis for tropical primary wood products exporters. China's tropical log imports dropped in 2009 but recovered to pre-crisis levels in 2010.
- Many tropical producer countries diversified their trade patterns during the crisis to focus more on intra-regional trade and other new emerging markets.
- Tropical wood products have been losing market share in a number of applications to a range of alternative wood and non-wood products, a trend that had been occurring well before the economic crisis but reinforced by reduced price expectations during the economic crisis.
- The current crisis reinforces the risks associated with being only export oriented. A number of ITTO producer countries export a significant proportion of their wood products production and are thus exposed to external demand shocks.

The preponderance of small and medium-sized enterprises (SMEs) in tropical timber wood processing, many of which had problems with liquidity and difficulties in accessing finance during the crisis, remains a challenge for tropical supplying countries during global demand downturns. The lack of funding for training, research and development (R&D) and new investment has had negative implications for SFM. The emerging need to refocus some production on domestic demand means that these key issues need to be addressed in improving resilience to future downturns in international demand.

There have been benefits, however, in the rationalisation of SMEs and downsizing of the tropical wood processing industries, with consolidation around the larger enterprises. The significant structural changes in tropical wood processing enterprises which occurred in many tropical producer

countries as a result of the crisis have no doubt improved their overall competitiveness. Tropical timber competitiveness issues had become more relevant during the economic crisis, with factors such as price, product differentiation and supply chain responsiveness (particularly just-in-time delivery) becoming more important.

The global economic crisis has intensified the emphasis in consumer countries on assuring that tropical wood imports are sourced legally and obtained from sustainably managed forests. However, the downturn in demand in ITTO consumer countries has emphasised the importance for ITTO producers of domestic and regional demand growth. Much of this demand growth has been in markets which place little emphasis on certification and legality verification, with implications for SFM.

The global economic crisis has accelerated trade trends which existed before the crisis, especially the shift in trade towards emerging markets, particularly in the Asian region, and the growth in intra-regional trade. Substitution of tropical wood products by a range of alternative wood and non-wood products had also been occurring well before the crisis, but has been reinforced by reduced price expectations during the crisis.

A number of ITTO producer countries – particularly Cameroon, Democratic Republic of Congo, Republic of Congo, Côte d'Ivoire, Gabon, Honduras, Malaysia, Papua New Guinea, and Thailand – export a significant proportion of their tropical timber production. The vulnerability of exporters engaged in tropical primary wood products exports has not been as severe as initially predicted, largely because of the rapid growth in exports of primary products to China and India, whose domestic markets have grown.

Impacts on tropical timber demand – Consumer countries

Two key tropical timber markets – China and the EU - represent a contrast between emerging (China) and mature (EU) markets with differing demand drivers for tropical wood products.

China

Over the last two decades China has become the most important country importer and exporter of wood-based products, including wood products of tropical origin, with urbanisation and income growth being the major drivers of domestic consumption. Importantly, China recovered strongly from the worst effects of the global economic crisis which had reduced demand for its value-added products in consumer markets. Although the wood processing sector was negatively impacted by the decline in demand for its exports in 2008 and 2009, aggressive economic stimulus measures targeting both the general economy and the forest and wood-based industries contributed to both the recovery in wood product exports and significant growth in the domestic market for wood-based products.

Restructuring and upgrading of China's wood products manufacturing industry in response to the crisis had improved the sector's competitiveness, giving Chinese manufacturers a comparative advantage compared with many other producing countries that were not able to provide significant, targeted manufacturing and export assistance measures. This provided opportunities for Chinese exporters when export markets began to recover in 2010.

Significant post-crisis challenges for China include the introduction of environmental product standards and legal requirements for legally and sustainably sourced products in export markets, in addition to growing labour and raw material costs which are impacting industry competitiveness. While China has been consuming more wood products domestically, and increasing exports to less demanding markets in terms of environmental legislative measures, the USA, EU and Japan continue to be significant end-use destinations for Chinese value-added products with tropical raw material inputs. This implies that the competitiveness of China's tropical wood products exports will be under threat from demands for legality in these markets.

European Union

European demographic trends are characterised by declining population growth, with declining birth rates (particularly in Germany) and high life expectancies resulting in significant ageing of the population. Although China also has an ageing population, its consumption growth has been fuelled by rising household incomes and urbanisation, with considerable scope for further growth in those areas. In contrast, European incomes are high and EU countries are highly urbanised, suggesting that overall consumption is not likely to grow significantly in the future.

EU countries have traditionally been major destinations for tropical wood products, with the UK, France, the Netherlands, Italy, Germany, Portugal, Spain and Belgium importing substantial volumes of tropical sawnwood, veneers and plywood. These imports are mostly remanufactured into high value furniture, joinery and flooring products which are consumed in EU markets. Although there is some variation between countries, the crisis resulted in significant reductions in levels of consumption and imports of tropical wood products which have not recovered to pre-crisis levels. A growing trend evident before the crisis has been declining imports of tropical primary products and a rise in imports of finished products, primarily from Asian suppliers.

Sustainable consumption and green consumerism have been dominant market drivers in EU markets since well before the crisis, with emphasis on ensuring supplies of legal and/or sustainable wood products. Environmental concerns have benefited FSC and PEFC certified hardwoods, the majority of which are sourced from Europe. The lack of availability of certified tropical wood products remains a concern as the EU moves towards full implementation of the EU Timber Regulation in 2013. The global economic crisis, and continuing euro crisis, is reinforcing existing market trends.

While imports of tropical hardwoods had declined dramatically in 2009, sales and production of some important competing materials were rising. This is attributed to the perception that they are lower risk, both in terms of environmental and technical performance and their ready availability at reasonably stable prices. On-going work to modify the characteristics of temperate hardwoods and softwoods to improve their technical and aesthetic performance, mimicking the characteristics of tropical hardwoods, has been a significant threat to the tropical hardwood sector in EU markets.

Significant structural changes in the European wood importing industry, which had begun several years before the crisis, had intensified in response to the recession, including the need for flexible, just-in-time delivery of finished products to offset uncertainty in consumption and prices. Retailers, wholesalers and importers are all increasingly working on a just-in-time basis and maintaining low inventories. These factors are working against tropical hardwoods, which tend to be more difficult to obtain at short notice at reasonably stable prices.

As a result of the economic recession, price has become a more important determinant of relative competitiveness which is a threat to higher end commodities such as tropical hardwoods. The crisis has disproportionately affected certain markets that have traditionally been important markets for tropical hardwoods, such as hardwood veneers in the southern European door sector.

The combination of these changes on the demand-side, and the supply-side problems emerging from widespread shutdowns and closures in tropical countries during the recession, suggests that tropical wood suppliers will face a major challenge to rebound from the downturn in the European market even as economic conditions begin to improve. This would require much larger investments in marketing, particularly to the architectural and design profession, product development, and certification, than has previously been applied by the tropical hardwood industry. Financing such activities would be particularly difficult after such a prolonged slump, suggesting that the tropical wood industry would need to find more effective ways of working together to implement a coherent market access strategy.

Impacts of policy responses and remedial measures – Producer countries

Brazil

The Brazilian forest industry has a large and growing domestic market which is more important than the export market, is reliant on plantations (although many are in the non-tropical regions) and has a well-established value-added processing industry which had already been undergoing structural change well before the crisis.

The impacts of the crisis on forest area, plantation development, SFM, forest governance and policy development were fairly insignificant, mainly reflecting the fact that forest management involves long-term planning and the crisis covered a relatively short period of time. The only notable effects were some reduction in harvesting levels and a small increase in illegal logging being reported.

Wood processing was affected by a reduction in export volumes, and as a whole, production of primary and secondary products was reduced and there were some mill closures. The export oriented companies were more affected, although strong growth in the domestic market over the period mitigated some of the impacts. In order to mitigate risks, there was a decline in investments to improve or expand wood processing plants with the larger export- oriented firms being most affected. The smaller companies have been more focused on the domestic market and many operate in the informal market.

Tropical plywood exports were already on a downward trend since before the crisis. Lumber, veneer and value-added exports were significantly affected by the drop in demand in the EU and USA, as well as other factors, and exports declined over the crisis period. Many exporters diversified their markets, although this trend had been occurring since 2000, with the USA and EU markets becoming less important. The downturn in export markets and wood processing affected forestry sector employment, although high economic growth had meant that employment opportunities opened up in other sectors such as civil construction.

Remedial measures employed by the private sector included:

- a reduction in production levels by export oriented companies, particularly plywood producers;
- review and renegotiation of prices where possible;
- the development of new products and markets, including in the Asian region;
- more emphasis on development of value-added products which were less affected than primary products; and
- diversion of sales from the export to the domestic market which has continued to grow significantly.

Government initiatives focused on macroeconomic issues, such as making available credit lines to boost the national economy and facilitate investments to increase industry productivity. These had indirect impacts on the forestry sector by boosting the civil construction and furniture sectors.

The crisis had an important impact on the tropical forestry sector, but other factors had also been influencing the performance of the Brazilian tropical timber industry over the last few years. Brazilian exports of some tropical timber products started to decline in 2004, and this was a result of several factors including escalating cost components and the strong appreciation of the domestic currency.

Stakeholders mostly referred to negative impacts resulting from the crisis, including the reduction of economic activities involving forest management, industry and trade operations which resulted in reduced investment, revenues, and employment. On the other hand, there were positive outcomes from the crisis, including the development of timber industry strategies to strengthen the timber industry, the development of new products and markets by some companies, and efficiency and productivity gains by some companies. The crisis has also highlighted the need for the Brazilian tropical timber industry to develop and operate a market intelligence system to identify structural factors that can affect future markets, anticipate change and identify actions required to mitigate the effects of unexpected market changes.

Ghana

The lack of interconnectivity with global financial markets resulted in delayed impacts of the global financial and economic crisis on Ghana. No targeted policy responses and other remedial measures were introduced for the wood products sector. Government expenditure and the introduction of expansionary programmes through its national budget in 2008 provided the required stimulus for the Ghanaian economy. High prices for Ghana's main export products, namely, cocoa and gold, limited the impact of the crisis although it diminished the importance of timber in the Ghanaian economy.

Ghana experienced a 25 percent reduction in the value of wood and wood products exports in 2009. The domestic market remains relatively undeveloped so it was unable to provide a buffer during downturns in the export market. The period also saw a reduction in R&D spending although the poor linkages between research and industry impeded any major advancement in product development and processing which may have improved forest industry competitiveness.

Regional markets provided an opportunity for mitigating the impact of the crisis. The timber industry in Ghana diversified its markets to the sub-region resulting in the ECOWAS region being Ghana's top importer of wood products in value terms in 2010. Domestic markets in the ECOWAS region offer significant opportunity, with growing construction industries and economies of countries in the sub-region.

Media attention and issues concerning the environment provided opportunities for the forest sector, particularly regarding forest certification. Demand for legal and sustainable timber has increased in the EU and USA during and post crisis, and although most Ghana exporters have been challenged by these requirements, some producers have sought to improve their competitiveness by pursuing certification as a means to differentiate their products. Market intelligence availability remains a challenge although the ITTO MIS was regarded as a reliable source of market information.

At forest level, there was a reduction in the timing and level of funding for plantations development; and there was a high incidence of chainsaw logging reported during the crisis period by the international press which contributed, along with reduced demand, to a reduction in imports from environmentally sensitive markets such as the EU and US.

In terms of business operations, the predominance of SMEs in the sector meant that a large number of businesses were more exposed to market volatility, and their ability to attract investment funding has been more limited than in larger enterprises. In addition, flows of FDI into the Ghana forestry sector have been relatively low compared with other sectors, reflecting the inadequacies of the resource base.

In general, Ghana's forest industry competitiveness was affected by increases in energy, utilities and transport costs, the high currency which influenced returns to exporters, high interest rates limiting new technology investment and mill upgrades, and interruptions in shipping services which led to perceptions that Ghana's shipments were unreliable. Other aspects which limited Ghana's ability to be more competitive during the global downturn included the reliance on commodities, which exposed exporters to global market price fluctuations, limited use of ICT and market intelligence, and a general lack of innovation in the sector.

Malaysia

Malaysia was more exposed to the crisis than Brazil and Ghana because of its high proportion of trade in GDP. Although the economy overall was affected by a significant decline in exports, the financial sector reforms and capacity building measures introduced following the Asian economic crisis in the 1990s increased the resilience of Malaysia's financial sector, so that continued expansion of bank loans to businesses and households continued in 2009.

Malaysia's exports of primary products decreased sharply in 2009 with the exception of logs. This reflected different market destinations, with log exports being predominantly to India, where imports grew during the crisis period, whereas other product exports were to a number of other destinations, many of which had severe demand downturns in 2008 and 2009.

Sawnwood exporters claimed that importers were making excessive quality demands and cancelling orders to reduce their inventories, exposing the Malaysian producers to high inventory costs and other overheads. Plywood exporters were affected by reduced demand in Japan but explored new

markets, particularly in the Middle East. However, export prices for most wood products were down significantly in 2008 and 2009.

Malaysia's domestic market is not as large as Brazil or neighbouring Indonesia, so it was unable to act as a buffer during the crisis, although strong regional ties with countries such as Thailand have been important to the trade

Wood processing was severely affected by the downturn in demand in export markets, with some producers reducing their production levels, including kiln drying capacity in sawmills, and there was labour retrenchment particularly in SMEs. Malaysian wood processors were also affected by cancellation and withdrawal of banking and trade credit facilities, with a perception in financial institutions that the timber industry is high risk and a sunset industry. On a positive note the plywood industry benefitted from not being burdened by overcapacity and debts.

The competitiveness of Malaysian wood product exports were also being challenged by a number of issues that had been occurring well before the crisis, including the cost burden of certification, competition from lower cost producers, problems with log shortages for the wood processing industries and an escalation of shipping and freight charges.

Although the forestry sector was not targeted specifically, two government economic stimulus packages were introduced in 2008 and 2009 and included stimulus funding for public infrastructure and buildings which boosted the non-residential building sector. Malaysian exporters benefited from strong growth in the regional economy – particularly China - towards the end of 2009.

Although the National Timber Industry Policy was initiated before the global downturn, it was launched in 2009 and has provided a long-term strategy to improve Malaysia's timber industry competitiveness and therefore to survive future global demand downturns.

The Malaysian Timber Council played an important role in assisting the industry to remain competitive and well positioned during the crisis and in Sarawak, which is an important log producing region, the Sarawak Timber Industry Development Corporation provided assistance to exporters. The moulding and joinery industry explored new emerging markets, and sought to improve their product offerings through higher level quality control in manufacturing and supported research efforts on lesser use species. The furniture industry embarked on various initiatives to improve their export market competitiveness. FRIM, the Forest Research Institute of Malaysia, focused on utilisation of other species and materials to relieve the raw material situation, and development of higher value products

The forestry sectors in all three case study countries were impacted by the global downturn, and although their risk profiles were somewhat different, some common elements have emerged in terms of how tropical timber industries can minimise impacts and become more competitive during severe economic downturns. These include the need to:

- develop market intelligence capabilities in the tropical forestry sector through better cooperation between private sector, government and international organisations;
- invest in development of new products and geographical market opportunities , including domestic and regional markets;

- continuously make gains in productivity to reduce costs and maintain competitiveness, and to identify and exploit sources of competitive advantage;
- focus on value-added and innovative products which are less affected by global economic downturns;
- strengthen industry and trade associations and the marketing and promotional support organisations which are crucial for implementing policies to ensure export competitiveness during downturns;
- include external demand crisis action plans in long-term strategic planning processes for the forestry sector;
- strengthen the capabilities of SMEs in the forestry sector to manage and overcome demand crises.

Success strategies from other sectors

Periods of financial and economic crisis are characterised by a sharp reduction in demand and difficult credit conditions, which can severely affect the forestry sector's ability to operate and maintain employment. The few areas of remaining demand become hotly contested, increasing the pressure on prices.

Governments, industries and enterprises in various countries have taken a number of steps to become more competitive internationally, both in previous downturns and the most recent crisis. For example, economic reforms and infrastructural spending have permanently lowered the New Zealand industry's cost structure. In some countries governments also assisted their industries by negotiating better market access, such as through reduction in tariff escalation on value-added products. Short term assistance was given in Nova Scotia by providing tax breaks and making funds for investment more accessible to industry.

Industry associations, sometimes in partnership with government, have focussed mainly on market development and promotions. In some countries the efforts have been continuous over many years and even decades, as wood using sectors have been found to be largely unresponsive to short-term campaigns. The growth of the China market during the current crisis has been fortuitous, but it would not have grown so rapidly for the Canadian industry without the efforts of many organisations at all levels.

The structure of the supply chain and the distribution of commodities can also influence returns. Where there are large numbers of exporters and declining demand, competition intensifies resulting in an erosion of prices. Some industries have attempted to restructure their distribution channels in order to reduce intra-channel competition. However, this has frequently failed due to the rewards for those operating outside the arrangement. Success has been mainly in industries where there is a history of such arrangements or supported by legislation.

Innovation permeates every aspect of the forestry business, although much innovation is unseen at the enterprise level. However some developments have been documented. Increased use of bioenergy has opened new earning possibilities for the forestry sector. Changes to building codes have opened up new end uses for wood, and expanded the range of product options. However new products tend to require a significant development period before they reach their market potential, and they require up front funding which can be scarce during recessionary periods. The support

from government can therefore be crucial. Product and market diversification are key activities for reducing market volatility.

Suppliers also looked at ways to enhance their value propositions. The demand for certified products and chain of custody certification has provided new opportunities for suppliers to differentiate themselves. In some markets, certification defines the right to operate, as mandated by the Lacey Act in the U.S. and the EU Timber Regulation. As new technologies and tools emerge for identification of wood and timber tracking, the more "due care" action regulators will expect from timber importers and the supply chain. In other words there is an opportunity for enterprises to continue to raise standards in ensuring their supply is sustainable and compliant with the most stringent requirements.

At the enterprise level, companies have focussed on reducing stock and instituting stricter payment requirements, to preserve cash flow and minimise bad debts. Shipping services were sourced from spot markets as rates declined.

There was no uniform response by the softwood and temperate hardwood industry to the economic crisis, other than the usual tactics of tightening financial and operational management and reducing inventory. Each industry and enterprise implemented actions that reflected their own particular set of circumstances. Some industries coordinated their actions at all levels of organisation, from government to industry associations and down to the individual enterprise, while others expected the individual enterprises to respond appropriately.

It has been difficult to differentiate responses that were specific to the economic crisis, and activities that were part of an on-going strategic programme. This is because most activities were not only appropriate for mitigating the effects of the crisis; they were just as relevant in normal economic conditions. However downturns and crisis situations can create the right environment and political will to take the necessary steps to improve competitiveness and may have led to changes in emphasis and importance attached to planned programmes, but not necessarily direction. Those sectors that responded with a comprehensive and coordinated plan of action are likely to be those that benefit most from the economic recovery.

Recommendations

Recommendations for ITTO

Grow domestic and regional markets

- Support member countries to develop and grow their domestic markets, including the setting up of statistical and reporting systems to report on production, trade and prices in wood products on the domestic market.
- Facilitate detailed wood market research in emerging and regional markets with a potential to grow major new outlets for tropical wood products and facilitate intra-regional trade in value-added products, assisting in market and product restructuring to move the wood products value chain towards growing, emerging markets.
- Facilitate the promotion of trade in legal timber in domestic and regional markets.
- Renew ITTO's work in the promotion of intra-regional trade in timber and timber products, reviewing and, where appropriate, acting on recommendations of recent work in this area.

- Support regional trade fairs, exhibitions and conferences to build effective use of wood products at regional level and promote awareness of wood products at national level.

Improve the competitiveness of the tropical wood products sector

- Strengthen ITTO work on promoting value-added processing in ITTO producer member countries, and raise enterprises' capacity for R&D and technology upgrades.
- Consider recommendations from previous ITTO work on developing a generic design-led promotional campaign for tropical wood.
- Continue to facilitate efforts by ITTO producer members to achieve internationally recognized forest and chain of custody certification standards.
- Continue to facilitate efforts by ITTO producer members to improve forest governance, given that the economic crisis has increased pressure on wood processing companies to reduce production costs and in some cases to resort to illegal production and trade activities.

Develop preparedness measures for global financial crises

- Facilitate efforts at the international level to bring together government, regional and private sector organisations to conduct regular outlook studies specifically for the tropical forestry sector. Incorporate the use of scenario planning and foresight methodologies, with the aim of reducing uncertainty and risks associated with global economic crises for ITTO producer countries.
- Strengthen the capacity of ITTO producer countries at government and forestry sector organizational levels to monitor changes in the global economic environment and the forestry sector business environment in domestic and export markets so that they may assist forestry enterprises to adopt appropriate preparedness measures as early as possible.
- Strengthen the capacity of ITTO producer member countries to assist their forestry enterprises to undertake crisis management planning, with an emphasis on country-specific vulnerabilities and risk assessment, given the diverse nature of conditions in ITTO producer member countries.
- Renew support for the ITTO Market Information Service, and extend the coverage to include global crisis monitoring of relevance to the forestry sector. Develop a platform for ITTO members to share their experiences and lessons learned on the impacts of the global financial and economic crises.

Develop guiding principles for responding to global economic shocks

Assist ITTO member countries, and their public and private sector forest industries, in developing a set of guiding principles for responding to global economic shocks, including:

- for SMEs in coping with reduced liquidity and credit crunches;
- for financial institutions in providing services to assist large and small organisations in accessing finance;
- for large organisations as part of the value chain, working to strengthen partnerships in the supply chain to work together in overcoming difficulties;
- for governments in understanding the needs of large and small organisations during economic shocks;

- for forest industries in the public and private sector in developing marketing strategies to overcome reduced consumer demand;
- for government and public and private sector organisations, in strengthening innovation and R&D capabilities to enhance competitiveness in existing markets and create new possibilities for market expansion.

Recommendations for ITTO producer countries

Grow domestic markets

- Commit to developing value-added domestic markets to reduce export dependence and diversify and expand markets, in particular by developing reporting systems which will support development of the domestic market.
- Promote trade in legal and sustainable timber in domestic and regional markets.
- Strengthen the capacity of timber trade associations to develop their advocacy skills in engaging constructively with governments to create a favourable environment for the forest industry.
- Improve distribution channels within domestic and regional markets.
- Provide stimulus for domestic industries, increasing domestic demand for value-added wood products.

Cushion the impacts on enterprises, particularly SMEs.

- Ensure during economic downturns that economic stimulus packages effectively target private investment and SMEs.
- Establish business bases for small forestry enterprises with emphasis on training support.
- Establish organizational structures at national level that enable SMEs, forest industry and timber trade organisations to work together to share information and market intelligence, and improve sectoral and organisational planning.

Ensure better access to finance for forestry enterprises

- Ensure that enterprises have sufficient trade credit to continue exporting during demand downturns. In the short-term governments should monitor the availability of trade finance for exporting enterprises to ensure that they have sufficient access to trade credit. Governments may need to provide alternate sources of trade finance for enterprises which are struggling to access finance from traditional sources.
- Provide SMEs with a wide range of credit channels and provide a range of financial incentive measures to reduce financing costs for SMEs.

Develop preparedness measures

- Assist forestry enterprises to strengthen their crisis management capabilities, and develop the ability to anticipate the impact that future crises may have on their business. Enterprises need to be able to establish early warning systems, and rapidly evaluate the benefits and risks of the various response strategies that are open to them.
- Undertake detailed reviews of the position and competitiveness of the wood products industries at country level with a view to developing long-term strategic plans which will improve the competitiveness of the wood products industries.

- Develop systems that will ensure that public and private sector organisations are able to access the necessary market intelligence to identify structural factors that can affect future markets, anticipate change and identify actions required to mitigate the effects of unexpected market changes.
- Consider the socio-economic implications of worker retrenchments and changes in worker hours and wages in the forestry sector during economic crises, particularly the effects on migrant workers. Ensure social protections for vulnerable workers.
- Develop better multi-stakeholder models to plan for contingencies and build system resilience against shocks to the system. Develop better public-private sector engagement in collaborative risk assessment and greater sharing of data around threats and vulnerabilities.

Develop internationally competitive forestry enterprises

- Assist SMEs in the forestry sector to adopt new technologies and access new markets. Encourage innovation to increase the core competitiveness of enterprises.
- Intensify educational and technical assistance programmes to SMEs to improve understanding of the implications of new environmental trade regulations and the technologies that can be applied to them.
- Facilitate the improvement of distribution channels, including the development of efficient transport and other infrastructure to assist tropical timber exporters in developing more efficient just-in-time delivery systems to customers.
- Create an enabling environment for the promotion of further domestic processing.

Recommendations for ITTO consumer countries

- Minimise the application of protectionist trade measures during global demand downturns and consider their full implications through the wood products value chain, which often cuts across multiple borders.
- EU countries to continue to work with ITTO producer countries through the FLEGT programme to develop VPAs to enable continued access to EU markets for legal and sustainable wood supplies.
- Ensure that green building, CSR and public sector procurement policies do not discriminate against tropical wood products and that their assessments are evaluated on a scientific and evidential basis.

Recommendations for regional organisations

- Develop regional multi-stakeholder task forces to consider intra-regional differences in risk exposure to demand downturns in the forestry sector and take collaborative actions to minimise risk.
- Support trade and investment initiatives relevant to improving the regional business environment for SMEs.
- Promote intra-regional trade through the organisation of timber trade fairs and exhibitions.
- Identify blockages and overcome barriers and impediments to enhance competitiveness, make businesses more profitable, help companies better manage inventories and lower costs.
- Strengthen regional cooperation and integration in addressing issues related to illegal harvesting and trade.

- Enhance the operation of integrated regional supply and value chains which reflect the way business is now being performed.

Recommendations for forest industry and trade associations

Strengthen associations and cooperation

- Strengthen capabilities and cooperation between trade and industry organisations in the forestry sector to facilitate strategic planning and the implementation of action plans to minimise market risk for sector during global economic crises.
- Cooperate in the development of systems for market intelligence gathering and analysis and sharing of information and statistics of relevance to the sector.

Develop marketing strategies to overcome reduced market demand

- Industry organisations can assist SMEs in re-examining marketing strategies and monitoring market share to maintain a strong position in existing markets, to maintain long-term growth, stabilise customer relationships and keep a watching eye on customer performance. Encourage SMEs to refrain from cutting marketing budgets during demand downturns.
- SMEs are encouraged to explore new markets and growing market share ahead of competitors, using market information and appraising the level of risk involved.
- SMEs are encouraged to make effective use of external resources, looking for collaborative research opportunities and to form strategic alliances with domestic or overseas companies to collaborate on technology transfer and training.
- Trade associations consider participation in market exhibitions and trade fairs to promote their products in regional markets.
- Larger enterprises consider improvements in productivity, product diversification and the development of specialised products for a range of specialist market niches and market destinations.

Develop internationally competitive forestry enterprises

Forestry enterprises are encouraged to:

- Effectively engage in ICT to improve processing efficiency, marketing and trade in timber and timber products.
- Invest in continuing productivity improvements to improve cost competitiveness.
- Develop in-company statistical systems and capacity for data collection, collation and analysis.
- Invest in increasing the overall quality of the workforce by upskilling and training of personnel, particularly for value-added processing.
- Pursue the production and trade in legal and sustainable timber as a means of differentiating their products for both domestic and export markets.
- Commit to the work of forest industry and trade associations, including membership to internationally recognized trade associations such as the IWPA, as a means of gaining market information, in particular evolving regulations and changes in policy in their export markets.
- Invest in cooperative, joint initiatives to promote trade in tropical timber.

1 INTRODUCTION

Background

The tropical timber sector was severely impacted by the global financial and economic crisis which stemmed from the US subprime mortgage crisis in 2007. The crisis triggered a sudden plunge in housing starts and consumer demand for tropical wood products in traditional markets, cancelled orders, depressed prices for tropical wood products and resulted in severe adjustments of the tropical wood processing industries in ITTO producer and consumer member countries. Although this economic crisis was the most recent of several economic slumps, it has highlighted the vulnerability and lack of preparedness of the tropical timber sector to respond to future global and regional economic crises.

The development of effective policy strategies in managing market change has been limited by a sub-optimal knowledge base of the factors driving change in tropical timber consumer markets and of the impacts of historical global and regional economic crises on the dynamics of the tropical timber trade and industries. The limited geographic and product diversification by tropical timber producers has further limited the market intelligence focus for analyses of the tropical timber trade. Tropical timber producers lack the capacity on an individual country basis to anticipate and manage the impacts of global changes in demand on their respective forest and wood products sectors. Prediction and management of market changes also requires collective knowledge sharing on global demand drivers and the impacts of strategic responses to global market shocks (including government policy responses such as incentives to forestry sectors and other remedial measures) as well as information on the experiences of other sectors during the economic crisis.

There is a need for tropical timber producers to improve their resilience to the threats resulting from future global and economic financial shocks by enhancing their capacity to anticipate, manage, and recover from global economic crises.

Objectives

The development objective of this project is to assist in sustaining a profitable, long-term international trade in tropical timber products from sustainably managed and legally harvested forests.

The specific objective is to assist in increasing the resilience of the tropical forest sector to the threats resulting from future global economic and financial shocks by enhancing the capacity of ITTO producer member countries to anticipate, manage and recover from global economic crises.

Scope

The scope of this project includes products included in the ITTA 2006 definition of tropical timber which means “tropical wood for industrial uses, which grows or is produced in the countries situated between the Tropic of Cancer and the Tropic of Capricorn. The term covers logs, sawnwood, veneer sheets and plywood”. This study investigates the impacts of the crisis across the value chain and therefore investigates products which are derived from these primary wood products. This includes a range of secondary processed wood products including furniture and parts, mouldings, windows, doors, decking products, and flooring. This study excludes wood fuel, pulpwood, pulp and paper products and reconstituted board products such as particleboard and MDF.

Methodology

Impacts of the recent and past global financial and economic crises.

A literature review, internet search and stakeholder consultations were conducted to assess firstly the macroeconomic impacts of the recent and past global economic crises, and secondly, the impacts of the crisis on the tropical timber sector. The study reviews quantitative time series data (before and following the recent crisis), studies, reports and other relevant qualitative information available as a basis for determining the extent of the impacts of the recent and past global financial and economic crises on tropical timber markets. It provides background information on the reasons for the recent global and economic crisis, overall impacts of the crisis on demand drivers, and an assessment of producer country vulnerability to external demand crises. The study analyses the impacts of the crisis on tropical timber demand, trade, prices and production in consumer and producer countries.

Impacts of change drivers on tropical timber demand

Two consumer case study markets – China and the EU - were chosen because they represented a contrast between emerging (China) and mature (EU) markets. Information from an extensive literature review of available information and consultations with relevant stakeholders was consolidated to assess the underlying factors determining demand for tropical timber products in the case study markets, the demand impacts of the global economic crisis, and key factors which have the potential to contribute to the vulnerability of the tropical timber sector.

Impacts of regional and national policy responses and other remedial measures in tropical producer countries

A case study approach has been used to critically assess the extent and impacts of the recent crisis at a producer country level. The case studies assess the impacts of regional and national policy responses and other remedial measures on tropical timber production, trade and investment. Three producer case study countries – Brazil, Ghana and Malaysia – were selected from each of the three ITTO producer country regions (Asia-Pacific, Africa and Latin America/Caribbean). These countries were chosen because they were likely to have employed a range of different responses and interventions, they represented a range of different risk profiles, and sufficient information was likely to be available on which to provide a reasonable basis for analysis. A structured list of key questions was developed to guide primary data and information collection through consultations involving key stakeholders. A selection of stakeholders (government, wood products industry trade associations, wood processors, wood product export companies, NGOs, regional organizations) were interviewed in each case study country. The impacts of the crisis were assessed at the following levels: forests, wood processing and forest industries, research and development, markets, and socio-economic impacts.

The results of the stakeholder interviews, together with supplementary in-country data and information from a review of available literature, were used to determine the following:

- the impacts of the recent crisis across the supply chain, at country level

- policy responses and other remedial measures to the crisis employed at regional, government and private sector levels.
- an assessment of the effectiveness of those policy responses and other remedial measures in mitigating the adverse impacts of the crisis at market, processing and forest levels.
- determination of risk factors that will expose the country to market volatility, and possible actions that could be implemented to minimise the effects of these factors on the country's tropical forest industries (and effectively move the country from "high" to "low" risk).

Identification of success strategies from other sectors

Literature and internet searches and relevant stakeholder interviews were used to review available information on the performance of other sectors/industries (wood and non-wood) in responding to the global financial and economic crisis, identifying successful case studies and success strategies employed by those sectors. The sectors examined include temperate hardwoods and softwoods, wool, dairy and aluminium. These sectors were chosen because they had experienced a global downturn in demand during the crisis period, involve trade and shipping, utilise raw materials which can be further processed following export, and information was available on sectoral responses to the crisis. The review identifies some of the strategies employed during demand downturns and their success in mitigating the effects of demand crises.

Report structure

This report is structured as follows:

Chapter 2 reviews the macroeconomic impacts of the global financial and economic crisis, with particular focus on important factors affecting tropical timber supplying and consuming countries and regions. It considers macroeconomic demand drivers, including GDP, exchange rates, employment and labour, investment, energy and transport, supply chains, global country competitiveness, trade protectionism, and regional economic cooperation. It provides an assessment of ITTO producer country vulnerability to the crisis.

Chapter 3 reviews the impacts of the global financial and economic crisis on the tropical timber sector. This chapter provides an analysis of the impacts on tropical forests, production, trade and prices, with a particular focus on the impacts on small and medium-sized enterprises.

Chapter 4 presents consumer case studies of two markets - China (Section 4.1) and the EU (Section 4.2). The chapter analyses tropical timber consumption drivers, market impacts and country responses to the crisis, and future market challenges.

Chapter 5 presents three producer case studies - Brazil (Section 5.1), Ghana (Section 5.2) and Malaysia (Section 5.3). It provides: a critical assessment of the extent and impacts of the crisis at country level; the impacts of policy responses and other remedial measures on production, trade and investment; a determination of the risk factors that could expose the sector to external demand shocks and possible remedial measures that will minimise risk.

Chapter 6 examines the performance of other sectors and industries in responding to the financial and economic crisis. It reviews steps taken by governments and industry associations in non-tropical producer countries to strengthen their sectors, improve market access and create opportunities for

individual companies. The review also looks at how other primary commodity industries responded to the crisis, including wool, dairy and aluminium. The chapter considers the following strategies and their effectiveness in mitigating risk during demand downturns: economic reform; enhancing the value proposition; innovation and new products; new markets; promotion; distribution; financial and operational strategies.

Drawing on information from the previous chapters Chapter 7 sets out a set of key recommendations for ITTO, regional organisations, ITTO member governments, and tropical timber trade and industry organisations.

2 MACROECONOMIC IMPACTS OF THE GLOBAL FINANCIAL AND ECONOMIC CRISIS

Background on the global financial and economic crisis.

The global financial crisis, which started in mid-2007 in the United States and spread rapidly to other parts of the world, was the greatest shock to the world financial system since the Great Depression in the 1930s. A subsequent global recession, which reached its worst severity in 2009, resulted in declining economic growth in many tropical timber consuming countries, rising unemployment, and large declines in international trade and capital flows.

Background on the causes of the global financial crisis is examined in detail in a number of publications (EC 2009; Economics of Crisis 2011; IMF 2009; IMF 2010; IMF 2011; Swee Hock and Wong 2010; Swee-Hock 2011; Nilsson 2009,UNECE 2009; World Bank 2010; World Bank 2011a; UNCTAD 2011b; UNCTAD 2011c). During the decade prior to the crisis the world economy had experienced strong and sustained growth, which had involved the integration of emerging and developing economies into the global economy. However, this unprecedented growth had been driven by credit excesses, leverage and deregulation of financial markets. The crisis resulted from a combination of macroeconomic and microeconomic market failures which were both due to inadequate governance and a failure by market participants to understand risk (UNECE 2009). The main causes of the crisis included (1) a long period of loose monetary policies coupled with low interest rates in developed economies which fuelled excessive financial speculative activities; (2) excessive “innovation” in the financial sector, including a proliferation of unsound financial products and complex financial instruments; (3) inadequate regulation of banks and financial institutions, particularly investment banks; and (4) failure of credit rating agencies in rating the many complex debt instruments correctly (Swee-Hock and Wong 2010).

The implications of these failures became evident following the sub-prime mortgage crisis in the United States. This crisis emerged following a period when the US government had actively encouraged home ownership while mortgage loans offered by financial institutions to low and middle-income home buyers were easily available, including to borrowers who did not satisfy the prime credit requirements. A boom in subprime lending occurred, fuelling an escalation in house prices, new housing construction and consumption. Meanwhile, securitization of mortgage loans by banks – the repackaging of mortgage loans as Collaterized Debt Obligations (CDOs) to be sold to investment banks - had become common practice. In 2006, when the Federal Reserve Bank increased interest rates to combat growing inflationary pressure many home owners defaulted their mortgage payments, leading to foreclosures becoming increasingly common, often at values lower than at the time of purchase by the borrowers. The value of the CDOs declined significantly, leading to massive losses and bankruptcies incurred by the holders of CDOs. Insurance organizations also suffered losses by participating in guarantees to reimburse investment banks for losses from CDOs based on mortgage loans. Investment banks and non-bank financial institutions were overleveraged and overexposed, creating systemic risk for the US financial sector.

By late 2008, as major banks sought to reduce their exposure to potential bad loans, and non-financial institutions started to unwind their debt positions, a severe credit crunch ensued. The collapse of the important investment bank Lehman Brothers in September 2008 created financial disruption in the USA and other countries where Lehman Brothers had a presence, with the

interconnectedness between major banks and financial institutions leading to failure of the banking system. The global financial crisis transformed into a global economic crisis characterised by major imbalances in global financial, housing and commodity markets, declining business and consumer confidence and exceptional uncertainty regarding the global financial and economic outlook.

With interdependent, globalised markets, the negative impact of the sub-prime problem quickly spread to EU countries through a variety of channels, including to countries which had close links between major financial institutions and to countries which had their own bursting housing bubbles (e.g. Ireland, Spain and the UK). As the US economy deteriorated and shrank, unemployment rose sharply to unprecedented levels causing more instability and declining consumer confidence. US construction activity, particularly residential housing, slowed markedly and reached historic lows, continuing to decline until late 2009. Developing countries with strong trading links to the USA and Europe were affected severely as demand for their products collapsed, commodity prices dropped and external financing constraints tightened.

Effects on economic growth

In the decade to 2008 the global economy had experienced its strongest sustained period of growth since the early 1970s. In the fourth quarter 2007, world real GDP growth started to slow following uncertainty in global financial markets originating from the US subprime mortgage crisis. Emerging risks were that the on-going turmoil in financial markets would reduce domestic demand in the advanced economies and would create significant spillovers into emerging markets and developing economies. In 2008 world GDP growth slowed substantially and further plunged in 2009 following a dramatic worsening of the global financial crisis, reaching the lowest rate since World War II.

GDP growth in ITTO consumer countries

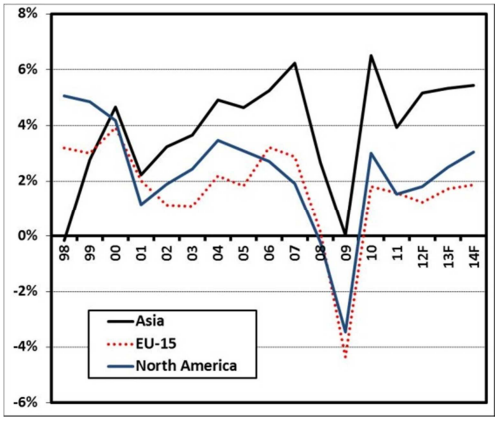
The impacts on GDP growth were most severe in the developed economies, where GDP growth had contracted to -0.3 percent in 2008 and -3.6 percent in 2009. IMF estimates of GDP growth in ITTO consumer regions (including China) from 1998 to 2011, and forecast to 2014, are shown in Figure 2.1.

The USA was initially most affected by the direct impacts of the global financial crisis that originated in its own subprime mortgage market. GDP growth slowed in the latter part of 2007 as corrections in the residential housing market began to have an impact on the wider economy. While US export growth was strong in the first three-quarters of 2008, buoyed by high commodity prices and a weakening US dollar, the economy contracted significantly in late 2008 and 2009 as consumer and business confidence declined. US household consumption represents a significant component of economic activity and its contraction reflected the continuing downturn in the housing market, falling house prices, the weakening equity market and rising rates of foreclosures (Prior to the crisis, house price appreciation had increased consumer wealth, allowing consumer credit expansion and leading to increased consumer spending). Significantly, the ratio of household net wealth to GDP dropped markedly. US consumers were further pressured by rising unemployment, following a pre-crisis period of relatively low unemployment.

These developments began to have marked impacts on US disposable incomes and consumer demand levels and US housing starts reached a record low in 2009. In 2010, supported by an aggressive US fiscal stimulus package, GDP growth accelerated as financial conditions eased,

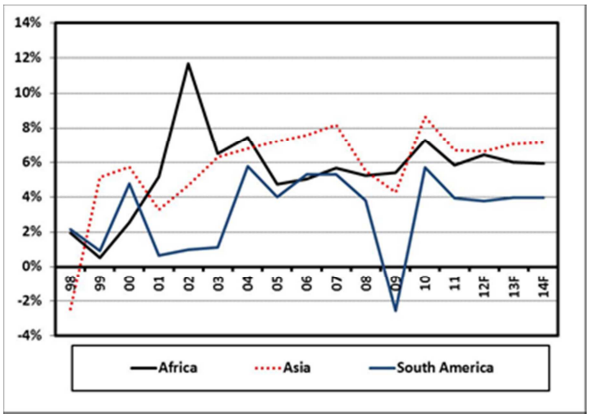
supporting improved consumer confidence and an increase in consumer spending, despite higher commodity prices. However, depressed housing markets, which were a key aspect of the crisis, continued to weigh down the pace of recovery and housing starts have remained at depressed levels to date. US economic growth in 2011 was higher than anticipated and IMF (2012) projected growth to be 2 percent in 2012 and 2.5 percent in 2013, mainly reflecting on-going weakness in the housing sector, a weak labour market and also potential spillovers from developments in Europe.

Figure 2.1. ITTO Consumer Regions. Real GDP Growth 1998-2014



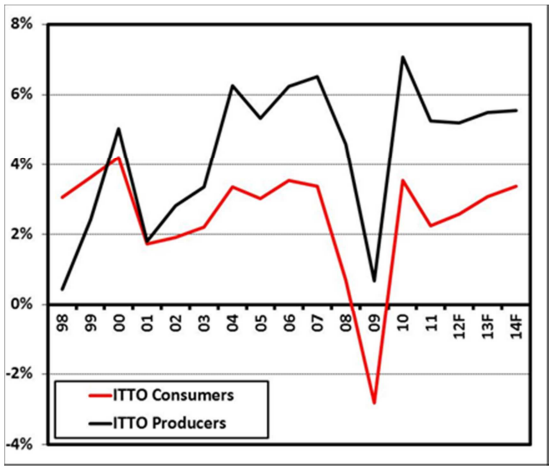
Source: IMF 2012, F=forecast

Figure 2.2. ITTO Producer Regions. GDP Growth 1998-2014



Source: IMF 2012, F=forecast

Figure 2.3. ITTO Producers and Consumers, Real GDP growth 1998-2014



Source: IMF 2012, F=forecast

Until 2007, EU countries had experienced their strongest economic performance period since 2000, with growth in 2007 being driven by an increase in investment spending in response to high regional and global demand for machinery and equipment, increased construction activity and robust exports from the region. GDP growth began to slow marginally in late 2007 in response to continuing appreciation of the euro, higher interest rates and as economic contagion began to spread from the US sub-prime mortgage crisis and global financial market turbulence. In 2008 and 2009, GDP growth contracted sharply, reflecting a sharp collapse in external demand, the impact of housing market

corrections in some Member States (which began later than in the USA) and an intensification of financing constraints. Germany, France and Italy experienced a rapid decline in industrial production as the strong euro and weakening global demand impacted their export sectors. Domestic consumption and consumer confidence fell dramatically in Spain, Ireland and the United Kingdom during this period and there were early indications that the downturn would be more pervasive across the euro area than just being concentrated in previous construction “boom” countries.

Several European countries launched fiscal stimulus packages with measures to specifically assist the construction sector and there were signs of economic recovery in the EU in 2010, although the pace remained uneven between Member States. Germany, for example, benefited from expansion in exports, strong domestic demand and a rebound in investment, while Spain, Ireland and Portugal faced renewed financial turbulence with high public deficits forcing further austerity measures, a contraction in private and public spending and severe structural unemployment problems. Italy faced long-standing competitiveness problems (including in the tropical wood processing sector) which constrained export growth. In the United Kingdom, fiscal consolidation and reduced public spending dampened domestic demand and many other European countries were affected by lack of domestic demand, reduced public investment and reassessment of ongoing public projects.

In 2011, a sovereign debt crisis emerged in the euro area periphery with the buildup of excessive public and private sector imbalances in several EU economies, with many European banks carrying significant exposure to the debt of highly indebted European countries. Fears about economic contagion and a default and exit by Greece from the euro area intensified, causing market uncertainty. A massive policy package for Greece eased fears in the short term, although the implementation of the required fiscal austerity measures caused severe unemployment problems and intense political unrest. By early 2012, financial market stress in the EU had escalated further, triggered by increased political and financial uncertainty in Greece, and banking sector problems in Spain, with a risk that large financial and real spillovers to other regions may cause major political and economic shocks.

IMF (2012) has forecast growth divergences in the region, with sharp recessions forecast for the euro area crisis economies - Greece, Ireland, and Portugal – although economic activity also contracted markedly in Italy and Spain during late 2011. Growth in other advanced economies in Europe is projected to rebound during 2012, largely because of improving global demand and strengthening prospects in the euro area core. Many of these economies avoided large pre-crisis imbalances, and balance sheet pressure on households and governments has been weaker. This has helped cushion the spillovers from the euro area crisis. In contrast, growth in the United Kingdom, where the financial sector was hit hard by the global crisis, will be weak in early 2012, before recovering there as well. Strong regional trade and financial linkages imply a weaker outlook for the rest of Europe (IMF 2012).

In contrast with North America and Europe, the Asian economies (producer and consumer) have outpaced other regions and have led the recovery from recession (with the exception of Japan), supported by strong export performance despite slowing exports to the USA and Europe, and growing domestic demand. The strong economic rebounds across the region have been driven by trade normalisation following its collapse in 2008, a resumption of capital inflows into the region, large and speedy implementation of stimulus packages and a recovery of China’s domestic demand.

Increased intraregional trade has also partially offset the weakness in final demand from advanced economies although a substantial proportion of final demand for Asian exports still comes from outside the region, suggesting a continued need to redirect towards domestic sources of growth. A large proportion of Asia's fiscal stimulus packages during the global economic crisis were directed to public infrastructure projects (which helped to offset some declines in residential and non-residential building activity), creating employment and providing subsidies to small businesses.

China's economy continued to grow at very high levels during the global crisis period although GDP growth decelerated from over 11 percent in 2007 to 9 percent in 2008. China's export trade began to experience a sharp decline towards the end of 2008, in response to the abrupt downturn in global demand for imports, the US and EU being the two most important markets for China's exports of finished products. China's trade continued to decline in 2009, reflecting lower commodity prices, and a chain reaction in the regional production network from a negative shock in external demand (Swee-Hock and Wong 2010).

In response to government concerns about declining export growth, China's economy was boosted by government fiscal stimulus, adjustments to export tariff rebates to support export-oriented businesses, and domestic stimulus packages to encourage residential purchases of single family homes and apartments. As a result of these measures China's exports were able to quickly capitalize on a recovery in export markets, and the stimulus to domestic consumption resulted in a rise in domestic demand in 2010, with growth remained strong in 2011-2012 with the drivers of growth shifting from public to private demand. China has experienced rising domestic costs, including wages, which has caused rapid growth in manufacturing in other Asian countries – in particular Vietnam, Malaysia, Indonesia, and India. However, IMF (2012) argues that this has not had a large impact on China's overall competitiveness. Several developments have contained the impact of rising domestic costs and facilitated productivity improvements, including relocation of industries away from the coastal provinces to lower cost inland areas, economies of scale associated with a growing domestic market, and the continuing low cost of key inputs (land, water, energy, capital). Chinese demand has provided a buffer to the region's commodity exporters, and domestic demand remains strong in some parts of developing Asia.

Many analysts note the considerable risk associated with uncertainty about the pace of structural change in China's economy and its ability to reduce the sizeable current account surplus. This pace has resulted in global imbalances, with IMF (2012) stating that "the rapid growth of China's export market share during the past decade was the result of a variety of factors that have largely run their course, including the beneficial impact of World Trade Organization accession, strong growth in manufacturing productivity, large-scale relocation of global production facilities to China, and low production costs. Continued export growth will involve a shifting product mix toward higher-end manufacturing, a process that will face headwinds from the slow recovery in global demand. In addition, existing markets will become saturated, there will be fewer opportunities for productivity gains from technology transfer, and fewer overseas production facilities will relocate to China".

Government economic policy is now focusing on growth which is driven more by domestic consumption than exports and investments, by raising household income, boosting consumption and facilitating expansion of the service sector. However, the construction sector has slowed because of tightening measures directed at the property market following government concerns

about housing market speculation. In Shanghai, for example, commercial real estate and housing sales dropped 15.9 percent year-on-year in the first four months of 2012 as government measures continued to cool the market. Even so, continuing urbanisation and steady growth in incomes is expected to underpin strong demand for housing although trend growth rates are likely to slow (EIU 2011).

Japan's GDP growth contracted significantly in 2008 to -0.7 percent, and -6.3 percent in 2009, as commodity prices rose, and private consumption and external demand weakened. Although Japan is a major tropical wood products importer, economic commentators noted that Japan's economy had been overly dependent on exports with net exports accounting for almost half of Japan's total GDP growth in the five years to 2007. Until 2007, exports had also benefited from an undervalued yen relative to other major currencies and from high global demand, particularly in the USA. (Japan had experienced an economic shock – 'asset bubble' - in the late 1980's which had originated from domestic causes and had been contained within Japan, although contributed to slow growth to date). As the yen appreciated against other major currencies in 2008, and demand for Japan's high-value products declined, industrial output and total exports plunged - industrial production declined by 38 percent in the year to February 2009.

In 2010, large fiscal stimulus and a rebound in exports resulted in Japan's growth reaching 4 percent, one of the fastest of the advanced economies. However, following the devastating earthquake and tsunami in 2011, growth slowed considerably although reconstruction spending in the aftermath of the earthquake and tsunami is expected to boost growth to 2 percent in 2012. In addition to the global economic crisis, natural disasters such as the Japanese earthquake and the floods in Thailand in 2011 have resulted in significant market demand shocks, creating supply chain problems and demand swings for various goods, including tropical wood products. Experience from this, and previous natural disasters (WEF 2011a), indicates that:

- initially there is a strong negative impact on private domestic consumption and production levels, although demand then rises for rebuilding;
- exports decline and are more affected than imports;
- disruptions to external trade do not last for a long period and trade resumes; and
- GDP growth declines initially and then bounces back.

However, the new economic crisis in Europe and problems regarding energy supply may dampen Japanese economic activity and exports. Growth is expected to remain subdued at 1.75 percent in 2013, reflecting the weak global environment and a decline in reconstruction spending (IMF 2012).

GDP growth in ITTO producer countries

Economic growth in the emerging market and developing economies has outgrown that of the advanced economies since 1990, although spillovers from the recession in developed economies resulted in real GDP growth slowing considerably in 2008. During this period growth was more resilient in commodity-exporting countries which were still benefitting from high commodity prices. Importantly, many emerging economies were cushioned from the full impact of the economic shock because they had adopted stronger economic frameworks than in the past – particularly countries in the Asian region which had regulated their financial sectors in the aftermath of the Asian economic crisis at the end of the 1990s. By contrast, those countries with the strongest links to the USA and

Europe slowed markedly. At the height of the crisis there was concern at country level that many ITTO producer countries would not have sufficient means to stimulate their economies, with restricted access to foreign financing and a risk of growing protectionism that would restrict their access to export markets where demand had already been reduced.

ITTO producer countries in the Asian region have experienced relatively high population growth and growing affluence and until 2009, significant GDP growth rates since the Asian economic crisis in 1998. Asian producer countries were impacted by the downturn in global demand in 2008 and 2009 although with the exception of India, Asian countries have had low public debt to GDP ratios, allowing them more room for fiscal stimulus than other emerging economies.

The global economic crisis had a relatively limited impact on Indonesia's economy and labour market (IILS 2011). Before the onset of the crisis, GDP growth in Indonesia averaged about 6 percent per annum, driven by robust domestic demand, increased private consumption and high investment rates due to infrastructure and business climate improvements. Unlike the period preceding the Asian economic crisis in 1997-1998[1], the financial sector was on a relatively sound footing with stricter financial market regulation. Indonesia also introduced monetary and fiscal measures which reinforced domestic demand. In comparison with other Asian economies whose stimulus measures were mainly targeted towards infrastructure investments, Indonesia's efforts targeted tax cuts and improvements to enhance business competitiveness and boost incomes. Infrastructure investments were comparatively low, at less than 11 percent of the stimulus package compared with more than 37 percent in other developing and emerging economies – although this had already been a key strategy for improving Indonesia's investment environment in the pre-crisis period. In Southeast Asia, the post-crisis rebound in 2010 was faster than the recovery from the Asian financial crisis in 1997/1998. Expansion in the ASEAN-5 economies (Indonesia, Malaysia, the Philippines, Thailand and Vietnam) is expected to be led by Indonesia in 2011-2012, with predictions of strong consumption and a recovery in investment (IMF 2012).

India's exports represent a relatively small share of GDP, limiting its immediate exposure to the impacts of the global demand downturn although the economy was affected by the decline in investment by foreign investors, which had been significant. Although GDP growth declined in 2008 and 2009, it remained impressive and rebounded strongly in 2010, although FDI continued to decline sharply. Growth is expected to moderate due to monetary policy tightening, stalled reforms, and electricity shortages which have cut into investment activity, although growth will remain high, mainly driven by investment in public infrastructure, although inflation pressure is expected to remain high.

In Latin America/Caribbean producer countries, GDP growth decelerated rapidly in 2008 and 2009 as tight financial conditions and weaker external demand impacted on economic growth, with growth in Brazil decelerating sharply because of falling commodity prices and declining exports. The decline in exports from Brazil, the regional giant, can be attributed to the appreciation of the Brazilian

[1] The origins of the 1997-98 Asian economic crisis differed from the 2008 global financial crisis. The Asian crisis, originating in Thailand, was triggered from within the Asian region, and concerned financial market failure, exchange rates, the problem of short-term debt, capital mobility and political disturbances in the region. In contrast, the 2008-crisis was triggered externally (to ITTO producers) with its origins in the sub-prime crisis in the US.

currency relative to the US dollar, in addition to the negative effects on export demand as a result of the global economic crisis. Growth decelerated faster in the Latin America/Caribbean region than in other ITTO producer regions, reflecting stronger trading linkages with the USA. Mexico and the Central American countries are characterized by strong real linkages to the US economy (trade and remittances) and relatively high degree of openness. The South American sub-region as a whole is relatively less dependent on trade relationships with the United States (or other advanced economies). Commodities represent a very high share of their total exports and a number of these countries have important trade linkages with each other, particularly with Brazil. While Mexico's economy and policy frameworks are more similar to those of the more financially integrated countries in South America, countries in the Caribbean sub-region are generally highly dependent on tourism from the United States and other advanced economies.

In 2010, regional growth rebounded rapidly, reflecting rising commodity prices, robust demand in China and a recovery in exports to other destinations, resulting in strong capital inflows. The recovery was more rapid in South America than in Mexico and Central America which is more dependent on US import demand and remittances from migrant workers, and in the Caribbean where growth reflects tourism's link to employment growth in advanced economies, particularly the USA. Most of the region benefitted from strong domestic demand in Brazil. Growth for the Latin America/ Caribbean region is projected to slow in 2012, due to renewed tensions in global financial markets and risk aversion since May 2012, high oil prices, and marked declines in commodity prices.

GDP growth in the ITTO African producer region was relatively unaffected by the global downturn in 2008 and 2009, with most countries having limited foreign ownership of banks and stringent controls on foreign exchange, thus limiting their exposure to the sub-prime market which had caused havoc in other regions. Several countries experienced reduced export demand, lower remittances and foreign direct investment which slowed GDP growth. However, regional domestic demand growth remained robust and a gradual reorientation of exports towards faster growing regions such as Asia cushioned these impacts at a regional level.

In 2011, the African region was one of the least affected by recent financial turmoil and deterioration in the global outlook, expanding by about 5 percent in 2011 (IMF 2012). The region's resilience reflects a number of factors, including its relative insulation from financial spillovers from the euro area, diversification of exports toward fast-growing emerging markets (particularly China) which has reduced the region's trade exposure to Europe, and high commodity prices which have benefited the region's commodity exporters. Unrelated to the global economic downturn, political unrest in Cote d'Ivoire dampened GDP growth in 2011.

Effects on Global Trade

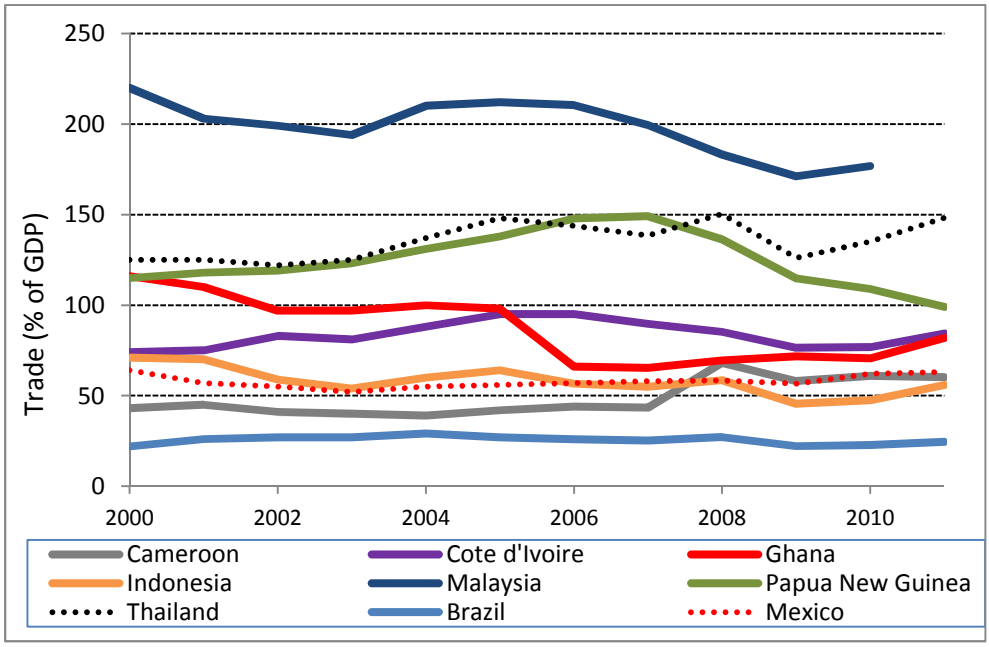
World trade volume dropped significantly in 2008 and 2009, contracting by -11.3 percent in 2009, the largest one-year decline in trade since the Second World War. Trade rebounded sharply in 2010, as firms restocked their inventories. However, the revival of trade was uneven among countries, with significant growth occurring in the Asian region, particularly China and India, while growth in developed countries was significantly slower/non-existent.

Dependence on exports

For many ITTO producer countries, the transmission mechanisms of the crisis were external, notably through exports, with GDP growth in many countries being dependent on exports. Within the Asian region, countries that maintained or even increased their share of domestic demand in GDP were in a better position to withstand the global economic downturn (Swee-Hock and Wong 2010). A higher proportion of Asia-Pacific producer countries have relatively high trade in GDP ratios, particularly Malaysia, Cambodia, Thailand, PNG and Vietnam (although not an ITTO producer country) (Figure 2.4). An exception is Indonesia, where domestic demand accounts for about two-thirds of GDP. However, Indonesia's proportion of exports in GDP may have been attributed to several supply-side issues which had already made Indonesia's exports less competitive and its growth relatively limited (Swee-Hock and Wong 2010). In terms of mitigating the demand risk from global downturns, this highlights that both domestic demand and exports are important in GDP growth and that policies need to focus on a balance between exports and the domestic market.

In the African region, Republic of Congo and, to a lesser extent Gabon, have had relatively high trade in GDP ratios and in the Latin America/Caribbean region, Panama and Honduras are the only countries with similar ratios (Appendix 1).

Figure 2.4: Trade as a % of GDP, selected ITTO producer countries, 2000-2011



Source: World dataBank

Direct trade links between ITTO producer countries and the highly indebted European countries has generally been regarded as a weak source of contagion because their market size is generally small, although African countries (including Cameroon) are regarded as vulnerable because of links with Greece, Italy, Portugal and Spain (the latter three being significant in the European tropical wood products trade) (World Bank 2012). With integrated supply chains, more producer countries are being affected by contagion if they are involved in other stages of the production networks.

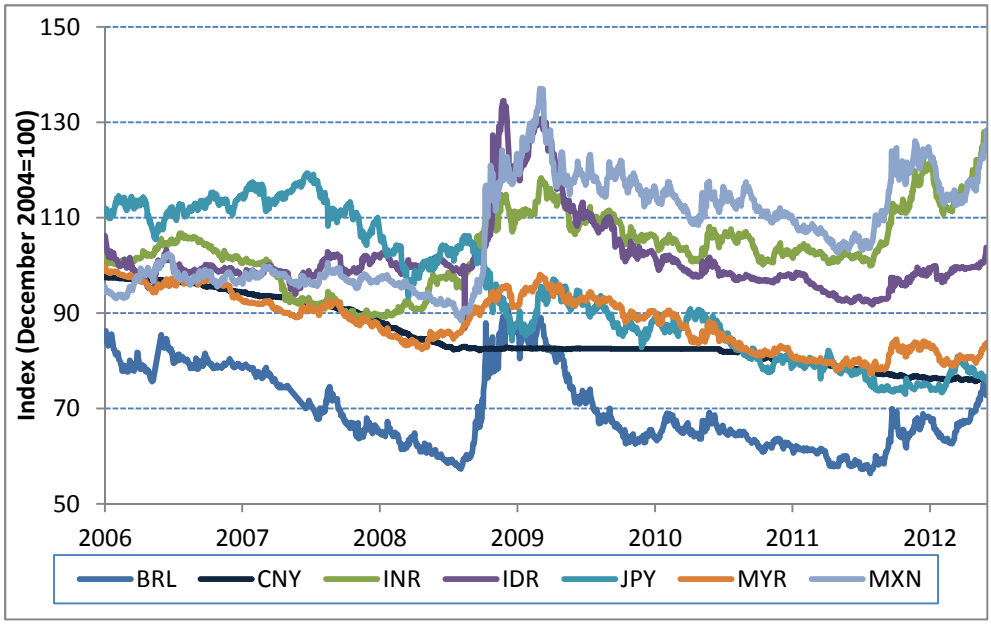
Global trade imbalances

A major global economic risk pre-crisis was the persistent large global trade imbalances, particularly between China and the USA which, in addition to food price rises, threatened a rise in protectionist trade measures. One of the impacts of the crisis has been a narrowing of trade imbalances with much of the decline attributed to a fall in the US trade deficit and in China's trade surplus following the financial crisis. In the US, the bursting of the housing bubble saw spending levels fall and the US personal savings rate rise, resulting in a slowing of import growth. At the same time, China's surplus narrowed reflecting reduced high-income import demand, but also a post-crisis growth strategy in China that has emphasized domestic sources of growth, notably investment, which has raised imports faster than exports.

Effects on Exchange rates

Figure 2.5 shows exchange rate movements for selected producer and consumer countries for the period 2006 to 2012. Exchange rate movements have significant effects on the relative competitiveness of tropical wood products exports from ITTO supplying countries, depending on the currency in which the products are being traded.

Figure 2.5. Exchange rate indices, selected ITTO producers and consumers, January 2006-June 2012



Source: IMF. Note: Brazilian real (BRL), Chinese yuan (CNY), Indian rupee (INR), Indonesian rupiah(IDR), Japanese yen(JPY), Malaysian ringgit(MYR), Mexican peso(MXN)

Until 2008, the dollar and yen continued to appreciate in real terms, with the strengthening of the yen particularly pronounced, while the Brazilian real and Indonesian rupiah experienced significant depreciations. Even though the US was at the epicentre of the crisis, at the height of the crisis the dollar appreciated as part of a global flight to safety. The global economic crisis led to the largest historical drop in capital flows from developed to emerging market economies, putting pressure on currencies to depreciate in response to capital outflows. When cross border financial flows from advanced to emerging economies picked up in early 2010 and 2011 this brought with it some real effective exchange rate changes among advanced economies relative to pre-crisis levels, notably a depreciation of the US dollar, and appreciation of currencies in the emerging economies, although

only limited realignment in emerging market economies with large surpluses (notably China). Other Asian market surplus currencies (for example the currencies of Malaysia, Thailand, and Rep. of Korea) were also considered to remain undervalued (IMF 2011). By contrast, Latin American currencies have typically appreciated in real effective terms raising competitiveness concerns, for example, in Brazil. The real value of the US dollar has fallen to levels last seen in the 1970s, posing risks to the global economy.

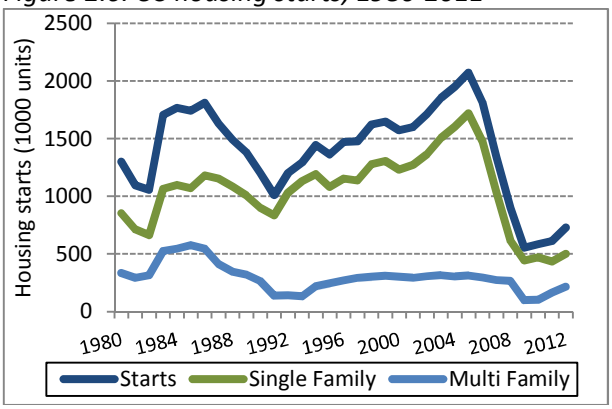
Effects on housing and construction

The demand for primary and secondary wood products, including those of tropical origin, is a derived demand, driven by residential, non-residential and public construction activity, and by consumer wealth. The global housing and construction market is a significant end use sector for tropical wood products. Construction activity in the US, the EU and Japan is indicative of global construction trends in important tropical timber consumer markets.

In the US, housing price corrections relating to the sub-prime mortgage crisis led to housing starts plunging, reaching record lows in 2009 (Figure 2.6). The decline in house prices also led to reduced consumer spending as credit expansion had been made possible by appreciating house prices. Between the peak of 2006 and May 2011, existing US home prices fell by about 41 percent, resulting in foreclosed homes and housing starts at levels not experienced since the Great Depression (UNECE 2011). Depressed housing markets, which were a key aspect of the global economic crisis, continue to weigh down the pace of economic recovery in the US and unemployment and underemployment remain high. US residential housing starts remained at depressed levels in 2011 and 2012. The US Bureau of the Census estimated a revised seasonally adjusted annual estimate of 746,000 starts in July 2012, considerably less than the high in 2005 at 2.16 million starts. New housing starts have been competing with the supply of both existing homes and foreclosed homes on the market, and the size of new homes has reportedly been dropping. Although there were signs that single-family housing starts may pick up in 2012, this hinged on sustained employment growth; the risks of the broader economy weakening could slow the housing rebound. (Joint Center for Housing Studies of Harvard University 2012).

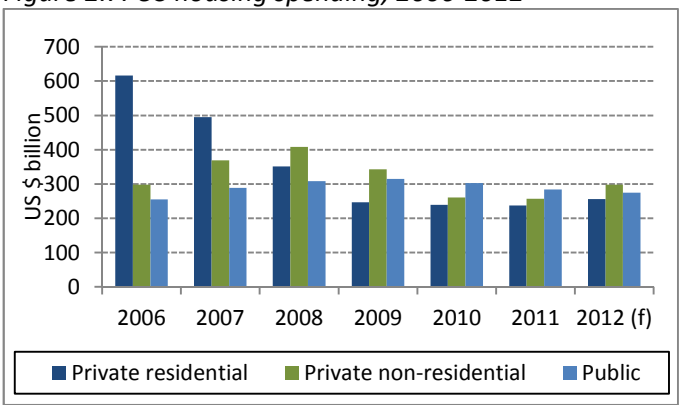
With housing starts at a record low, spending on private residential construction fell significantly between 2006 and 2009, although public sector construction spending increased and home remodelling activity picked up in 2010 (Figure 2.7).

Figure 2.6. US housing starts, 1980-2011



Source: US Bureau of the Census
Note: seasonally adjusted annual rates

Figure 2.7. US housing spending, 2006-2012

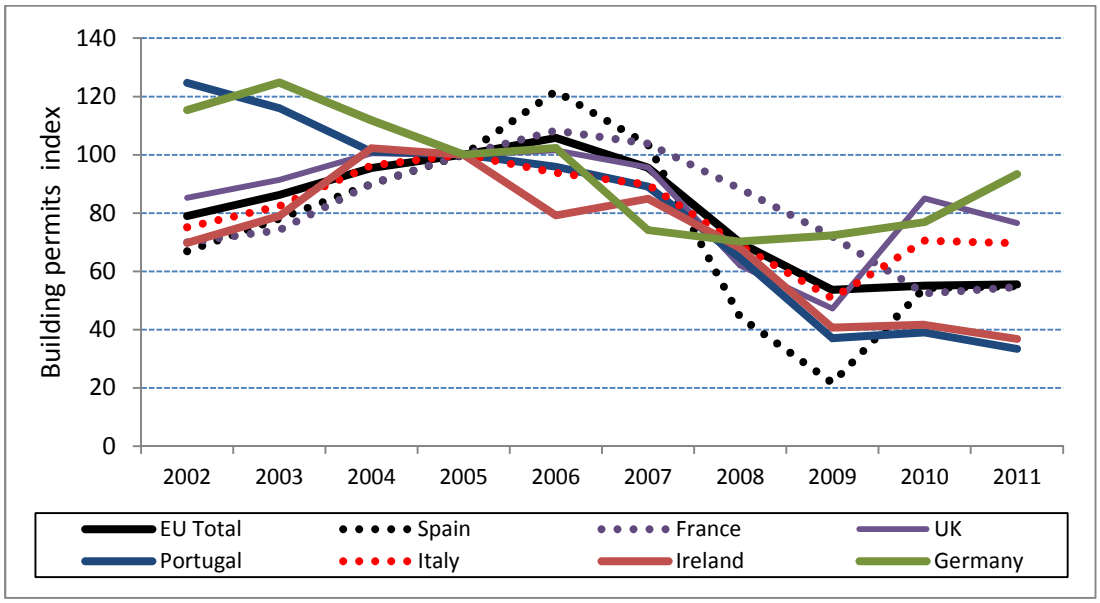


Source: US Bureau of the Census
Note: f=forecast

The global correction in residential real estate markets following the US sub-prime mortgage crisis generated large declines in house prices and construction activity in a number of economies, with significant house price declines recorded in 2009 in the Baltic economies, Iceland, Singapore, the United Arab Emirates, Spain and the United Kingdom (IMF 2009), and other economies facing substantial risk from house price corrections. Global housing activity fell, with median housing permits showing a median annual decline of about 35 percent in the first quarter of 2009 (IMF 2009). With the residential housing bust and the severe global economic downturn, commercial real estate markets also declined as demand for office space and retail/industrial buildings dropped significantly.

In the EU, activity in all construction sectors declined after the recession in 2008, although non-residential construction and civil engineering were less affected. New housing starts (single and multi-family) followed the same trend as the US, falling from a high of 2.38 million homes in 2006 to about 1.1 million in 2009 (Euroconstruct). Trends in building permits for selected EU countries over the crisis period are shown in Figure 2.8.

Figure 2.8. EU building permits index, selected EU countries, 2002-2011



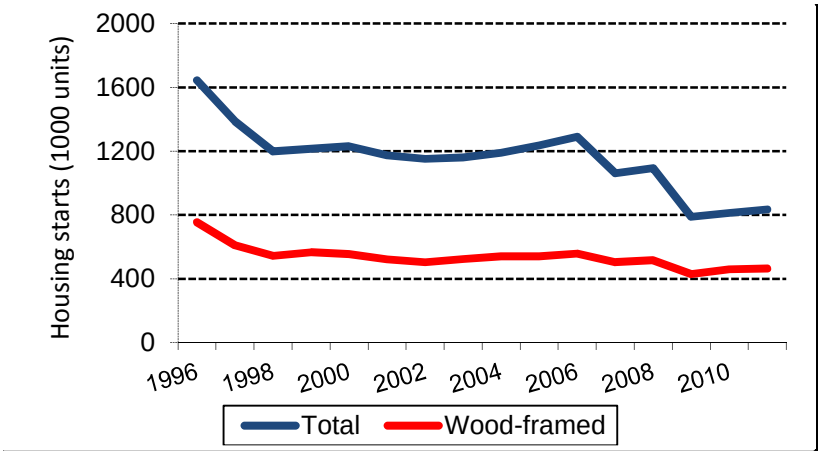
Source: Eurostat. Note: Annual data index 2005=100

Nearly 75 percent of all housing construction in the EU is in five countries – France, Germany, Italy, Spain and the UK. With the exception of Switzerland and Poland, all EU countries experienced negative construction growth, with the greatest declines in construction output being Spain and Ireland. The collapse in Spain's housing market – which accounted for 20 percent of EU construction activity in the boom period – was the largest contributor to the decline in construction activity. Construction output also declined very strongly in the United Kingdom (by 12.6 percent) which is an important tropical timber consumer market. As in the US, EU homeowners had overleveraged home mortgages as a source of credit, creating financial stresses when housing price corrections occurred.

To counteract the economic downturn, several European countries launched fiscal stimulus packages with measures to specifically assist the construction sector. However the phasing out of stimulus packages, along with the required consolidation of public finances, negatively impacted public construction activity in some European countries in 2011. In 2012, the euro crisis threatened a significant housing recovery in the region, particularly in Greece, Ireland, Portugal and Spain.

Japan's residential housing starts declined sharply in the last quarter of 2007, although this was due to poor implementation of the new Building Standard Law in mid-2007, the new rules intended to crack down on the falsification of earthquake resistance data for building. Although the Japanese housing industry had adjusted to the new rules in 2008, and starts increased marginally, by 2009 housing starts dropped to less than 1 million units, reflecting weakening of the domestic economy, rising unemployment and declining household incomes. Housing starts increased marginally in 2010 as the economy recovered. Reconstruction for the earthquake and tsunami disaster started in May 2011 and housing starts also became active supported by measures to improve house acquisition such as a housing eco-point system and mortgage tax breaks. However, after September 2011, housing starts decreased due to a suspension of those assistance measures and will also be affected in the long-term by a declining population and ageing workforce, with a reduction expected in household formation.

Figure 2.9. Japan housing starts, 1996-2011



Source: Japan Lumber Reports, various issues.

Effects on employment and labour markets

With economic growth weakening in the advanced economies, unemployment levels increased significantly, to over 10 percent in the US and the major areas of the EU at the peak of the crisis. Unemployment levels remained high and by 2011 they were above 10 percent in Greece, Ireland and Portugal and above 20 percent in Spain. The problem has been exacerbated by the extraordinarily high rates of youth unemployment and increases in long-term unemployment which are likely to cause long-term social unrest. These high levels of unemployment have contributed to the poor recovery in housing starts.

Employment levels and labour markets in producer countries were negatively impacted by the crisis, particularly those with a high level of export dependence. A study on Asia's value chain labour markets, with focus on furniture industries in Indonesia and China, found that the global economic

crisis had significant impacts on Asia's labour markets (Hurst et al 2009). Demand had fallen in over 90 percent of furniture enterprises and 70 percent had responded to the downturn by reducing workers' hours and retrenching workers. The furniture industry in both Indonesia and China is described as a "market" value chain, where buyers are free to desert suppliers and source cheaper product elsewhere. The study demonstrated that temporary and migrant workers are the most vulnerable to retrenchment and changes in their wages and working hours, reducing households' expenditure on basic necessities such as food/nutrition and utilities/transportation as well as discretionary expenditure on entertainment and consumer durables. Where workers are retrenched, there are risks that the most vulnerable workers – such as migrant workers, temporary workers and women – will be pushed into the informal economy. These demand-side factors can be influenced further by supply-side factors such as migrant workers moving back home to rural areas (in some cases putting pressure on forests) and reducing the size of the labour market. As retrenched migrant workers move away from industrial regions, this may hamper sector efforts to recover as demand renews. Enterprises may discover that there are short-term labour shortages as workers have moved away. Hurst et al (2009) noted that there was some anecdotal evidence to indicate that was already happening in China. For example, in August 2009, the China Daily (China Daily 2009) reported that many factories in the Pearl River Delta region had shortages of workers following increases in domestic and overseas orders in the second quarter of 2009.

Effects on Foreign Direct Investment (FDI)

FDI has increasingly been viewed by policy makers in developing and emerging market economies (EMEs) as an important tool to finance development, increase productivity and import new technologies, and as such has been important in financing investment in forest and wood-based industries in many ITTO member countries. The global financial crisis led to a substantial contraction in international investment, including FDI inflows to emerging market economies and remains subdued in many countries. FDI inflows for a number of ITTO producer countries are shown in Appendix 2.

UNCTAD (2011a) reported that global FDI outflows declined from $2 217 billion in 2007 to $1 189 billion in 2009. Although they had increased to more than 1 346 billion in 2010, their level remained 40 percent below their peak in 2007. With the sharp decline in outflows from high income countries since the crisis, investment from other developing countries rose to 34 percent of total inflows in 2010, up from 25 percent in 2007. UNCTAD (2009) predicted that "countries with healthy macroeconomic fundamentals and robust financial systems are likely to recover sooner". China's FDI inflows rebounded strongly (by 62 percent) in 2010, with the manufacturing sector being the major recipient. China accounts for 30 percent of total FDI inflows to developing countries, and that share has grown from pre-crisis levels. Brazil is also a major recipient of FDI inflows (World Bank 2011b).

A recent study of FDI inflows to developing and emerging market economies (Arbatli 2011) investigated which factors (external and domestic) are important in driving FDI inflows to EMEs, noting that the relative stability of FDI inflows constitutes a buffer against liquidity and other financial problems during periods of crisis, such as the one experienced in 2009. The study noted that a surge in FDI inflows took place during 2003–07 and reached a peak of 4 percent of total emerging market GDP just before the global financial crisis in 2008. The study found that both global push factors and domestic economic policies were found to have a significant effect on FDI inflows,

especially during 2008–09 as growth rates declined and uncertainty regarding future economic prospects increased.

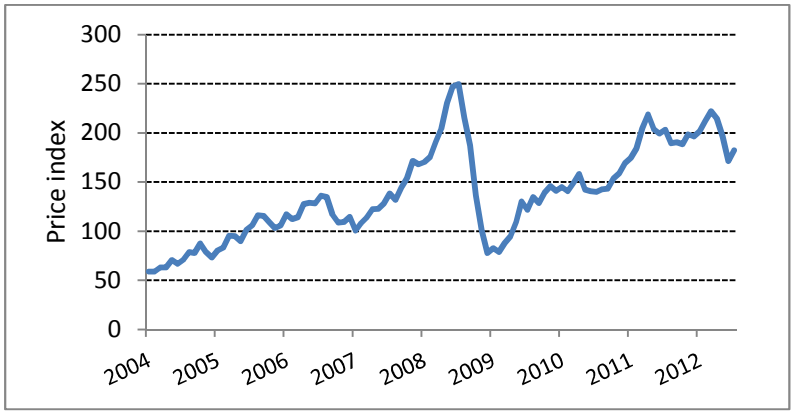
Among the set of pull factors that were considered, lowering corporate tax rates and tariffs and a stable exchange rate were found to be important determinants of FDI inflows. Among other country-specific variables, political stability was a crucial factor in attracting FDI inflows, with countries that are more prone to domestic conflict and political instability experiencing lower FDI than other countries with similar characteristics but having political stability. The growth benefits of FDI accrue mainly through technology transfers, imports of knowledge and managerial expertise, and spillovers to other industries and competitiveness. Additional actions are usually needed to ensure that these conditions materialize and that the benefits of higher, FDI-induced growth are widely shared. Such measures include investments in infrastructure and human capital (which also attract more FDI); improvements in governance, labour market performance, and financial sector intermediation. FDI inflows are known to be restricted in countries without strong macroeconomic stability and facilitating institutions (Plummer 2009). The results of Transparency International's corruption perceptions index (Appendix 4) shows that most ITTO producer countries are at the low end of the scale, indicating that improvements in governance are priority concerns with regard to attracting and managing FDI inflows.

The slow recovery in FDI post-crisis is a concern, particularly for SMEs which are the dominant business structures in the tropical wood processing sector in ITTO producer countries. About 12 percent of FDI flows to Brazil in 2009 originated in Spain and Portugal which continue to face severe economic difficulties and banks in the EU-5 have been an important source of capital for both public and private sectors in Latin America.

Effects on energy and transport costs

Oil and other energy prices have important impacts on the competitiveness of wood processing and products, determining manufacturing costs, adhesives and gluing costs, and transport and logistical costs. High energy prices also place pressure on conversion of natural forests to biofuels, including oil palm plantations, by improving the economic viability of biofuels as a land use option.

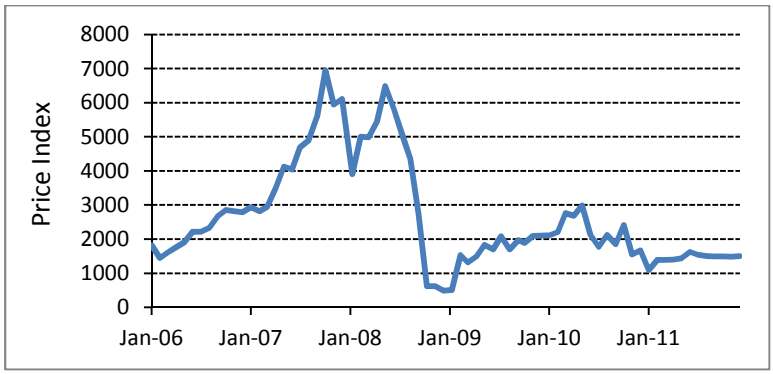
Figure 2.10. Crude oil (petroleum) price index



Source: IMF Primary Commodity Prices, Price index, 2005 = 100, simple average of three spot prices; Dated Brent, West Texas Intermediate, and the Dubai Fateh

Crude oil prices reached a peak in mid-2008, raising concerns about energy security for development, but plunged in late 2008 as global oil consumption contracted deeply, reaching a low in February 2009 (Figure 2.10). Most of the demand declines were attributed to the advanced economies, although oil consumption in emerging economies also decelerated. In response to weak demand and plunging prices, OPEC implemented a series of production cuts to support prices. With signs of a demand rebound in China and perceptions that the worst of the global recession was over, prices picked up in the second quarter of 2009. Prices remained relatively stable in the first three-quarters of 2010 but rose as demand growth accelerated and stocks fell in late-2010 and 2011. Oil demand growth was stronger than expected and reflected energy policy shifts in China that reduced the supply of electricity to some sectors and led to increased diesel demand, unexpectedly high fuel demand in the US and substitution of oil-generated power for nuclear power in Japan for part of the year. Prices rose sharply in response to supply-side factors - an oil supply shock triggered by events in the Middle East. Geopolitical uncertainty, which could trigger a sharp increase in the price of oil, is considered one of the most important risks to the global economy in 2012/13 (IMF 2012).

Figure 2.11. Ocean freight index, January 2006-December 2011



Source: ITTO Tropical Timber Market Report, various issues. The BSI (Baltic Supramax Index), published by the Baltic Exchange, is the weighted average on five major time-charter routes. It is based on a 52,452 mt bulk carrier containing commodities such as timber.

Figure 2.11 shows the Baltic Supramax Index, which is a benchmark for global maritime freight costs along key routes. Maritime freight rates reached historic highs in 2008, driven by rising oil prices and the shortage of shipping driven by strong global economic growth and the surge in demand for commodities in China. Freight rates then plunged in late-2009 following the collapse in global trade. Prices picked up in mid-2009 and 2010 as importers began to restock inventories. In contrast to oil prices, freight rates declined steadily in mid to late-2010 owing to an oversupply of vessels and have remained low compared with the historically high levels of 2007-2008. While those who provide shipping and related services suffer from low freight costs, exporters benefit from the reduction in transaction costs. Oliver and Donkor (2010) note that the wood industry is particularly susceptible to short-term fluctuations in freight rates; for example, smaller shippers of lower value commodities, (many tropical timber products fit into this category) with insufficient volume to negotiate preferential rates are often being asked to shoulder the burden of increased prices.

Effects on supply chains

Integrated supply chain networks have been operating in the wood products sector for a number of years (e.g. Weyerhauser, IKEA, B&Q). Global demand shocks such as that experienced in 2008-2009,

and other disruptions such as large scale natural disasters, conflict, political unrest and terrorism, have consequences throughout the supply chain network. (A number of ITTO producer countries have endured major political conflicts in recent years – for example Cote d'Ivoire, DRC, and to a lesser extent Thailand and Myanmar –which have disrupted supply chains, contributed to a reduction in wood processing capability and an increase in suspected illegal logging and trade, and has hindered the development of institutions required to put SFM into effect (ITTO 2011a)).

Large scale natural disasters such as the devastation following the earthquake and tsunami in Japan, have highlighted the complex and interdependent nature of global and regional supply chains (WEF 2011a). Given the vertically integrated nature of many supply chains involving firms from multiple countries and the just-in-time inventory management systems employed, risks of disruptions to trade are no longer limited to single countries. Disruptions to production in even a small country that is the dominant producer of a critical component in a supply chain implies production in the rest of the chain will also decline, thus amplifying the effects of initial disruption to other countries (WEF 2011a).

The rising importance of production networks partly explains the growing sensitivity of world trade to changes in global GDP. For example, while a 1 percent drop in global income in 1960 would have led to a 1.9 percent drop in world trade, today this would have led to nearly a 4 percent drop in trade (World Bank 2012).

The nature of global systemic disruptions means there are limits to any one organization's ability, at local level, to fully address vulnerabilities on its own so that better multistakeholder models are required to plan for contingencies and build greater systemic resilience that will insulate against shocks to the system, no matter where they originate. In particular, these should involve public-private engagement in collaborative risk assessment, as well as greater sharing of data around threats and vulnerabilities.

WEF (2011a) suggests five priority areas to mitigate the effects of global disruptions to supply and transport networks, which are relevant to wood products supply chains. These include: developing expert networks across business and government; defining and measuring risk quantification to support effective decision making; implementing effective legislation and incentives; improving data and information sharing; and extending uses of scenario planning. Regional multistakeholder task forces could take collaborative action regarding regional differences in risk exposure, economic mix and regulation requirements. Such coordination could improve the compatibility of risk management efforts, improve sharing of response plans and intelligence, strengthening risk measurement and understanding, and facilitating the development of mechanisms to allow the movement of people and goods during a disruption.

Oliver and Donkor (2010) noted the problems within the tropical forestry sector related to fragmentation, rather than consolidation, of tropical forest industries with many companies operating as small and medium-sized enterprises (SMEs). Some of these issues will be discussed further in the following section. During the demand downturn these organisations were under pressure to switch to materials that could be more easily supplied little and often and more easily adapted at short notice to changing consumption patterns. Italian kitchen manufacturers, for example, were being asked to switch away from solid hardwood surfaces in favour of laminates.

Effects on global country competitiveness

The global economic crisis affected aspects of country competitiveness, particularly as the effects of the crisis were uneven between member countries. More importantly, the ability of ITTO producer countries to respond to the recovery in global demand post-crisis was dependent on their relative competitiveness, with more competitive countries having a comparative advantage in responding quickly to market signals and in sustaining growth.

Appendix 2 shows global competitiveness rankings for ITTO producer and some consumer countries, as determined by the World Economic Forum (WEF 2011b). Relative competitiveness, as defined by the WEF, is determined by a number of interconnected factors, grouped under twelve "pillars of economic competitiveness", including stability of institutions, quality and extensiveness of infrastructure and networks, stability of the macroeconomic environment, health of the workforce, quality and access to education and training, goods and labour market efficiency, financial market development, technological readiness, size of the domestic and export markets, level of business sophistication and innovation. WEF notes that "the results show that while competitiveness in advanced economies has stagnated over the past seven years, in many emerging markets it has improved, particularly in China and Brazil, placing their growth on a more stable footing and mirroring the shift in economic activity from advanced to emerging economies".

However, many ITTO producer countries are ranked at a relatively low level, with all countries in the African region towards the lower end of the global ranking, together with Cambodia in Asia-Pacific and Venezuela, Guyana, Bolivia and Ecuador in Latin America. Most of these had low scores because they lack the institutional and infrastructure requirements for the development of internationally competitive industries. Malaysia was the highest ranking ITTO producer, scoring highly on foreign market size, business sophistication and innovation. Other countries in Asia-Pacific were amongst the higher ranking, including Thailand and Indonesia. Brazil's market size and level of business sophistication is regarded as relatively high and initiatives have focused on creating a more business friendly environment for private-sector development. WEF note that this has allowed Brazil to successfully react to the impact of the recent global economic crisis. Among its competitive advantages are its large market size, providing an efficient and dynamic business sector with important economies of scale, and a large basis on which to absorb and introduce process and product innovation. Brazil has one of the most developed and sophisticated financial sectors in the South American region, coupled with fairly efficient infrastructure by regional standards and a relatively well functioning higher education system.

Effects on protectionism and trade measures

During the height of the economic crisis, the IMF and World Bank noted that there were increased risks of trade protectionism driven by high unemployment rates, global trade imbalances, and perceptions of exchange rate undervaluation among trading partners (World Bank 2011b; IMF 2009). These risks put pressure on governments to take a more protectionist stance on international trade. A further risk of protectionist trade measures is that the growth of value chains which cut across national borders (as is the case with many of the tropical SPWP supply chains) implies that traditional forms of protectionism are more likely to have negative impacts as countries' economies are interlinked through value chains.

The WTO reported that to October 2010, new trade restrictions (antidumping, countervailing duties and safeguard actions) introduced since the commencement of the crisis in 2008 had affected 1.9 percent of total global trade. Although some of the measures were meant to be temporary, only 15 percent of the measures introduced had yet been removed. In 2010, a large number of trade remedy investigations were initiated in the second and third quarters of 2009 and in the APEC region, APEC economies reportedly imposed 15 new product-level import restricting trade remedies in the third quarter, followed by 11 measures in the fourth quarter, the highest number in recent years (APEC 2011a). Two of the newly imposed trade remedies were for wood and wood products.

Using a wider definition of trade protectionist measures, Global Trade Alert (Evenett 2012) noted that nearly double the number of protectionist measures were implemented from November 2008 to September 2009. GTA further argue that the world trading system has not settled down to low levels of protectionism after the spike in "beggar-thy-neighbour" policies in 2009, with countries resorting to non-traditional, non-transparent (according to WTO rules) discriminatory measures. Under GTA's definition, government procurement policies and environmental measures with the intent of benefiting domestic commercial interests against foreign rivals would be defined as trade protectionist measures.

Although it has been observed that increasingly, protectionism is being imposed disproportionately by developing world importers on developing world exporters notably China (Chad et al 2010), in the case of wood and wood products, developed world importers, notably the USA and EU, have imposed the majority of trade measures on developing world exporters, notably China. The USA imposed countervailing duties on Chinese imports of multi-layered flooring in the fourth quarter 2010. The price competitiveness of wood products imports from China and other sources had been a concern for the US hardwood industry since before the crisis. With pressure from the US hardwood industry, the US International Trade Commission launched formal investigations before the crisis on the legality of wood product supplies from China and other countries that could be affecting the US hardwood industry. In 2008, they concluded that the increase in market share of hardwood plywood was due to shifting US consumer preferences, improved logistical capabilities in distribution and retailing enabling improved sourcing of imported products, and a trend for US producers to broaden their product lines or supplement domestic production with imports of finished products (ITTO 2009). The EU has imposed anti-dumping duties on okoumé plywood from China since 2004. These were extended in an EU decision in January 2011, following an appeal from European okoumé plywood producers (European Federation of the Plywood Industry) (ITTO 2010a).

World Bank (2011b) notes that although the current application of protectionist measures is limited, a greater threat lies in the continued accumulation of new restrictions, without repealing earlier temporary ones, leading to an increasing share of trade affected by restrictive measures. China's exports of wooden bedroom furniture to the USA have been subject to import duties since 2004 - well before the crisis – with the US International Trade Commission (ITC) determining in 2004 that the US domestic furniture industry had suffered material injury from imports of wooden bedroom furniture from China and imposed duties of 2 to 16 percent on the majority of Chinese firms and 198 percent on other Chinese furniture producers (mostly SMEs) who had not contested the case. In response to the duty, the Chinese furniture diverted some of its production to items which was not subject to anti-dumping duties, such as such as seats with wooden frames. Following a review process in December 2010, and with pressure from US domestic manufacturers, the ITC extended

antidumping duties on wooden bedroom furniture from China for another five years, with the custom duties ranging from 43 percent to 216 percent (Combs 2011).

Effects on regional economic cooperation

Expanding and diversifying regional cooperation and integration can be considered a long-term solution to supporting trade and investment and assisting producer countries to overcome market shocks. The global economic crisis and subsequent economic shocks in ITTO producer countries were derived from the fact that their production and exports were to a large extent dependent on the economic prosperity and sustainable development of markets in the developed economies. Demographic profiles and rising incomes in producer countries imply that there is significant opportunity to expand and exploit market opportunities, including for tropical wood products, that are closer to home. The crisis increased awareness in ITTO producer regions of the benefits of regional cooperation and the opportunities for strengthening regional linkages through reshaping the existing production supply chains and creating more regional demand, policy instruments such as GSTP, and more comprehensive and effective regional trade and investment agreements (UNCTAD 2009).

There is evidence that the global recession has generally strengthened regional cooperation in ITTO producer regions. China's trade relations with other Asian economies has grown, particularly ASEAN, boosted by China's relatively stable import market compared with other consumer markets in North America and Europe. The China ASEAN free trade agreement became operational in 2010. India also signed a Free Trade Agreement with ASEAN in 2009, opening trade with the two regions. In the tropical hardwood plywood and flooring sector, however, USITC (2010) points out that important factors have hindered regional integration in ASEAN regarding these products. "Government controls over wood supply (through land ownership and concession policies) and the restriction on harvesting and trade of raw materials (unprocessed wood) have encouraged discrete, country specific hardwood plywood and flooring industries. Although export restrictions on raw materials may foster the development of downstream hardwood plywood and flooring industries within a particular ASEAN country, they tend to form a barrier to the development of an integrated regional industry that could otherwise draw upon wood materials at various stages of processing sourced throughout the ASEAN region". On the other hand, the mounting pressure in external markets to address the issues of illegal harvesting and trade, which has escalated during the crisis, has helped the ASEAN timber industry to collaborate on addressing these issues

An ITTO conference in 2010 on the promotion of intra-African trade in timber and timber products was prompted by the need to diversify timber markets in the wake of the global economic crisis and downturn in global timber markets. Growing populations and GDP growth in the region indicated that there were intra-regional market opportunities but weak trade linkages and other trade barriers within Africa limited the extent of trade (ITTO 2010b).

Economic drivers and developments to watch

International organisations such as IMF and WEF regularly publish information on global economic risks, including the drivers and developments to watch for and their potential impacts on global and regional market economies. Foresight and scenario planning methodologies, which incorporate risk assessments, are starting to be applied in the forestry sector for various purposes (COST 2011; Turner 2010; FAO 2011a; FAO 2011b) and are useful techniques for long-term strategic planning,

including the assessment of risks associated with global demand shocks, at international, regional, country and organisational levels. At international level, the WEF listed the top five global risks in terms of likelihood in 2012 as: severe income disparity, chronic fiscal imbalances; rising greenhouse gas emissions, cyber attacks and water supply crises. The top five global risks in terms of impact were: major systemic financial failure, water supply crises, food shortage crises, chronic fiscal imbalances and extreme volatility in energy and agricultural prices. While these risks are not directly linked to the tropical forestry sector, they have the potential to significantly affect global wood products demand and supply chains.

ITTO producer country vulnerability to the economic crisis

An assessment of ITTO producer country vulnerability to economic shocks can be derived from a number of determinants which have been discussed in this section. Global competitiveness, which includes a number of variables (see Appendix 3), is a good indicator of a country's ability to respond to export market volatility and for exports to recover quickly when markets turn around, with countries having a comparative advantage if they have the adaptability, resources and capability to explore new market opportunities as well as compete in declining markets. While many of the least developed countries may have limited exposure through exports, their levels of FDI, which are a significant proportion of GDP, are threatened during global economic crises when FDI outflows from developed countries are reduced, and there is greater competition among countries for attracting such funds. IMF (2009) has classified a number of ITTO producer member countries as "heavily indebted poor countries" – DR Congo, Ghana, Liberia, Cameroon, Central African Republic, Republic of Congo, Côte d'Ivoire, Bolivia, Nicaragua, Honduras and Guyana – with many having a moderate to high level of FDI dependence. Poor governance levels, including high levels of corruption, are indicators of vulnerability, restricting competitiveness in attracting declining levels of international investment.

Table 1 provides a simple country-level ratings of global competitiveness, overall size of the domestic market, export dependence, level of corruption and FDI dependence, as indicators of country vulnerability, with areas of concern highlighted. On this rating Brazil is the only ITTO producer country with no major areas of vulnerability, while Cameroon, Dem. Republic of Congo, Republic of Congo, Côte d'Ivoire, Gabon, Liberia, Cambodia, Fiji, PNG, Bolivia, Honduras, Guyana, Panama and Trinidad and Tobago have significant areas of vulnerability.

Table 2.1: Levels of country vulnerability to global economic shocks by indicator, ITTO producers

	Overall competitiveness	**Domestic market size**	**Export dependence**	**Level of corruption**	**FDI dependence**
Africa					
Cameroon	*L*	*L*	*M*	*H*	*L*
Central African Republic	*n/a*	*n/a*	*n/a*	*H*	*L-M*
Congo, Dem. Rep.	*n/a*	*n/a*	*M*	*H*	*H*
Congo, Rep.	*n/a*	*n/a*	*H*	*H*	*H*
Cote d'Ivoire	*L*	*L*	*M*	*H*	*L*
Gabon	*n/a*	*n/a*	*H*	*H*	*L*
Ghana	*L*	*L*	*M*	*M*	*M*
Liberia	*n/a*	*n/a*	*H*	*H*	*H*
Nigeria	*L*	*H*	*M*	*H*	*M*
Togo	*n/a*	*n/a*	*H*	*H*	*L*
Asia-Pacific					
Cambodia	*L*	*L*	*H*	*H*	*M*
Fiji	*n/a*	*n/a*	*H*	*H*	*M*
India	*M*	*H*	*L-M*	*H*	*L*
Indonesia	*M*	*H*	*L-M*	*H*	*L*
Malaysia	*H*	*M*	*H*	*M*	*L*
Myanmar	*n/a*	*n/a*	*n/a*	*H*	*n/a*
Papua New Guinea	*n/a*	*n/a*	*H*	*H*	*L*
Philippines	*L*	*M*	*M*	*H*	*L*
Thailand	*M*	*H*	*H*	*H*	*L-M*
Vanuatu	*n/a*	*n/a*	*H*	*M*	*M*
Latin America/Caribbean					
Bolivia	*L*	*L*	*M*	*H*	*L-M*
Brazil	*M-H*	*H*	*L*	*M*	*L-M*
Colombia	*M*	*H*	*L*	*H*	*L-M*
Ecuador	*L*	*M*	*M*	*H*	*L*
Guatemala	*L*	*M*	*M*	*H*	*L-M*
Guyana	*L*	*L*		*H*	*H*
Honduras	*L*	*L*	*H*	*H*	*M*
Mexico	*M*	*H*	*M*	*H*	*L*
Panama	*M*	*L*	*H*	*H*	*M*
Suriname	*n/a*	*n/a*	*n/a*	*H*	*L*
Peru	*M*	*M*	*L-M*	*H*	*L*
Trinidad and Tobago	*L*	*L*	*n/a*	*H*	*L*
Venezuela	*L*	*M*	*L*	*H*	*L-M*

Sources: Author's assessment based on the following sources: World Databank 2012; Transparency International 2011; World Economic Forum 2011.
Note: The data and indices from the above sources have been used as the basis for a simple country-level assessment of the levels of competitiveness, overall size of the domestic market, export dependence, level of corruption and FDI dependence. L=low; M=medium; H=high. n/a=information not available

3 IMPACTS OF THE GLOBAL FINANCIAL AND ECONOMIC CRISIS ON THE TROPICAL TIMBER SECTOR

Impacts on tropical forests

The impacts of the global economic crisis on natural forest areas, plantation development and SFM are difficult to determine because of data limitations during the period of the global economic crisis. The information available implies that there have been both positive and negative impacts on the state of tropical forests and sustainable forest management in ITTO producer countries. Some general observations regarding the impacts of the crisis on tropical forests are as follows:

- Tropical forest management in natural forests is usually in the public domain, determined by longer term policy, and is therefore relatively unaffected by external demand shocks. By contrast, private sector forest development initiatives are more market responsive and were more affected by the credit crunch/demand shocks.

- Reduced market demand put pressure on wood processing companies in producer countries to reduce production costs, resulting in 'creaming' of higher value species, restricting production to large diameter trees to improve processing economics. This has had implications for forests such as underutilisation of low value and small diameter logs, and species available for export.

- In highly forested, urbanised producer countries (i.e. Indonesia), unemployment may have put pressure on the rate of conversion of forests to agriculture, as unemployed people returned from urban to rural areas/forests (FAO 2011a). In the Congo region, a reduction in industrial employment in logging and timber processing reportedly led to a lack of investment in water supplies and roading, threatening livelihoods and leading to locals resorting to "poaching and collecting non-timber products to survive", thereby negatively impacting both development and conservation (Hance 2010).

- In Indonesia, in response to the economic downturn, permission was given for export of plantation grown logs due to low returns from domestic consumption by pulp and paper manufacturers. Seven million hectares of natural forest concessions were provided to assist the pulp and paper sector. FAO (2011a) noted that although lifting the ban on exports of plantation grown logs and replacing supply to the domestic pulp and paper industry with wood from natural forests could serve to stimulate the Indonesian economy, it could also act to undermine SFM.

- International donors are playing an increasing role in the financing of protected forest areas in tropical countries and thereby ensuring the sustainable management of the protection permanent forest estate (ITTO 2011a). REDD+ has developed as a major new international policy tool in tropical forests and has the potential to provide substantial new and additional funding for the sustainable management of tropical forests. The aim of REDD+ is to provide financial incentives to help tropical countries voluntarily reduce national deforestation, conserve and sustainably manage their permanent forest estates and increase forest cover through reforestation and afforestation. ITTO (2011a) noted the importance of mechanisms such as REDD+ as a revenue earning opportunity for forest owners and that "in the long run,

the extent of payments for the ecosystem services supplied by tropical forests – made at either the national level or the global level – are likely to pay a large part in determining the fate of the remaining tropical forests". However, although pledges of initial finance have been made, the failure to achieve legally binding agreements on long-term financing mechanisms can be partly attributed to the economic downturn in developed economies. Countries have agreed to consider options for scaling up climate finance, but without any commitment on funding sources, targets or timelines.

- The implementation of trade-based mechanisms to combat the illegal timber trade, many of which had been developed before the crisis period, does not appear to have lost momentum during the global economic crisis and they have been actively supported by trade associations in consumer countries. Reduction in demand and increased competition in the global marketplace provided an incentive to remove illegal wood, which has dampened global wood prices, from the marketplace. New trade legislation, procurement policies and buyer preferences for legally-verified wood have been developed during the period of the global economic crisis[2]. Many tropical producer countries currently providing certified and sustainable products to the EU and US markets are concerned that the new regulations pose additional costs to producers which will negatively impact their competitiveness in currently depressed markets. To assist moves to develop management systems to meet these new demands, the EU FLEGT programme has been providing assistance to governments, industry and NGOs and this programme has continued during the global downturn. By the end of 2011, six VPAs between the EU and timber producing countries had been finalised and four more were under negotiation.

- While trade-based measures have increased demand for certification and legality verification in the developed economies, the emphasis on growing domestic and regional tropical producer country markets to counter the demand downturn in developed country export markets has implications for SFM. Tropical timber exports to China and India have grown and there has been increased wood products consumption in tropical country domestic markets, many of these markets placing little emphasis on certification and legality verification, reducing the incentive to pursue SFM (ITTO 2011a).

[2] In 2008 the US Lacey Act was amended with the intent of extending its application to include illegally harvested timber. The amendment makes it illegal to import, export, transport, sell, receive, acquire, or purchase in interstate or foreign commerce, any plants or products made from plants - with limited exceptions - that were harvested or taken in violation of a domestic or foreign law. The Act gives the government the power to fine and jail individuals and companies that import timber products harvested, transported or sold in violation of the laws of the country in which the timber was originally harvested. In October 2010, the EU adopted legislation prohibiting the sale within the EU market of illegally harvested timber or timber products derived from such timber. The EU Illegal Timber Regulation, which will come fully into application in March 2013, puts a traceability obligation on traders throughout the supply chain to identify the operators or the traders who have supplied the timber and timber products; and where applicable, the traders to whom they have supplied timber and timber products; and requires companies to implement a "due diligence" system to minimise the risk that timber they sell was harvested illegally. FLEGT Voluntary Partnership Agreement (VPA) licensed timber and timber products covered by CITES certificates are effectively given a free pass under the legislation and are not required to be subject to any further scrutiny or risk mitigation by traders. Following implementation, the regulation is expected to result in legality becoming a minimum requirement for selling timber in the EU and a shift from high to low risk sources which will favour timber from verified legal and sustainable sources.

- A major cause of deforestation has been the conversion of natural forests to alternative land uses, including pulp and paper plantations and palm oil plantations, with new plantations often established on newly cleared rainforest and peat-swamp forests rather than degraded land or disused agricultural land. The economic downturn in 2008/09 may have reduced global demand for pulp and paper and provided a temporary respite in land conversions for pulpwood plantations. The demand for palm oil plantations is related to biofuels demand and oil prices. In the period prior to the downturn, oil prices reached record high levels thereby increasing demand for energy alternatives, including biofuels, and resulting in land clearances for oil palm plantations. Production of crude palm oil in Indonesia and Malaysia – the main producing countries – are shown in Table 3.1. Production increased rapidly before the crisis period but stalled in 2009 and 2010. This decline in production is, however, probably related to the diminishing availability of land for conversion to oil palm plantations rather than a result of reduced oil prices reducing the economics of biofuels plantations as a viable land use option during the economic downturn.

Table 3.1: World crude palm oil production, 2003-2011 (1000 tonnes)

	2003	3004	2005	2006	2007	2008	2009	2010	2011
Indonesia	10,600	12,830	14,100	16,050	17,270	19,330	19,324	19,760	24,911
Malaysia	13,355	13,976	14,962	15,881	15,824	17,734	17,564	16,993	18,912
TOTAL	28,259	30,9873	33,846	37,142	38,674	43,118	45,270	45,870	48,990

Source: Malaysian Palm Oil Board, FAOStat

- There are indications that the global economic downturn led to intensified mining activities, and their associated infrastructure development, in some producer countries to increase government revenues. Much of the commercially viable mineral ores and metals are found in forested areas, including in areas designated as protected forests. In Indonesia, for example, the government issued new regulations in March 2010 that allowed underground mining in protected areas. The new rules also allowed activities such as power plants, renewable energy projects and transportation such as toll roads to be built in protected forests (Responsible Research 2010).

- The downsizing of wood processing industries - particularly SMEs – has reduced some of the overcapacity that existed in many producer countries prior to the crisis, and thereby improved efficiencies, which has had positive impacts on forests. On the other hand, the lack of funding for training, R&D and new investment to upgrade inefficient processing in some producer countries has had negative implications for SFM.

Impacts on production

General observations regarding the impacts of the global economic crisis on tropical primary wood products production during 2008-2009 are as follows:

- Limitations in the quality of tropical timber production data restrict a comprehensive analysis of the impacts of the crisis on production levels.
- In response to reduced global demand for wood products, log production declined in producer countries where a high proportion of production had been exported.

- Independent of impacts due to the crisis, supply constraints due to historical overexploitation of natural forests, and SFM initiatives in response to overexploitation of forests, also impacted production levels marginally during the period under review.
- Small and medium-sized enterprises (SMEs), which dominate tropical wood processing industries in many ITTO producer countries, were exposed by the crisis because of limited access to finance, weak negotiating power, and limited ability to respond quickly when markets recovered. SME production curtailments and plant shutdowns occurred in most ITTO producer countries during the crisis period.
- In the Asian region, a significant overcapacity in the wood processing sector existed before the crisis period. Rationalisation and downsizing of many tropical wood processing industries is likely to have increased the overall competitiveness of the sector.
- As a result of the crisis, a focus on processing of higher value, well-known species to improve the economics of production. By contrast, lower value species were underutilised, with implications for SFM goals in some producer countries.
- Private sector organisations, which are generally more sensitive to changes in the market than public sector organisations, were more exposed to the global downturn in demand during the crisis.

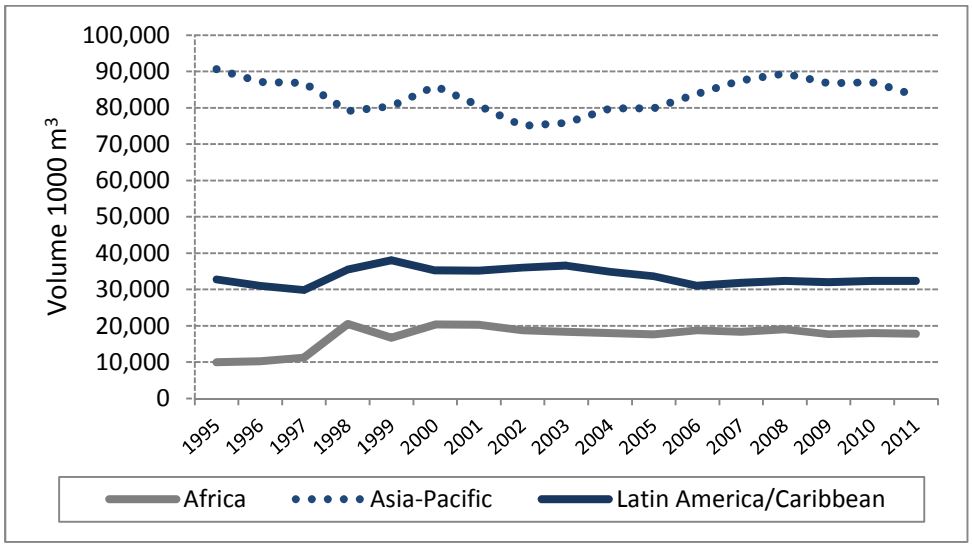
Although official data for industrial roundwood (sawlogs and veneer logs) and sawnwood production do not indicate any significant trend as a result of the global crisis (Figures 3.1 and 3.2), production data is often suspect given that many tropical supplying countries have not provided consistent production data to international reporting agencies from the crisis period to date (ITTO 2012). Production data is often based on estimates, and the dominance of small and medium-sized enterprises in the wood processing industries means that production figures from such numerous, small-scale operations are likely to be underestimated. India, for example, has never provided reliable, official production figures to international reporting agencies, necessitating the use of estimates based on reported exports and assumed domestic consumption in recent years (ITTO 2012).

Notwithstanding the limitations in the data, country-level data and anecdotal information suggests that log production in export dependent countries declined over the crisis period but picked up in 2010 when demand rose in China and India. Malaysia, the only major ITTO producer country that provides consistent tropical log production data to international reporting agencies, has recorded declining production since 2008. Although depressed global market conditions resulting from the crisis affected log production in 2008-2009, markets picked up in 2010 but supply constraints have restricted a recovery in production to pre-crisis levels. Resource availability in natural forests has become increasingly constrained by government policy on implementing sustainable forest management and there has been slow progress to date in achieving Government-set plantation forest area targets (see Chapter 5.3).

Indonesia, the largest ITTO tropical log producer country, has produced about 34 million m^3 of saw and veneer logs since 2007, following a period of rising GDP growth and domestic demand from the construction industry. Indonesia's natural forests have faced pressure from conversion to agriculture (particularly oil palm plantations), conversion to forest plantations (for the pulp and paper industries) and from rising domestic demand for wood products in the growing domestic housing construction sector. Indonesia's industrial roundwood production is less dependent on export

markets than Malaysia, and has also become increasingly supply constrained with the wood processing sector already having a significant overcapacity and continued reports of relatively high rates of illegal roundwood consumption. Although Brazil's growing domestic demand mitigated the impacts of the crisis to a certain extent, tropical roundwood production levels reportedly declined during the crisis period, with export-oriented companies most affected (see Section 5.1).

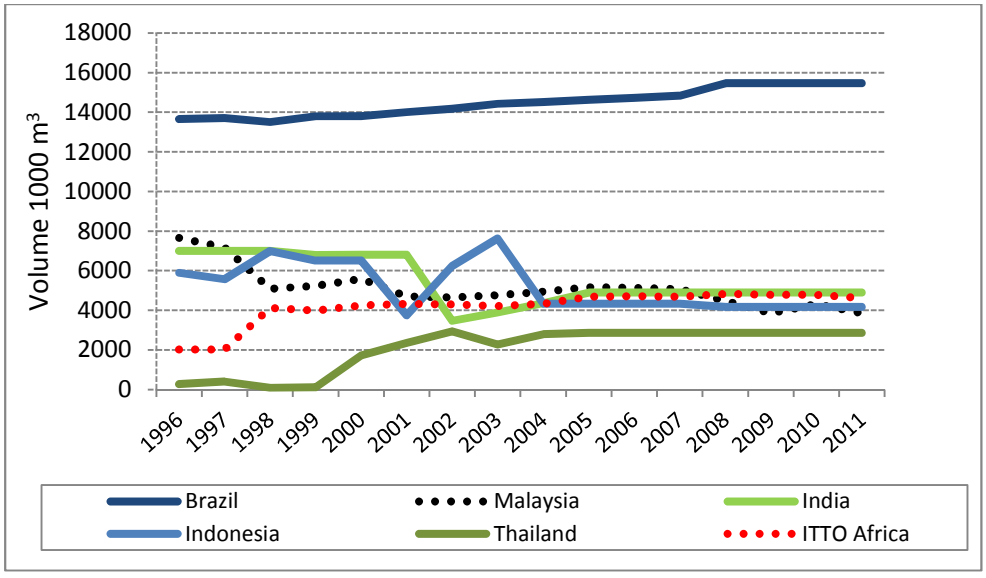
Figure 3.1. Tropical log production by region, 1995-2011



Source: ITTO Statistics Database

World production of tropical sawnwood is dominated by Brazil, which produces over 35 percent of the total. Figure 3.2 indicates that there was no significant change in Brazil's tropical sawnwood production over the crisis period, reflecting Brazil's growing construction demand and the relative size of the domestic market, which accounts for over 95 percent of production (ITTO 2012).

Figure 3.2. Tropical sawnwood production, major ITTO producers, 1996-2011



Source: ITTO Statistics database

India, Indonesia and Thailand are major tropical sawnwood producers but also large consumers, and production levels were less affected than in Malaysia, where production declined 14 percent in 2009 in response to reduced export demand. Overcapacity in the Asian region's sawmilling industry had been threatening the competitiveness of the sawmilling industry, as well as SFM goals, since well before the economic downturn. Low levels of technology and training, particularly in the lower income countries – Cambodia, Myanmar, and Laos (not an ITTO member) – have contributed to poor sawlog recoveries and threatening efforts to achieve SFM (ITTO 2011b).

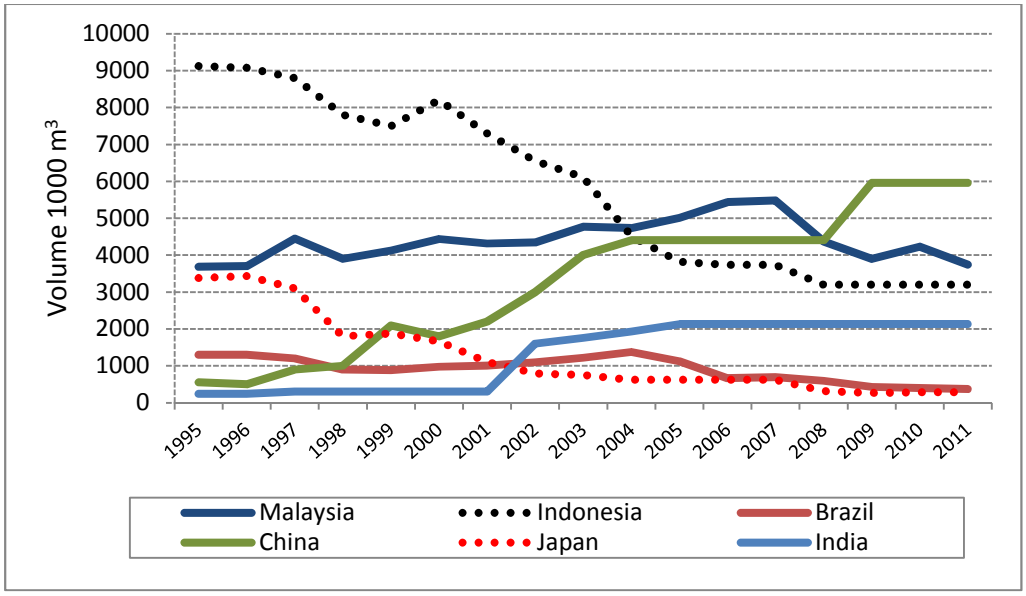
African sawnwood exporters have been more dependent on EU markets than exporters in other regions, and were therefore more sensitive to the impacts of the global economic downturn and its impacts on demand in traditional export markets. Many of the major ITTO producers in the region (particularly Gabon, Cameroon and Republic of Congo) relaxed their log export restrictions during the crisis to assist the forest industries to improve their profitability, the sawmilling industries having experienced mill closures and cessation of construction of new mills. A change in the types of species utilised in African producer countries compared with those available for export also occurred, with the higher value species being favoured to improve overall export values of sawnwood (and other wood products). In Gabon, for example, the share of okoumé in log exports declined from 52 percent in 2007 to 42 percent in 2009, allowing more okoumé for wood processing in Gabon (ATIBT 2010). Another consequence of producers turning to higher-value species was a reported reduction in utilization of lesser-used species, with implications for marketing of these species and achievement of SFM goals.

In 2010, many African countries reimposed log export restrictions to assist the sawmilling and other wood processing industries to recover, assisted by some improvements in prices and demand in the EU, and some diversion of sawnwood exports to the growing markets in India and China. The implementation of the log export ban in Gabon in 2010 was reported to have led to a decrease in availability of specialty African species such as padouk, ovangkol, and bubinga in the European market with significant volumes of these species being processed from Gabonese logs in European sawmills.

Tropical plywood production in ITTO producer and consumer countries had been undergoing significant change well before the global economic crisis period (Figure 3.3). Some of the major trends have been:

- the major production bases shifting from Japan (which had been the dominant plywood producer and importer of tropical logs until the early 1990s) and Indonesia, to Malaysia and China;
- decreasing availability of large-diameter, peeler quality logs for plywood production;
- significant changes in production technology, allowing the use of lower quality substrates to produce combi-plywood products;
- rising production costs, particularly in the pre-crisis period as the costs of glue, peeler logs, and labour (particularly in China in recent years) increased considerably; and
- increasing availability of panel substitute products such as softwood plywood, birch and poplar plywood, OSB, LVL, I-beams, wood plastic composites, and veneered MDF which have reduced market share, put downward pressure on tropical hardwood plywood prices, and put severe pressure on producers to cut costs.

Figure 3.3. Tropical plywood production, major ITTO producers, 1996-2011



Source: ITTO Statistics Database

Although many tropical producer countries introduced log export restrictions to assist domestic wood processing industries during the economic downturn, production curtailment and plant closures were reported in all major producer countries in response to depressed demand in major consuming countries (ITTO 2010a).

Although official data shows China's plywood production remaining static between 2004 and 2008, anecdotal reports indicate that China's production had grown dramatically until 2007, but production began to slow in 2008 when the value-added tax (VAT) rebate for plywood was reduced from 11 percent to 5 percent (ITTO 2009). The Chinese currency also appreciated relative to other major currencies (diminishing returns to the sector) and demand declined dramatically in the USA, the major export market. Significant plant closures were reported in 2008 and 2009 in the major producing provinces in response to rising raw material and labour costs and general weakening of export prices. In 2009 production rose to 6.0 million m^3, assisted by a domestic housing boom in the latter half of 2009 as well as an export rebound. Although only about 20 percent of China's tropical hardwood plywood production is exported, significant restructuring of the plywood industry occurred in response to the global demand downturn, with export production consolidating around the larger enterprises. China's tropical plywood production has typically comprised a poplar or eucalypt substrate with tropical veneers but is shifting to low priced substrates such as palm or coconut (for producers seeking lower production costs).

Malaysia's production is more heavily export oriented, and plywood production follows growth trends in its major export markets. Exports dropped 38 percent between 2008 and 2009 to less than half the level in 2006. Malaysia's plywood mills had also been impacted by a steady reduction in log supply due to policies to achieve sustainable forest management, and plywood mills in Sarawak were reported to be operating at 70 percent to 80 percent capacity due to log shortages. With pressure to reduce production costs and limited peeler log supplies, Malaysian (and Indonesian) plywood producers have been using fast growing tropical plantation species such as *Acacia mangium*

and *Acacia falcata*, in addition to the use of importer softwood core material (such as radiata pine), for tropical plywood production.

Indonesian plywood production continued to contract in 2009, to less than half the level of 2003. Log availability for plywood production has reduced considerably because of overexploitation of forests in previous years, a sharp decline in legally sanctioned logging quotas and improvements in forest law enforcement practices. Demand constraints in Indonesia's major export markets and a decline in price competitiveness compared with Malaysian plywood in some markets has also contributed to a drop in Indonesia's production levels. The industry's problems have also been compounded by high production costs and out-of-date technology. India's tropical plywood production, based largely on imported tropical logs as in China, has also expanded significantly over the last decade and is almost wholly consumed domestically. As such, production was relatively unaffected by the crisis and is likely to have increased in 2009 and 2010 following significant subsidies to the growing housing sector which reportedly increased demand for plywood.

India's tropical plywood production typically uses species such as balau, merbau and keruing from Malaysia and teak from a variety of sources for face veneer, with domestic plantation species for core veneer. The industry is reported to be highly fragmented with small and medium-sized enterprises accounting for almost 75 percent of the market. In Japan, tropical plywood producers curtailed production in 2009 to meet reduction in demand and log shortages but production had picked up in early 2010 in response to a collapse in the softwood plywood market at the end of 2009 (ITTO 2010a).

Trend data on the volume of tropical secondary processed wood products[3] production is unavailable, but information on the value of exports (see later in this section), and anecdotal information at country level (ITTO MIS), suggests that China and Vietnam have become the major tropical SPWP manufacturing "hubs", with Malaysia and Indonesia also important tropical producers. EU wooden joinery and furniture manufacturers (particularly Italy and France) have also produced significant quantities of joinery and furniture products from tropical primary wood products imports. However, the economic downturn in Spain, Portugal and Italy has led to mounting competitive pressure from lower cost non-wood substitutes, resulting in industry downsizing and restructuring (see section 4.2).

There is evidence that tropical SPWP industries, both domestic and export-oriented, have undergone significant restructuring as a result of the economic crisis. China's wood SPWP industry is discussed in detail in Section 5.1. Although Vietnam is not an ITTO member country, it is now the largest tropical country exporter of SPWPs and one of the world's largest furniture exporters. The economic crisis has transformed the structure of the wooden furniture industry in Vietnam, particularly for SMEs that produce furniture for the domestic market.

Forest Trends (2010) reported that in 2008, small-scale wood processing firms in Vietnam had difficulties securing loans from risk-averse Vietnamese banks, who suspected that these companies might not be able to repay loans. These companies were unable to procure raw material and were

[3] Secondary processed wood products include wooden furniture and parts, builders' woodwork and joinery, wooden mouldings, and 'other' SPWPs (which includes a wide variety of products such as picture frames, tableware, kitchenware and other small wooden items).

also ineligible for value-added tax (VAT) exemptions (an exemption which effectively lowers production costs). Consequently, their production costs increased and their competitiveness was reduced, with many companies undergoing retrenchment or going out of business. By contrast, medium and large-scale companies focussing on export markets had less difficulty in accessing loan finance and were eligible for VAT exemption, although production was somewhat curtailed by the downturn in demand in export markets. In response to economic pressures, large companies effectively lobbied the Vietnamese government for export assistance resulting in removal of the export tax, which was previously at 10 percent for wood products, to improve the industries' competitiveness. The government also provided long-term loans with favourable conditions to these companies, in addition to institutional support to furniture export companies to facilitate their access to export markets.

Forest Trends (2010) claimed that some of the strategies that Vietnamese companies adopted during the global recession involved illegal activities to reduce their high production costs, particularly in procuring raw material from the bordering country (Laos), an important tropical supplier which is known to have a history of unsustainable and illegal logging and trade. These activities included "reducing royalties by collaborating with Laos officials to under-report the amount of wood harvested and to re-classify wood species from high value to low value; not using low-value wood species and smaller diameter trees but high value (protected) and big diameter trees". As the profitability of the trade with Laos declined, some firms focused primarily on trading of rosewood, a highly valued species with strong demand in China - despite the fact that logging of this species is banned in Laos. In spite of this a number of firms were still bankrupted when rosewood demand and prices declined in China. In the supplying country (Laos), with companies' production costs increasing as a result of the global economic crisis, the utilisation of small diameter logs had become uneconomic. With poor forest policy and regulatory enforcement, companies were reportedly restricting their production to large diameter logs of 60cm and larger, and simply felling and burning small diameter trees.

Impacts of the crisis on small and medium-sized enterprises

The preponderance of SMEs in tropical wood processing, including in China, remains a challenge for tropical supplying countries during global demand crises. During a crisis period SMEs face reduced demand for their products, have difficulties in obtaining working capital, and many companies are forced out of business. APEC (2009) discussed the impacts of the current crisis on SMEs in APEC economies and noted that times of crisis are ideal for organisations to re-examine their current status and strategies for the future, to cultivate the ability to respond appropriately to crises and to search for new business opportunities. During the crisis customers cancelled orders and delayed payment, so that many SMEs had problems with liquidity and urgently sought bank loans. The banks' risk-averse lending policies prevented easy access for SMEs to loans and increased their funding costs dramatically. SMEs generally adopted one of three strategies:

- Cutting costs by adjusting production schedules, running down inventories or laying off employees to cut payroll expenses;
- Actively seeking alternative funding sources to maintain liquidity;
- Postponing investment and expansion plans, re-evaluating the benefits of planned investments and focussing on maintaining cash in hand to get through the crisis period.

During the crisis in 2008-09, many SMEs failed to recognise the implications of the crisis and failed to adopt suitable preparedness measures. APEC (2009) suggested that SMEs need to establish early warning systems and undertake diagnostic analysis of the state of their business so that they can identify latent problems as early as possible. Areas on which SMEs should focus included:

- Monitoring changes in the global economic environment
- Taking potential crises into consideration when formulating business strategies
- Establishing a financial early warning system
- Formulating hedging strategies appropriate to their own particular needs
- Crisis management planning
- Building up the firm's internal resources, including training and R&D, to enhance professional expertise of the workforce and strengthen its technological capabilities.

The SME Economic Crisis Monitor was set up by APEC to assist SMEs to monitor economic developments in order to anticipate and manage economic crises (APEC 2011b). One of the key learnings from the crisis for tropical producers has been the longer term need for SMEs to refocus some production on domestic demand. The key issues that need to be addressed for SMEs are firstly, designing and implementing effective policies and programmes to improve SME access to finance and secondly, assisting SMEs to adopt new technologies and access new markets, both domestic and regional. Enhancing government-private sector collaboration in designing policies and programmes is also considered critical. APEC suggests a number of guiding principles for responding to global financial crises, the most relevant of which are evaluated and discussed in Section 7-Recommendations.

Impacts on tropical timber trade

General observations on the impact of the global economic crisis on the global tropical wood products trade are as follows:

- The impacts on construction and consumer spending in developed economies resulted in significant effects on demand for tropical wood products in the developed economies – particularly in North America and Europe – although the effects were uneven in European countries.
- While demand waned in Europe and the USA as a result of the crisis, domestic demand in producer countries and in some parts of Asia, expanded. In the long-term the crisis may have reinforced existing trends in the tropical trade as consumer demand for end-use tropical wood products exports shifts from the US and Europe to Asia.
- Growth in consumption, and imports, of primary wood products in China and India, has cushioned the impact of the crisis for tropical primary wood products exporters. China's tropical log imports dropped in 2009 but recovered to pre-crisis levels in 2010.
- Many tropical producer countries diversified their trade patterns during the crisis to focus more on intra-regional trade and other new emerging markets.
- Tropical wood products have been losing market share in a number of applications to a range of alternative wood and non-wood products, a trend that had been occurring well before the economic crisis but reinforced by reduced price expectations during the economic crisis.

- The current crisis reinforces the risks associated with being only export oriented. A number of ITTO producer countries export a significant proportion of their wood products production and are thus exposed to external demand shocks (Table 3.2).

Table 3.2: Percentage of production that is exported, ITTO producers, 2010.

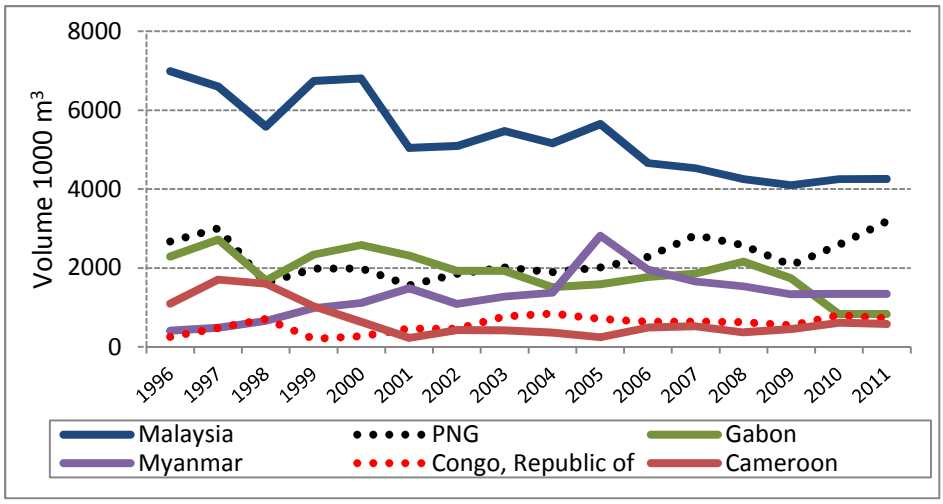
ITTO producer country	Tropical logs	Tropical sawnwood	Tropical veneer	Tropical plywood
Bolivia	1	24	34	52
Brazil	0	4	7	31
Cambodia	3	37	4	0
Cameroon	31	86	82	57
CAR	27	24	7	1
Colombia	1	5	0	3
Congo, Dem. Rep.	77	55	8	4
Congo, Rep.	61	87	52	1
Cote d'Ivoire	9	88	16	32
Ecuador	22	0	5	25
Fiji	3	7	4	4
Gabon	21	86	41	56
Ghana	13	47	7	88
Guatemala	18	16	16	0
Guyana	28	46	0	63
Honduras	0	88	0	0
India	0	0	5	6
Indonesia	0	15	3	77
Liberia	3	0	0	0
Malaysia	23	67	41	99
Mexico	1	2	51	2
Myanmar	33	10	96	12
Nigeria	1	0	2	0
Panama	23	9	26	2
Papua New Guinea	91	24	2	69
Peru	0	29	79	29
Philippines	3	63	5	1
Suriname	22	8	0	0
Thailand	0	98	1	1
Togo	75	0	0	0
Trinidad and Tobago	11	2	0	0
Vanuatu	0	0	0	0
Venezuela	0	0	0	0

Source: ITTO Statistics Database

Tropical log trade

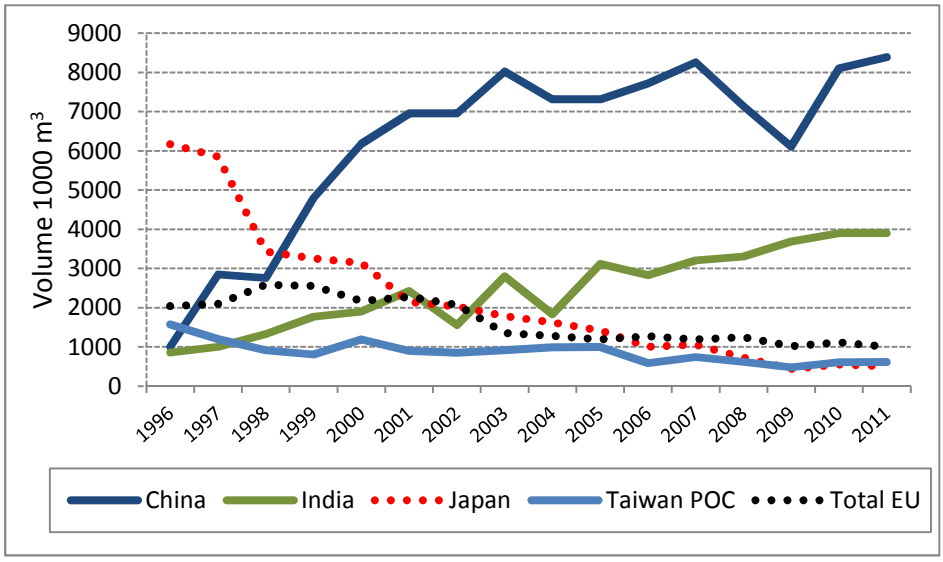
Figures 3.4 and 3.5 indicate tropical log trade trends by major supplying and importing country. Tropical log exports by ITTO producers dropped by 5 percent in 2008 and 12 percent in 2009, reaching a low of 11.3 million m^3.

Figure 3.4. Tropical log exports, major ITTO exporters, 1996-2011,



Source: ITTO statistics database

Figure 3.5. Tropical log imports, major ITTO importers, 1996-2011



Source: ITTO Statistics Database

Malaysia, the largest exporter, accounts for about 37 percent of ITTO's export volume. Malaysia's log exports declined marginally in 2009 to 4.1 million m^3 in 2009, although they have been contracting over the last decade as log export supplies have become more restricted and government policies to increase value-added processing have taken effect. In 2009, growth in Malaysia's tropical log exports to India compensated to a certain extent for the downturn in log demand in other markets, particularly China, Japan and Taiwan POC: India absorbed 37 percent of Malaysia's reported log export volume in 2008 and this share rose to 52 percent in 2009. Although Malaysia's log exports

have been declining, they have remained at about 22 percent of log production over the last five years.

Papua New Guinea's exports have been overwhelmingly to China and have therefore been dependent on market conditions in China. China's tropical log imports dropped in 2009 in response to declining demand for China's exports of tropical processed wood products (mainly wooden furniture, flooring and plywood) in the USA and EU countries, a reduction in tax rebates for some wood product export items (although they were partially reinstated in 2009), and to a lesser extent by a downturn in the domestic construction industry. Imports recovered sharply in 2010, increasing 33 percent on the previous year, reflecting a recovery in China's housing sector and government policies to stimulate domestic consumption, as well as a recovery in export demand in China's SPWP markets. China had also been actively seeking alternative log sources to Russia, the dominant log supplier (all sources) following uncertainty regarding the implementation of its log export tax in 2009. Myanmar's tropical log exports have been trending downwards since 2005, but this trend has been supply rather than demand driven as resource availability has steadily declined. India has been the major market and its imports grew during the crisis period, although trade sanctions had been imposed on Myanmar since 2003 in the US and 2007 in the EU.

The global economic crisis had a significant effect on directions and composition of trade from the African region. In Gabon, log export quotas were imposed in 2008 but subsequently relaxed during the global recession to maintain revenues and business under poor trading conditions. Although the predominant species exported is okoumé, its share of the export volume declined, from 52 percent in 2007 to 42 percent in 2009 (ATIBT 2010). This can be attributed to okoumé logs being targeted for use in domestic wood processing and higher value species being promoted by exporters during the global economic crisis. The number of species in the export mix was also reported to have declined during the economic crisis as less funding was available for promotion of lesser known species.

In November 2009, Gabon announced more severe log export restrictions to prohibit the export of undressed roundwood. The ban was not implemented until May 2010, with roundwood buying activity from China and France (the major importers) triggering an upsurge in demand in the interim period before declining to date. Chinese imports were more than compensated by the increase in imports from PNG and the Solomon Islands. In other major ITTO African supplying countries – Cameroon, Republic of Congo and DR Congo - some log exports were diverted away from European destinations, where demand had dwindled, to the growing Chinese market. Cameroon had also relaxed log export controls during the crisis as the wood processing sector suffered setbacks under depressed global market conditions. The log export quota on prime species was reimposed in 2011, but exports of lesser-known species have been allowed to continue.

Tropical sawnwood trade

Figures 3.6 and 3.7 indicate tropical sawnwood trade trends by major supplying and importing country. The major trends are as follows:

- A significant drop in sawnwood import demand occurred in 2009, particularly in the EU where imports reached record low levels in 2009 and have remained in a slump to date. The effects of the crisis have been uneven across Member States and are discussed in more detail in section 4.2.

- Much of the tropical sawnwood trade is within the Asian region, with China and Thailand the major importers, and Thailand, Malaysia, Indonesia and Laos (not an ITTO member) the major exporters. (Thailand imports structural sawnwood from Malaysia and exports rubberwood sawnwood from its own plantations). Tropical sawnwood is used in a range of applications depending on the quality and species, and is used in domestic construction and re-manufactured in the region's furniture, moulding and joinery industries. While regional domestic consumption of wooden furniture and joinery has been growing, the downturn in the EU, US and Japanese markets negatively impacted demand during the peak of the crisis. However, the crisis intensified the trend towards increased trade within the region.

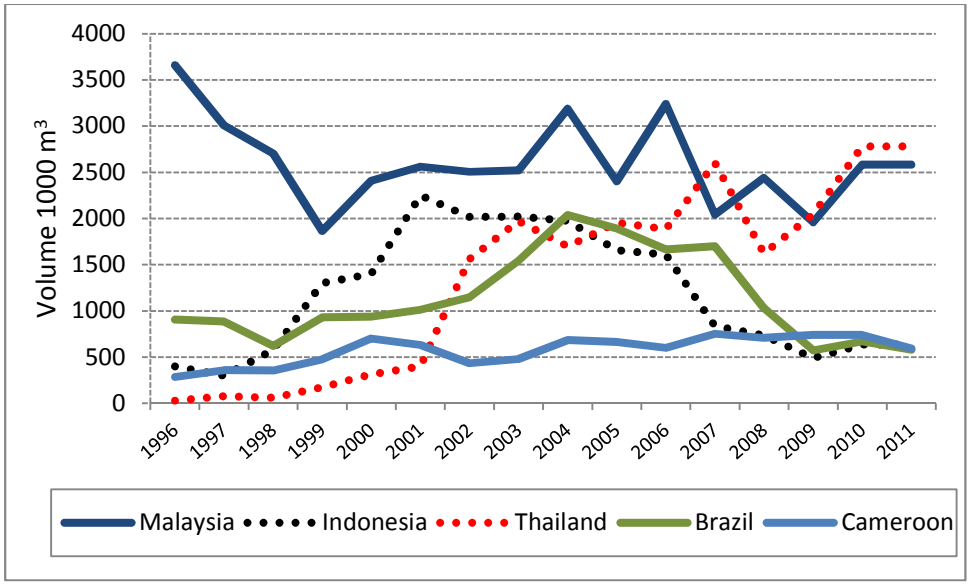
- China's imports declined between 2004 and 2008, but bucked the trend in other importing countries by rebounding in 2009 and reaching a record high in 2010 as log export restrictions from tropical and temperate supplying countries (particularly Russia and Gabon) created a substantial log supply gap, demand for sawnwood in China's furniture and flooring industries rose, and imported tropical sawnwood became more price competitive than tropical sawnwood manufactured in China (see section 4.1).

- Thailand's substantial tropical sawnwood imports are predominantly sourced from Malaysia, and Laos: Thailand's imports from Malaysia are mainly structural material which are consumed locally while imports from Laos are re-processed and exported as finished products and are therefore sensitive to demand trends in export markets. In 2010, unrelated to the global economic crisis, political unrest impacted the Thailand economy and construction sector and imports dropped. As discussed previously, a high incidence of illegal logging and poor governance in Laos implies that the trade is suspected to be higher than that officially recorded, with 'creaming' of higher value and large diameter logs suspected during the crisis period.

- Malaysia has a notably diverse range of tropical sawnwood export markets, with market diversification being a key export strategy for sawnwood and other wood products before the onset of the demand crisis. In addition to China, Thailand and EU destinations, other important markets include Taiwan POC, Singapore, the Philippines, United Arab Emirates, Maldives, Yemen, and Sri Lanka. Of note has been the developing trade with the Middle East, which has no significant restrictions or barriers to wood product imports.

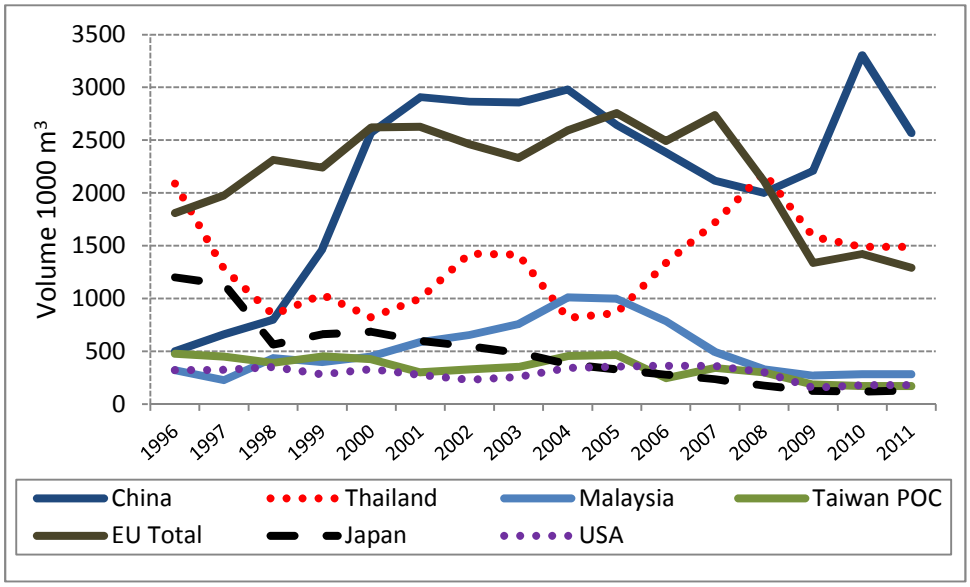
- Thailand, however, has more restricted export market destinations, with nearly three-quarters of Thailand's exports shipped to one market - China - and most of the remainder destined for Malaysia. Thailand's tropical sawnwood exports are predominantly of lower cost plantation grown rubberwood which was in high demand during the crisis period, and Thailand's exports followed the trend of its major market - China, increasing substantially in 2010.

Figure 3.6. Tropical sawnwood exports, major ITTO exporters, 1996-2011



Source: ITTO Statistics Database

Figure 3.7. Tropical sawnwood imports, major importers, 1996-2011



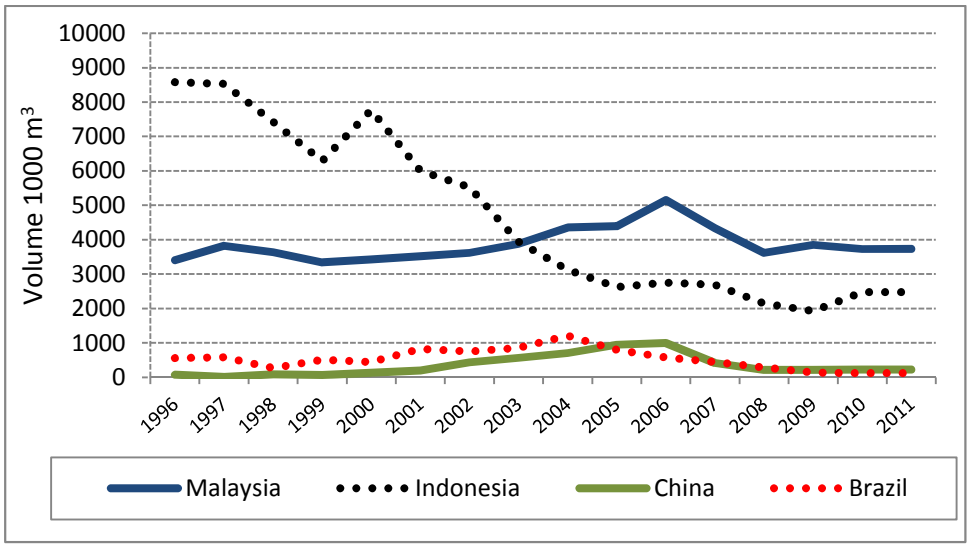
Source: ITTO Statistics Database

Tropical plywood trade

Figures 3.8 and 3.9 show trends in the tropical plywood trade over the last 15 years by major supplying and importing country. Malaysia and Indonesia are the major suppliers, with Indonesia's declining exports over the last decade reflecting reduced availability of peeler log supplies and lost sales because of concerns over the legality of Indonesian supply in major markets. By contrast, Malaysia's exports have generally maintained their volume levels (and increased their share of total tropical plywood exports) because of its more advanced certification programme, and aggressive marketing of its products (USITC 2010). The factors affecting competitiveness of plywood exports have been mainly related to supply-side issues which have been affecting the trade well before the

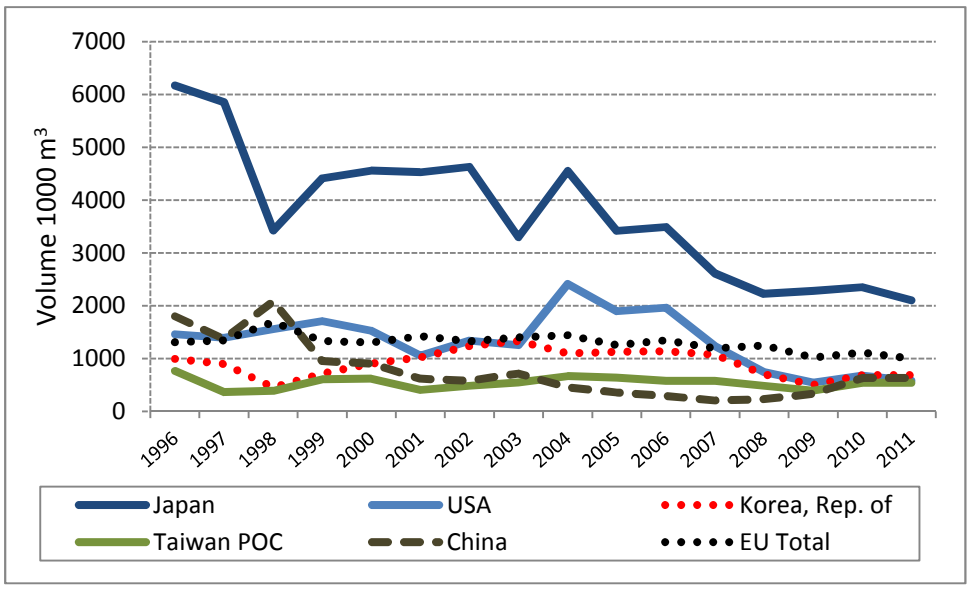
global economic crisis – specifically, access to supplies of peeler logs of the appropriate quality and international concerns about legal sourcing and governance. Plywood products have been losing market share to substitute products in both structural and appearance grade applications. The emergence of China as a major player in the tropical plywood export trade, and stricter quality and environmental product standards in import markets, have been other major developments which have been influencing the trade.

Figure 3.8. Tropical plywood exports, major ITTO exporters, 1996-2011



Source: ITTO Statistics Database

Figure 3.9. Tropical plywood imports, major importers, 1996-2011



Source: ITTO Statistics Database

Japan's imports have been declining over the last decade as housing starts and construction activity have fallen (see Figure 2.7) and other panels have become more competitive, particularly softwood plywood and OSB in concrete formwork and packaging applications, and MDF and particleboard in

flooring applications. Japanese plywood manufacture has transitioned from tropical hardwood to predominantly softwood logs as design improvements in the rotary lathes for veneer manufacturing have enabled veneer production of an acceptable quality from smaller diameter Russian and increasingly, Japanese logs. Japanese consumers have also become more accepting of the appearance of softwood plywood. The market for tropical plywood in Japan has also become more specialised, focusing on a narrower range of niche markets.

Japan's tropical plywood imports have risen periodically over the last decade in response to the availability of tropical logs for domestic plywood production, and the relative prices of domestically produced tropical plywood compared with imported plywood from Malaysia and Indonesia. In 2007, imports fell 25 percent as a result of rising prices of Indonesian and Malaysian plywood and a dip in housing starts caused by poor implementation of the Building Standard Law, which was intended to help crack down on falsification of earthquake resistance data for buildings. In 2008, imports remained low as global economic conditions deteriorated. Although Japan's total plywood imports fell 18 percent in 2009 to 2.9 million^3 as a result of depressed housing starts, imports of tropical plywood increased slightly to 2.4 million m^3. This increase, which is counter to the downward trend in tropical plywood imports over recent years, may have been due to a decline in capacity of Japan's domestic tropical plywood mills which were reported to be curtailing production by 20 percent to 30 percent in 2009 because of a depressed domestic market. Domestic mills also had difficulties in sourcing tropical peeler logs from Malaysia as China and India's log demand escalated, reducing log availability. In late 2009, with Japan's plywood demand low and prices depressed, Malaysian suppliers were reportedly switching to other markets leading to severely reduced inventories in Japan. In 2010, housing starts had improved slightly and domestic mills had difficulties sourcing tropical logs as demand in China and India escalated.

The earthquake and tsunami in March 2011 initially posed another demand shock to the Japanese economy which impacted plywood demand. Japan's industrial output plunged immediately after the disaster and housing starts declined. Some domestic plywood capacity had been affected, with around 25 percent of plywood capacity reported to be destroyed and supply disruptions and power shortages to viable plants reducing production levels. However, by mid-2011, damaged plywood mills were resuming production and mills that were not damaged increased production by almost 20 percent to meet demand for emergency housing in the affected areas. Many mills had been running well below capacity and were able to increase production levels. Immediately after the disaster, a surge in plywood imports and aggressive purchasing occurred, pushing up plywood prices. Most of the increase was from China and North America, with Indonesian producers unable to expand production because of log availability problems. Although plywood requirements for emergency repair work in the affected region were very high until mid-2011, demand in the major plywood consuming regions was slow and by August 2011, demand for plywood for emergency housing had peaked, and total plywood demand and imports began to drop. The post-tsunami building programme will continue, but the medium to long-term demand for tropical plywood will continue to be affected by considerable substitution by softwood plywood and other panel products.

Prior to the global economic crisis, the USA was a major global importer of tropical plywood, with imports totaling about 2 million m^3 in 2006. Imports from Malaysia, Indonesia and Brazil had been losing market share to imports from China, which became the largest supplier in 2007. Imports

began to drop steeply in 2008 in response to the housing shock and declining consumption which began in 2007. US demand for hardwood plywood is derived from demand for cabinets, furniture, store fixtures, recreational vehicles and manufactured homes, as well as residential house construction and remodeling. The price competitiveness of tropical plywood from China became a major concern to US hardwood plywood manufacturers in the period before the economic crisis, when rising raw material and labour costs had put upward pressure on US manufacturers when lower input costs from competing imported plywood put downward pressure on finished product prices.

The US International Trade Commission launched a formal investigation in March 2007 of the legality of wood product supplies from China and other countries that could be affecting the US hardwood industry. In 2008, they concluded that the increase in market share from imported hardwood plywood was due to shifting US consumer preferences, improved logistical capabilities in distribution and retailing which enabled improved sourcing of imported products, and a trend for US producers to broaden their product lines or supplement domestic production with imports of finished products (USITC 2008). During and post-crisis, in addition to reduced demand levels, the market has also been influenced by: the US Lacey Act amendments, which require US importers to ensure their imports of plant products, including tropical plywood, are from legal sources; the introduction of stringent control measures of formaldehyde content in composite board products in California in 2007 (which was subsequently extended to the whole country) and; increased demand for green building products (i.e. products certified by the LEED™ Green Building Rating System).

In EU markets, in 2009 the global crisis increased the hardwood plywood market focus on price at the expense of quality. With lower price expectations, demand for combi-plywood products (using low-value core material such as softwoods, palm, coconut and poplar) increased while demand for more costly tropical hardwood throughout plywood waned. The tropical–throughout product began to be confined to applications where it was specifically required, such as in applications where high durability or aesthetics are paramount, rather than as a general utility product with a larger-sized market niche. This provided a competitive advantage for Chinese combi-plywood products, although Malaysian plywood producers, in response, introduced their own combi-plywood with a tropical hardwood face and radiata pine core (Oliver and Donkor 2010).

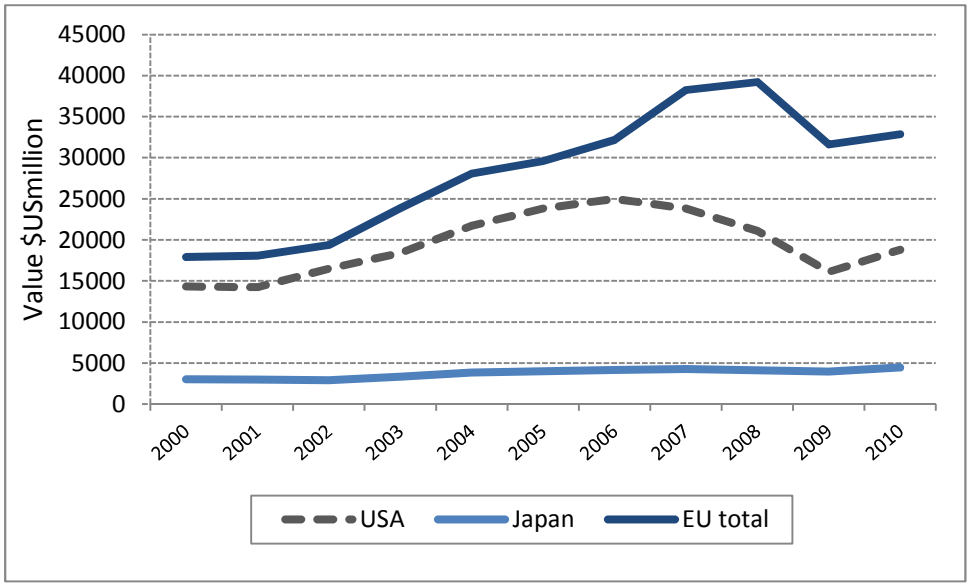
Oliver and Donkor (2010) noted that an important factor in plywood competitiveness during the demand downturn in 2008-2009 was the ability to supply orders, both large and small, at short notice and to mix shipments of plywood with other products because distributers and manufacturers had become more reluctant to hold stock. Plywood manufacturers in Europe and North America exploited their proximity to the customer by providing special services such as component assembly, special packaging, product or plant engineering support, and logistics support.

Secondary processed wood products trade

The dominant markets for secondary processed wood products are the developed economies – notably the USA, EU countries and Japan - which were severely affected by the global economic crisis. The global demand for wooden furniture and joinery products followed the trend in housing starts and consumption in those countries and global imports dropped in 2009, ending a period of significant growth in global trade over the previous decade (Figures 3.10 and 3.11). With some signs

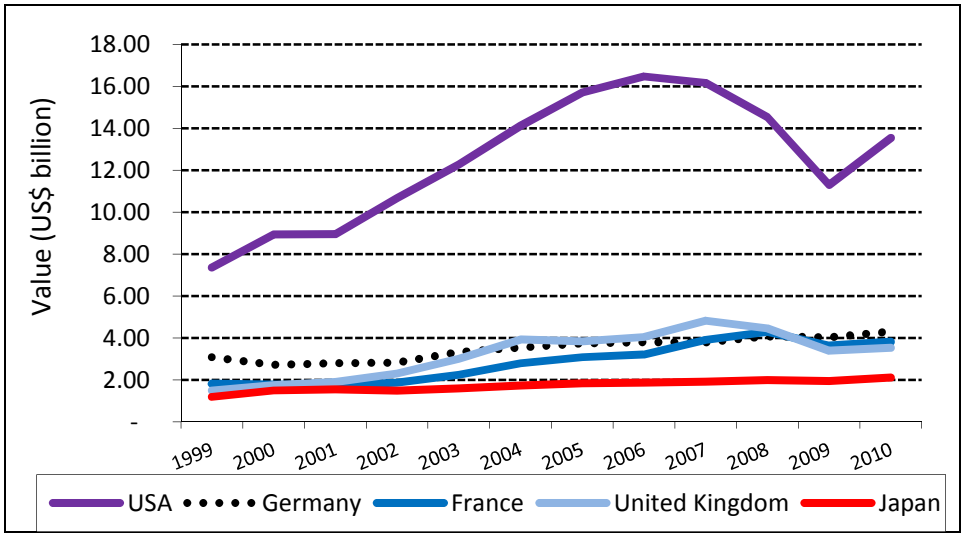
of recovery in construction demand, world SPWP imports picked up in 2010 and were valued at US$82 billion, although this value was significantly lower than the pre-crisis peak in 2007.

Figure 3.10. Secondary processed wood products imports, major importers, 2000-2010



Source: COMTRADE

Figure 3.11. Wooden furniture and parts imports, major importers, 1999-2010

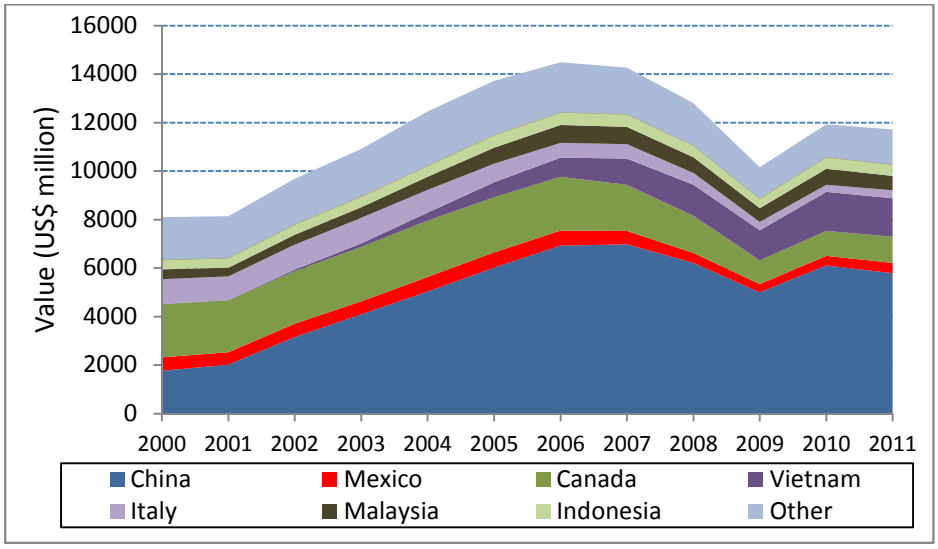


Source: COMTRADE

In the USA - the major country importer accounting for nearly one-quarter of world imports - imports of SPWPs slowed in 2007 and 2008 and fell 24 percent in 2009, as consumer demand plummeted following the collapse in housing starts, higher unemployment and reduced household income. Of the top 20 countries shipping wooden furniture to the USA, a majority experienced double-digit falls during the period (Figure 3.12). Although China remained the dominant supplier its shipments to the USA had fallen in 2009, while imports from Vietnam had increased (Figure 3.12), reflecting Vietnam's comparative advantage in labour and overall production costs compared with

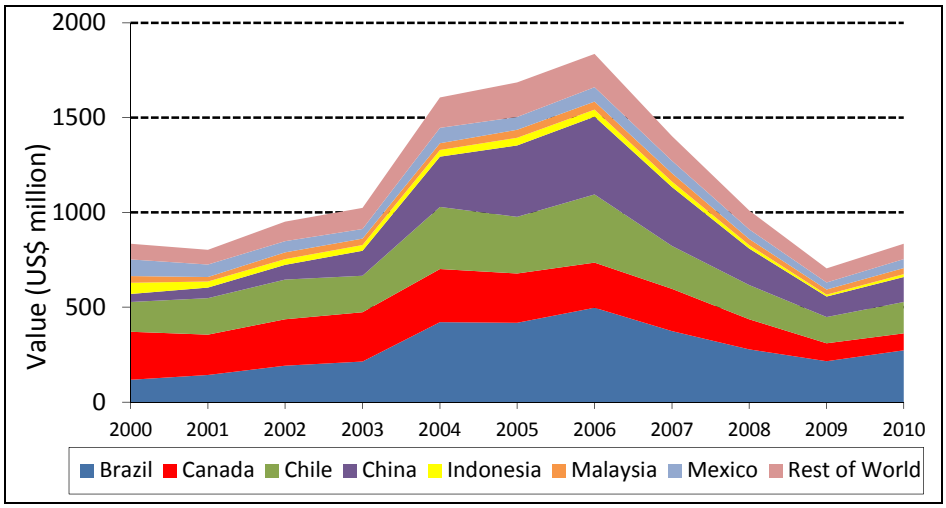
China, and as China shifted its focus on developing other markets. In 2010, US import values rebounded from three successive years of declining growth, increasing 17 percent on the previous year and assisted by US growth in employment, low interest rates and stabilising home prices which had increased consumer spending and demand for furniture. However, the post-crisis period has experienced rising furniture prices driven by an increase in production costs in China and Vietnam and as Chinese producers have been moving up the value chain to produce higher value products. This implies that the volume of furniture demand may not have increased. Figure 3.13 shows US imports of wooden mouldings which plummeted by more than 60 percent between 2006 and 2009, following trends in residential and non-residential building activity, and had recovered only modestly in 2010 as housing starts remained at very low levels.

Figure 3.12. US imports of wooden furniture and parts by major country of origin, 2000-2011



Source: Global Trade Atlas. Note: Wooden furniture and parts includes HS codes 9401.61; 9401.69; 9403.30; 9403.40; 9403.50; 9403.60.

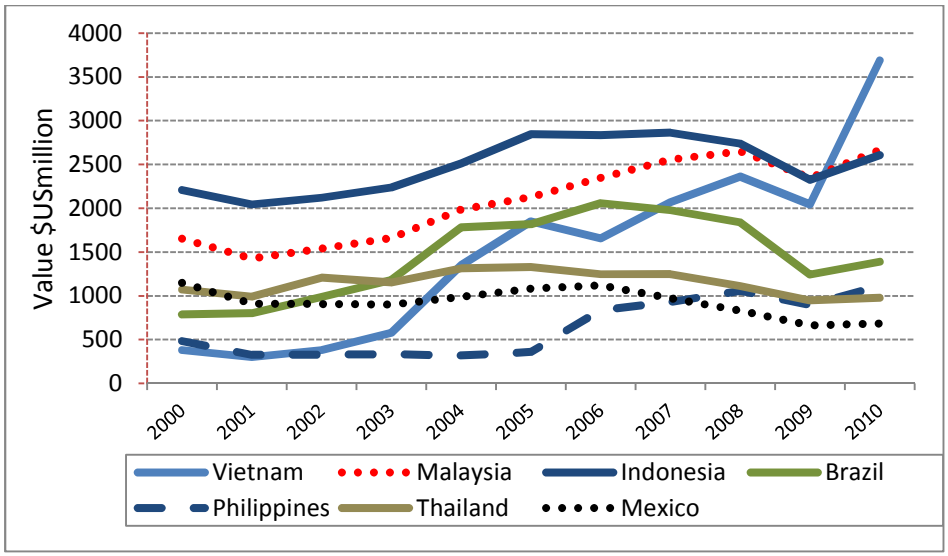
Figure 3.13. US imports of wooden mouldings by major country of origin, 2000-2010



Source: COMTRADE

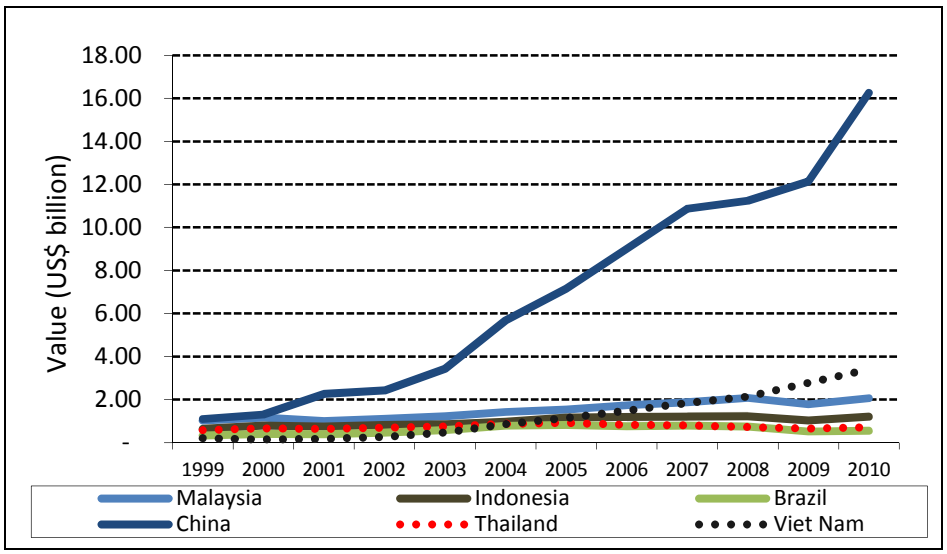
The value of the EU's imports of SPWPs had grown significantly in the decade to 2008, with significant structural changes occurring in the furniture and joinery industries in many EU countries as imported products from Asia became more cost competitive in many market niches (see section 4.2). Imports dropped significantly in 2009 and remained low in 2010, with economic uncertainty in the euro zone likely to dampen any sustained recovery in imports to pre-crisis levels. Germany, France and the United Kingdom were the largest country importers in the EU, followed by Italy, the Netherlands and Belgium, with most of the major importers recording a minor turnaround in imports in 2010.

Figure 3.14. Secondary processed wood products exports, major tropical exporters, 2000-2010.



Source: COMTRADE

Figure 3.15. Wooden furniture and parts exports, China and major tropical exporters, 1999-2010



Source: COMTRADE

China's domination of the SPWP export trade is apparent, particularly in wooden furniture and parts which is the largest category of SPWPs (and accounts for about 60 percent of the global SPWP trade

by value). Despite the demand crisis, China's SPWP exports grew during the crisis and recovered strongly in 2010 (Figure 3.15). Although Vietnam's wooden furniture producers have been reliant on imports of raw materials, the use of materials from domestic sources has increased and Vietnam's export markets are the most diversified of the tropical producers, shipping to over 100 country destinations, although the major markets are concentrated in the USA, the EU and Japan.

Oliver and Donkor (2010) noted that supply chain responsiveness, with "short production cycles requiring rapid delivery times, and 'agile' supply chains, has become more important in the context of the furniture industry which now places a significant premium on the ability to adjust rapidly to changing fashions. The credit crunch and onset of recession at the end of 2008 also increased the focus of construction materials suppliers on the maintenance of lower stocks and just-in-time delivery". Those suppliers with poor connectivity to international trade routes have tended to focus on exports of primary wood products due to a lack of access to Western consumers, the high costs of importing raw materials for value-added manufacturing, and the unwillingness of highly skilled staff to locate to isolated areas. They argue that moves to increase the competitiveness of tropical producers in value-added wood processing, which is important for survival during global demand shocks, cannot be viewed in isolation to improve transport infrastructure.

Impacts on tropical timber prices

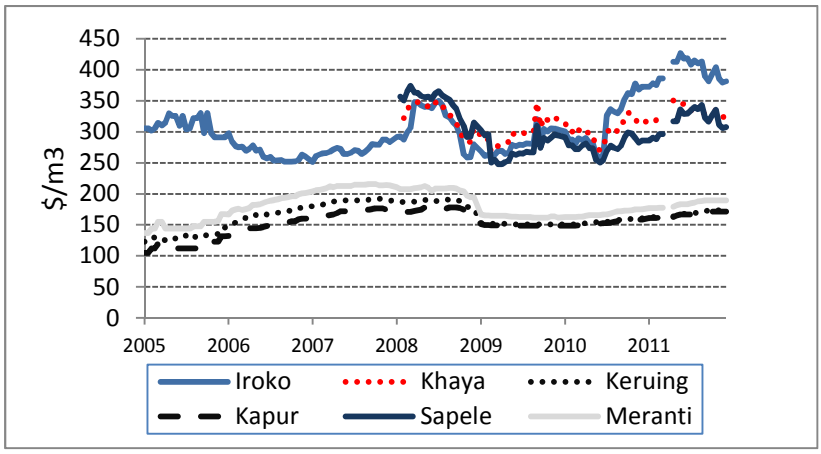
Figures 3.16, 3.17 and 3.18 show price trends for tropical primary wood products from January 2005 to December 2011 for various tropical species.

Tropical timber price trends vary widely depending on the market sector and end-use activity in the particular sector. However, some general observations on tropical timber price movements, particularly over the crisis period, are as follows:

- Tropical log and sawnwood prices have shown high volatility over the last five years, particularly during the global economic crisis, with fluctuating supply-side and demand-side factors influencing prices. Nominal FOB prices for sapele, for example, dropped 32 percent between mid-2008 (when they had reached a peak) and March 2009 (ITTO MIS). These marked price swings had not been experienced since the Asian financial crisis in 1997/98. Price stability is perceived to be an important source of competitive advantage because it facilitates forward planning and reduces risk (Oliver and Donkor 2010). Price movements of some temperate hardwoods such as European oak have been less volatile than tropical hardwood prices.
- Tropical log, sawnwood and plywood prices rose significantly between 2007 and mid-2008, coinciding with a period of increasing global demand and as supplies of tropical logs became more restricted. Freight rates had also pushed up prices, with maritime freight rates reaching historic highs in early 2008 (Figure 2.11).
- From mid-2008, prices suffered a major reversal as demand-side factors became dominant, with prices plunging until early 2009, when the global economic crisis had reached its height. Freight costs had also declined, relieving upward pressure on prices from rising freight costs which had been evident in the pre-crisis period.
- In 2009, prices fluctuated but remained relatively low, with prices rising periodically as importers restocked their inventories following low purchasing activity, and reflecting relatively buoyant demand in China and India.

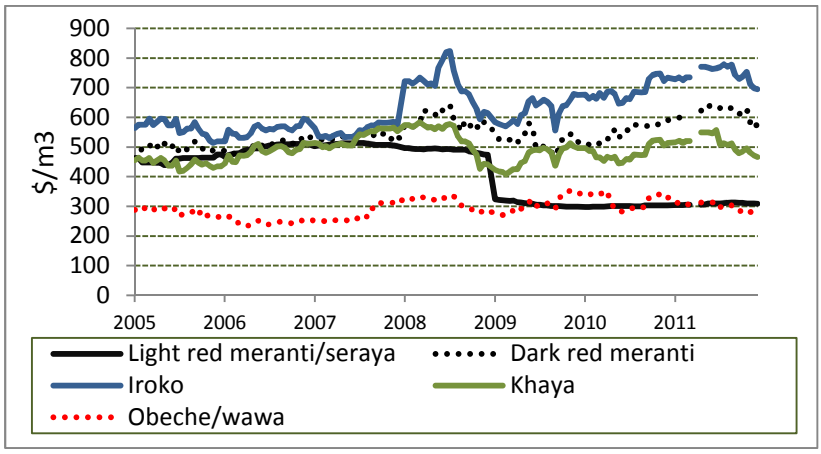
- In 2010, prices increased rapidly as demand remained strong in India (for infrastructure projects) and in China (as a replacement for Russian logs and as demand had picked up in China's SPWP export markets) and as supply was disrupted following the introduction of log export restrictions in Gabon and political unrest in Cote d'Ivoire, in addition to unseasonal weather conditions in Malaysia.
- In EU markets, the economic downturn was reported to have narrowed the price differential between certified and uncertified plywood products as the relative availability of certified material increased and exporters reduced their prices of certified products in an effort to maintain market share. Those exporters with access to certified material aggressively marketed their products, emphasising that they could provide environmentally certified product at little or no price premium (ITTO 2011).

Figure 3.16. Tropical log price trends, 2005-2011



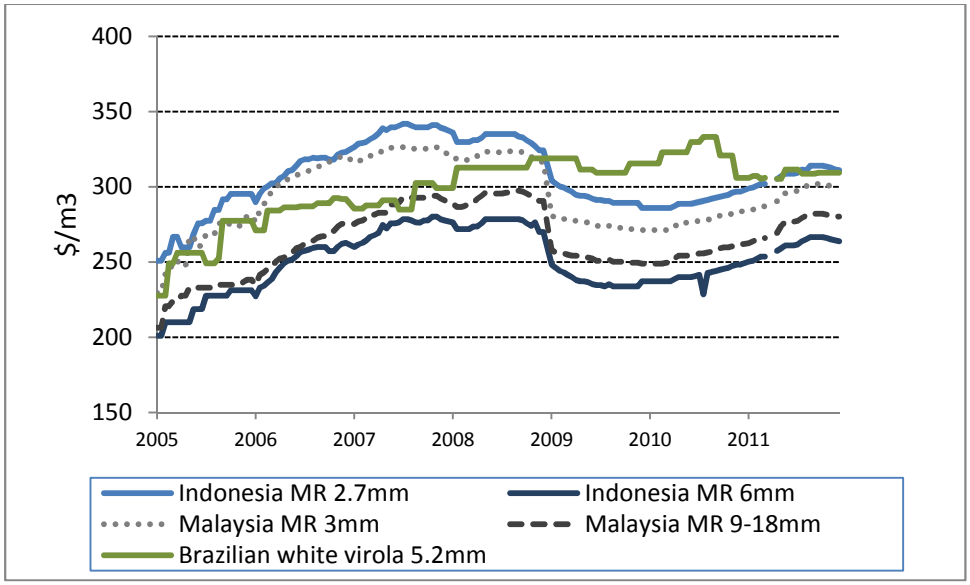
Source: ITTO Market Information Service. Note Prices in constant 1990 US dollars per cubic metre, FOB, deflated by the IMF consumer price index for industrialised countries.

Figure 3.17. Tropical sawnwood price trends, 2005-2011



Source: ITTO Market Information Service. Note Prices in constant 1990 US dollars per cubic metre, FOB, deflated by the IMF consumer price index for industrialised countries.

Figure 3.18. Tropical plywood price trends, 2005-2011



Source: ITTO Market Information Service. Note Prices in constant 1990 US dollars per cubic metre, FOB, deflated by the IMF consumer price index for industrialised countries.

The price differentials between tropical hardwood compared with coniferous primary wood products also narrowed during the global economic crisis. Table 3.1 shows price differentials for the average unit values of logs, sawnwood and plywood exports. The price differential between tropical hardwood and coniferous wood products rose to 2008, reflecting the increasing scarcity of tropical logs and significantly high demand during a period of high economic growth. In 2009 and 2010, the differentials narrowed for all products, reflecting the relatively low demand levels but increasing demand for lower priced softwood products, particularly in India and China. Trends in tropical hardwood compared with temperate hardwood unit values are more difficult to discern but tropical log and plywood prices rose relative to temperate hardwood prices in 2009, while the sawnwood price differential narrowed.

Table 3.3: Price differentials, coniferous, tropical hardwood and temperate hardwood primary wood products, 2005-2010.

	2005	**2006**	**2007**	**2008**	**2009**	**2010**
Tropical/coniferous						
• *Logs*	2.27	2.53	2.45	2.99	2.80	2.71
• *Sawnwood*	1.51	1.47	1.33	2.01	1.59	1.44
• *Plywood*	1.12	1.27	1.19	1.29	1.04	1.01
Tropical/temperate HW						
• *Logs*	1.30	1.33	1.16	1.50	1.67	1.42
• *Sawnwood*	0.71	0.74	0.66	0.78	0.63	0.63
• *Plywood*	0.56	0.63	0.63	0.61	0.82	1.02

Source: ITTO statistics database. Price differentials have been calculated as the average unit value ($/m^3) of tropical wood product exports divided by the average unit value of coniferous (or temperate hardwood) wood product exports for a specified year.

Concluding remarks

The global economic crisis has revealed a number of factors which would contribute to the vulnerability of the tropical timber sector during an external demand shock. One of the most important is the preponderance of SMEs in tropical timber wood processing, many of which had problems with liquidity and difficulties in accessing finance during the crisis, as well as problems in adopting new technologies and accessing new markets. The emerging need to refocus some production on domestic demand means that these key issues need to be addressed in improving resilience to future downturns in international demand.

There have been benefits, however, in the rationalisation of SMEs and downsizing of the tropical wood processing industries, with consolidation around the larger enterprises. The significant structural changes of tropical wood processing enterprises which occurred in many tropical producer countries as a result of the crisis have no doubt improved their overall competitiveness. Tropical timber competitiveness issues had become more relevant during the economic crisis, with factors such as price, product differentiation and supply chain responsiveness (particularly just-in-time delivery) becoming more important.

The global economic crisis has intensified the emphasis in consumer countries on assuring that tropical wood imports are sourced legally and obtained from sustainably managed forests. However, the downturn in demand in ITTO consumer countries has emphasised the importance for ITTO producers of domestic and regional demand growth. Much of this demand growth has been in markets which place little emphasis on certification and legality verification, with implications for SFM.

The global economic crisis has accelerated trade trends which existed before the crisis, especially the shift in trade towards emerging markets, particularly in the Asian region, and the growth in intra-regional trade. Substitution of tropical wood products by a range of alternative wood and non-wood products had also been occurring well before the crisis, but reinforced by reduced price expectations during the crisis.

A number of ITTO producer countries – particularly Cameroon, Democratic Republic of Congo, Republic of Congo, Côte d'Ivoire, Gabon, Honduras, Malaysia, Papua New Guinea, and Thailand – export a significant proportion of their production. The vulnerability of exporters engaged in tropical primary wood products exports has not been as severe as initially predicted, largely because of the rapid growth in exports of primary products to China and India, whose domestic markets have grown.

4 IMPACTS ON TROPICAL TIMBER DEMAND – CONSUMER MARKET CASE STUDIES

4.1 Consumer case study – CHINA

Introduction

Over the last two decades China has become the most important country importer and exporter of wood-based products, including wood products of tropical origin. Importantly, it recovered strongly from the worst effects of the global economic crisis which had reduced demand for its value-added products in consumer markets. Aggressive economic stimulus measures targeting both the general economy and the forest and wood based industries contributed to both the recovery in wood product exports and significant growth in the domestic market for wood-based products. Significant post-crisis challenges include the introduction of environmental product standards and legal requirements for legally and sustainably sourced products in export markets in addition to growing labour and raw material costs which are impacting industry competitiveness.

Domestic consumption drivers

Urbanisation and income growth have been, and will continue to drive China's growth in housing demand. Housing demand has stimulated consumption of furniture and joinery, as well as infrastructure development, another major wood products end use. Growth in furniture consumption has driven demand for veneers, sawnwood and wood-based panels, including plywood. Domestic demand for wood-based products has also been stimulated by improved acceptance of wood-based products following the Sichuan earthquake which demonstrated the durability of wood-based buildings, and an improving distribution network for wood construction materials throughout China (Forest Trends 2011).

In response to the global economic downturn in 2008 and 2009, China's economy was boosted by government fiscal stimulus, and adjustments to export tariff rebates to support export-oriented businesses. As a result of these measures China's exports were able to quickly capitalise on a recovery in export markets in 2010. Government economic policy is now focusing on growth which is driven more by domestic consumption than exports and investments, by raising household income, boosting consumption and facilitating expansion of the service sector. A key policy was a reduction of taxes and loan interest rates for residential purchases of single family homes and apartments. The government also introduced "affordable housing" programmes to provide 7.5 million homes to low-income urban households from 2009-2011. The stimulus to domestic consumption resulted in a rise in domestic demand, with growth remaining strong in 2011-2012.

In 2010, with concerns that the real estate market would be heading towards a boom bust cycle, the government tightened measures directed at the property market. These policies included: requesting an increase in down payments and loan rates on second homes; a temporary hold on loans for the purchase of third homes; and a hold on loans to borrowers from outside regions that could not provide proof of a year or more of local tax or social security payment. Although property sales in Beijing and Shanghai declined, continuing urbanisation and steady growth in incomes is expected to underpin strong demand for housing although trend growth rates are likely to slow (EIU 2011).

Historically, China's general consumption levels have been low and this has been attributed to: the high rate of saving owing to people's concerns about the social safety net, low household incomes, and the structural focus on investment. In order to sustain economic growth, China has been introducing policies to remove these constraints in the short and long term, rebalancing the economy from reliance on net exports and capital formation to domestic consumer demand. Consequently, the trade surplus has continued to shrink. Investment growth peaked in 2009 and has continued to slow, as infrastructure investment remained weak after the termination of China's stimulus programme in 2010. However, the slowdown in housing construction - in response to the government's efforts to control the real estate bubble in major eastern cities – has bottomed out as property prices stopped falling during the first quarter of 2012 and increased in some major cities. Construction of government sponsored "affordable housing" had picked up in some areas (Bottelier 2012). China's very low household consumption to GDP ratio (about 34 percent in recent years) may have turned around in 2012 for the first time in over a decade, which is significant given the size of China's population and that China is rapidly becoming one of the largest consumer markets in the world.

The continued rapid rise of real urban wages has been a driving force behind structural changes in the economy and the growth in consumption. Low skilled migrant workers are now in increasingly short supply due to demographic changes and improved living conditions in rural areas. This is driving up unit labour costs and contributing to pressure to move manufacturing further up the value chain towards higher technology consumer products. Many low technology, low margin manufacturing enterprises are closing or relocating to lower cost areas in China or in other countries.

Urbanisation has been contributing to the growth in consumer spending by increasing the affordability and availability of goods, including furniture and value-added wood-based products. By 2020, some 850 million people, representing about 60 percent of the total population, are expected to be living in urban areas, up from about 650 million in 2010. Measures to boost consumption in urban areas include social security measures such as increasing retirement pension coverage in urban areas by 40 percent from 250 million people to 350 million by 2015. Continued industrial and financial reform is expected to increase investment-related sources of income, while the evolving service sector will create more jobs and higher incomes. Both developments will promote private consumption. Per capita disposable income of urban consumers will double between 2010 and 2020, from about $4 000 to about $8,000. That will be close to the current standard of living in South Korea but still a long way from that in some developed countries such as the USA (about $35 000) and Japan (about $26 000). The current vast differences in income levels will persist, however, although the numbers at each level will shift dramatically (Atsimon 2012).

The expansion of China's economy will be concentrated largely in its cities—14 of which will appear on the list of the world's top 25 cities in terms of absolute GDP growth for the next decade. The wealth of urban consumers has been growing rapidly although the great majority of the population at present consists of "value" consumers—those living in households with annual disposable income of between $6 000 and $16 000. "Mainstream" consumers - relatively wealthy households with annual disposable income of between $16 000 and $34,000 - form a very small group by comparison. There are fewer than 14 million such households, representing only 6 percent of the urban population. A small group of "affluent" consumers, whose household income exceeds

$34 000, comprises only 2 percent of the urban population, or 4.26 million households. Because the wealth of so many consumers is rising so rapidly, many value consumers will have joined the mainstream by 2020 when they will account for 51 percent of the urban population.

Although the growth in the urban population has been fuelling consumption growth, the rural population is also recognised as driving consumption levels for wood-based products, with 20 million rural households building houses in 2010. Rural residential income has also been growing at a rapid rate, although considerably lower than that of urban households (Xiaoyu 2011). As one of the important measures to expand domestic demand, the Chinese Furniture Association is starting a movement called 'furniture rustication' to assist farmers in rural areas of China. 'Furniture rustication' involves furniture associations, in cooperation with relevant sectors, such as finance, industry and commerce, selling furniture in rural areas applying incentives so farmers can buy furniture at lower prices. It has been reported that the four largest furniture markets in the south, north, east and west of China will participate in this activity. These four markets are located in medium and small cities, serving both urban and rural areas (ITTO MIS 1-15 July 2009)

The aggressive fiscal stimulus measures and focus on domestic sources of growth has stimulated a sharp increase in domestic demand for wood-based products, including paper products, furniture and building products such as plywood, and wooden flooring. Although China's per capita consumption of wood-based products is low compared with developed economies it is likely to have increased following the housing stimulus programmes (Forest Trends 2011). China is the world's largest consumer and producer of plywood, with domestic consumption increasing in 2009 to 37.5 million m^3, with tropical plywood consumption reaching about 6.1 million m^3, a year-on-year increase of 37 percent. About 80 percent of China's plywood production is estimated to be consumed domestically. China's particleboard production is all consumed domestically, and 95 percent of MDF production is consumed domestically. A significant proportion of wood-based panels are re-processed in the furniture and flooring industries and exported as a component of value-added products. About 78 percent of total furniture production (all materials, by number of sets) was exported in 2010 (Hongqiang 2011).

Production

Impacts on production

China's growth in its wood processing industry over the last decade has been remarkable and has followed the rapid growth in the overall economy. Although sector growth slowed in 2008 and 2009, it picked up in 2010, with growth in primary wood processing and the furniture and pulp and paper industries almost reaching pre-crisis levels (Table 4.1). The sector was, however, negatively impacted by the decline in demand for China's wood products exports in 2008 and 2009, with numerous reports of bankruptcies and closures among China's small and medium-sized enterprises. This suggests that while the overall market remained relatively stable, a massive shift in industry structure occurred (Forest Trends 2011).

Table 4.1: China – Growth rate of value-added industry by sector (Accumulated % increase over same period in previous year)

Period	Wood processing*	Furniture	Pulp and paper
June 2012	13.7	12.0	10.1
May 2012	15.5	12.6	10.7
April 2012	17.8	13.2	11.3
March 2012	19.7	13.5	12.0
December 2011	21.0	15.2	14.4
December 2010	22.4	19.7	16.2
December 2009	17.7	8.8	10.7
December 2008	21.5	13.5	12.4
December 2007	28.8	20.9	17.6

**Processing of timber, manufacture of wood, bamboo, rattan, palm and straw products.*
Source: National Bureau of Statistics of China www.stats.gov.cn

Some of the anecdotal reports of negative impacts of the global economic crisis on China wood processors are as follows:

- "For the first ten months of 2008, China's wood processing industries suffered a total approximate loss of 34 billion yuan, of which: logs sawnwood and chips lost 6.5 billion yuan; the wood-based panel industry lost between 8 and 10 billion yuan; and furniture and other wood products lost between 18 and 20 billion yuan. Forest cultivation, the forest tourism industry and the non-wood forest products industry have also been negatively affected to varying degrees" (ITTO MIS 1-15 January 2009).
- In Zhangjiang City, located in Leizhou Peninsula of Guangdong Province, 130 wood processing enterprises were closed in 2008, while operations were temporarily suspended in other enterprises. Most enterprises were export-oriented, small scale and labour intensive, with employees in these enterprises amounting to nearly 20 000. The Cui Hong Company, the largest wood processing enterprise in Zhangjiang City, suffered a 50 million yuan loss, with exports falling 20 percent and with the average unit price of plywood decreasing by about US$30/m³ (ITTO MIS 1-15 January 2009).
- In Guangxi Province "some 30 to 40 percent of eucalyptus based plywood enterprises ceased or slowed production because of poor sales. Pine-based plywood enterprises stopped producing, with the exception of a few large businesses producing more than 10 000 m^3 per year. In the peeled veneer industry, about 300 enterprises (45 percent of the total) closed down" (Ma et. al. 2009, cites Forestry Department of Guangxi Province, 2008).
- The crisis had negative impacts on forest dwellers' livelihoods and on social stability. Industry closures and slowdowns resulted in unemployment and local social instability. Reduced income and decreased purchasing power restrained increases in consumption (Ma et al 2009).
- A survey of 70 large wood processing enterprises by the Bank of China revealed that during the worst period in the financial crisis, 30 percent of the enterprises were closed and the others were operating at below 20 percent of their capacity (ITTO MIS 1-15 January 2010)
- The economic crisis led to high inventories and significant price drops for wood-based commodities, which put over 50 percent of wood-based panel companies (approximately 3 000 enterprises) in severe financial trouble, with many forced plant closures or production

curtailment. Inventory levels within the wood-based panel and flooring industry exceeded 6 million m^3. Forest products companies located within the Provinces of Zhjiang, Jiangsu and Hebei reportedly laid off a total of 3 million workers, according to official sources (Responsible Research 2010).

Prior to the crisis, labour, energy and raw material costs had risen strongly, putting significant cost pressure on producers and reducing competitive advantage relative to other Asian wood products manufacturers.

Remedial measures

Five government departments released a plan for revitalization of the forest industry to support the industry through the crisis, with industry upgrading and restructuring considered critical for a sustained recovery from the downturn in international demand for wood-based products. The plan aimed to raise the output value of the forestry sector and to maintain growth of around 12 percent annually with focus on supporting 100 national leading enterprises and 10 large wood industry clusters (ITTO MIS 16-30 November 2009). Enterprises that would be favoured had to own a certain area of quality forest land resources, have a large wood processing capacity and have the capacity for further value-added processing. Forest industry policies have focused on moving up the value chain, shifting from resource oriented to technology oriented industry structures, and from government guided to market oriented structures. Primary wood processing is considered a low value-added, low technology and high resource consumption industry and as such has been excluded from domestic banks' priority lending list.

Some of the specific directives in terms of forestry industry development have been:

- market restructuring with emphasis on developing domestic emerging markets, particularly in small cities, townships, rural areas and the western region;
- product restructuring with the focus on brand development and after sale service improvements;
- capital structure optimisation, for lowering capital risks and establishing strategic union;
- raising enterprises' capacity for R&D and technology upgrades;
- increasing environment protection awareness, with emphasis on national and international certification and market access opportunities;
- production customisation to meet different customer needs; and
- encouraging innovation to increase the core competitiveness of enterprises.

Local authorities increased incentives to encourage development of industrial structures. Some new industries, such as biomass energy, biological medicine production, forest food, forest tourism and biomass material have grown.

Export policies have been focused on a "low carbon economy", with export restrictions imposed for resource intensive industries and export tax rebates being gradually cancelled for these items; a neutral policy on labour intensive industries; and significant export incentives for technology intensive industries.

Some geographic changes in wood processing location have occurred in response to the crisis in order to lower certain costs of production. The wood processing industry has been moving gradually

from the Pearl River Delta and Yangtze River Delta to northern and western China. Inner Mongolia has emerged as a new wood processing centre. Heilongjian Province has attracted high profile wood products manufacturers such as An Xin Floors, Nature Floors, Lacquer Craft and Ikea. In 2009, Chengdu in Sichuan Province became the largest frameless furniture manufacturing base in China, while Suqian and Hai'an of Jiangsu Province, Rizhao of Shandong Province, Zhangwu of Liaoning Province and the New Economic Zone of Tianjin were developing major wood manufacturing centres (USDA 2010). Although a primary motivation of production moving inland has been to contain labour costs, many firms have been doing so to capture the domestic market (Economist 2012).

A survey of 70 large wood processing enterprises by the Bank of China revealed that, starting in August of 2009, export orders had risen significantly. Statistics showed that production in about 60 percent of the enterprises recovered to the level before the global financial crisis. Compared with the worst period in 2009, orders in 30 percent of the enterprises rose considerably and in some by 100 percent. A gradual recovery was reported by 20 percent of the enterprises; 30 percent said orders had increased from 30 to 100 percent while another 40 percent said that orders had recovered or even exceeded previous levels (ITTO MIS 1-15 January 2010).

Wood-based panels production

China's production of wood-based panels rose from 25 percent of the world's total in 2005 to 47 percent in 2010. China has more than 6 000 plywood enterprises and most are privately owned and small scale with an output of less than 10 000m^3/annum. It is estimated that about 10 percent of China's wood-based panels production is exported directly, while nearly 30 percent is exported indirectly following re-manufacture into furniture and other SPWPs (Xiaoyu 2011).

By January 2009, almost 50 percent of plywood enterprises had stopped or partially stopped production, and about 20 percent of wood flooring enterprises were also in difficult positions financially. Export-oriented product enterprises were reportedly more severely affected than enterprises catering to the domestic market. (ITTO MIS 1-15 January 2009).

Wood-based panels are the dominant material used in the wooden flooring industry, with China being the world's largest producer of wooden flooring. Production had declined in 2008 to 377 million m^3, in line with trends in domestic construction and export demand in the USA, but recovered in 2009 and exceeded pre-crisis production levels in 2010 at 479 million m^2.

In response to the crisis, the wood-based panel industry has been:

- targeting new product development , with attention on environmentally friendly, high performing products such as bamboo composites;
- restricting particleboard and fibreboard production lines with capacity of less than 50 000m^3, plywood and blockboard less than 10 000m^3, and the use of "good quality" wood in low value applications;
- developing integrated supply chains from raw material to final products;
- encouraging external capital flows via venture capital, private equity and initial public offerings;
- developing internationally competitive enterprises via mergers, acquisitions and consolidation;

- expanding market applications to furniture, construction, interior decoration, toys, car/boat interiors;
- using fast grown plantation materials and extensive use of residues, including urban waste material, crop stalks and bamboo.

The government provided VAT tax rebates for forest industry enterprises, including rebates for products produced with timber residues and small diameter logs, which has favoured the wood panels industry. The government also provided reduced interest rate lending to forest industries with the reduced interest being paid by the State budget. The export tax rebate rates for most wood products were increased in response to the crisis, which effectively reduced the production costs of plywood and other wood-based panels.

Furniture production

The Chinese wooden furniture industry has become a huge integrated sector, built on the rapid development of the domestic economy, high levels of foreign investment, a comparative advantage in skilled labour and raw material costs compared with other manufacturing countries, and rapid growth in exports. Wooden furniture production is resource-based, labour-intensive and with low entry barriers in trade. The industry is fragmented with few large firms and numerous small manufacturers. In 2006 there were only 2149 enterprises with annual sales revenue of more than 5 million yuan, accounting for only 5 percent of the total industry (Han et al 2009). At least 90 percent of enterprises are not state owned. There are geographic clusters where furniture production is located, and over 80 percent of Chinese furniture firms are located in four regions stretching from the south to the east coastline of China. Guangdong Province has been a major furniture production and export base, in addition to Zhejiang, Fujian, and Shandong Provinces.

Table 4.2: China: Large-scale furniture enterprises (Number of enterprises).

	2005	2006	2007	2008	2009	2010
Wood furniture	1,885	2,149	2,399	2,763	3,395	3,701
Total furniture	2,896	3,383	3,865	4,432	5,411	5,876

Source: Hongqiang Y. 2011

The Chinese furniture industry had experienced a significant decline in exports in 2009. In addition, labour costs had increased significantly, rising 20 percent from mid-2009 to mid-2010. In response, the industry has been restructuring, with some of the major developments being as follows:

- Industry consolidation in favour of larger enterprises (Table 4.2) and development of domestic oriented companies with own-brands and distribution channels.
- Improvements in distribution channels, particularly for domestic markets, which have helped to grow the domestic market and lower distribution costs. The formation of industrial parks and centres is consolidating the wood products industry throughout China. Finished consumer wood products (furniture and flooring) are being distributed through professional building materials markets and specialised showrooms for urban consumers. Furniture retail superstores play a dominant role in distributing mid- to high-end wood products. E-business is emerging as an important distribution channel. On-line platforms such as Tao Bao reportedly had over 10 000 furniture stores by mid-2010.

- Processing cost reductions and productivity improvements, assisted by lower raw material costs and energy costs. With regard to lowering raw material costs, the industry has been reportedly substituting MDF and particleboard for plywood in furniture manufacture as the focus shifts to the domestic market which is more price sensitive. Domestically produced plywood has been substituting for imported plywood in high-end furniture manufacture. The furniture industry reported a 29 percent gain in average productivity and 12 percent increase in sales revenue. Companies located in Zhejiang Province, for example, have been successful in developing domestic Chinese markets under manufacturer-owned brands. Similar trends have been observed in the wood flooring sector which is now led by a group of domestic brand manufacturers such as Nature and Anxin (Responsible Research 2010).
- Moving up the value chain, with emphasis on innovation and technological product improvements, utilising "green" design. EIU (2011) noted that Chinese companies "have demonstrated a remarkable ability to assimilate technology, adapt products and processes, and to do so quickly and cheaply". This has been evident in China's furniture manufacturing industry.
- Establishment of furniture "clusters" integrating production, sales, training, R&D and services.

SMEs have been major contributors to China's economy and have been major forces in technology innovation, responsible for 66 percent of patent inventions and 75 percent of new products presented to the market (Yuanchao L. 2009). One of the major problems for SMEs during the economic crisis was a shortage of capital, with venture capital mostly derived from self capital and loans from relatives, and limited investment opportunities available from financial institutions that were unwilling to lend to SMEs. The All-China Federation of Industry & Commerce (ACFIC), a nationwide organization of private enterprises, pointed out in 2009 that the huge government economic stimulus package had not effectively targeted private investment, favouring large-sized enterprises, particularly local government- and state-owned enterprises (SOEs) (ChinaStakes 2009). During the crisis, SMEs with low technology and capital barriers suffered while firms with improved technology and capacities to produce high-value products survived and may have benefited from the reduction in numbers of SMEs in the wood products industry.

In response to the crisis, measures that have been taken to stimulate innovation and drive growth in the private sector and SMEs include the launch of the Growth Enterprises Market (GEM) in 2009, an alternative stock market to stimulate the development of growth enterprises by providing a new source of financing for start-up enterprises, the establishment of business bases for small enterprises with emphasis on training support, and support from the Diversified Financing System (Yuanchao 2009).

Raw material supply

Domestic supply

Domestic supply of wood raw material has failed to keep up with demand in China's industrial wood processing industries, despite massive government efforts in afforestation and reforestation. This reflects both the scale of growth in China's wood processing industries and government's efforts to protect the country's forests. In response to the economic crisis, the central government provided a supplementary investment of $530 million in the fourth quarter of 2008, focusing on projects to

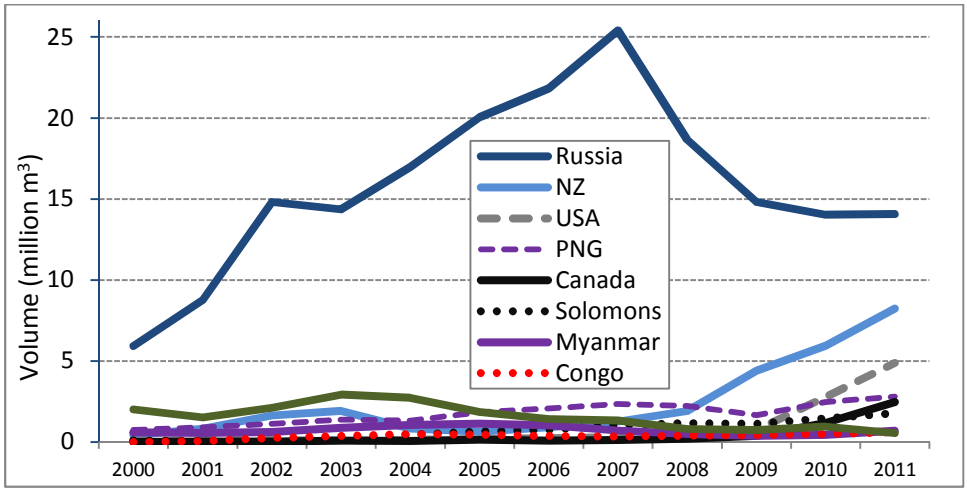
protect the natural forest and to establish plantations for environmental protection, including afforestation and reforestation of 2.6 million ha. This investment was expected to boost farmers' incomes and employment.

The State Forestry Administration has set ambitious goals to dramatically increase forest plantations to bolster domestic timber production and reduce reliance on imports of wood products. Afforestation and reforestation programmes have had importance over a number of years although quality and stand productivity levels have been a major problem (USDA 2010). Domestic roundwood production reached 81 million m^3 in 2008, an increase of 16 percent on 2007 figures, mainly due to salvage from the 2008 earthquake and severe winter weather conditions. In 2009 production declined, but this reflected a return to previous levels rather than an effect from fluctuating demand. China's plantation material is mainly poplar, eucalypts, Chinese fir and Masson pine, which is used in the plywood and pulp and paper industries. China's SPWP industries are mainly dependent on raw material imports.

Imports

China's log imports from all sources dropped in 2008 and 2009. Demand had been depressed by a downturn in the construction industry, reduced demand for China's exports of processed wood products (mainly wooden furniture and plywood), a reduction in tax rebates for some wood product export items (although these were partially reinstated in 2009), and a dramatic decline in imports from Russia – the major log supplier – following implementation in 2008 of the Russian log export tax on softwood species and large-diameter birch logs (which was increased from 20 percent to 25 percent of the customs declared log value). A further planned increase to 80 percent of the log value was postponed but not implemented because of the negative impact of the global economic slowdown on Russia's wood industry. However, the uncertainty provided urgency among Chinese importers to seek alternative log sources, in addition to increasing imports of sawnwood. Although most of the shortfall was provided by other softwood supplying countries – New Zealand, the US and Canada – some of the gap was supplied by tropical hardwood suppliers – notably Papua New Guinea and the Solomon Islands (Figure 4.1).

Figure 4.1. China imports of logs by major supplying country, 2000-2011, by volume (million m^3).



Source: World Trade Atlas

Log imports from all sources recovered in 2010 and 2011, surpassing pre-crisis levels, as domestic consumption responded to the economic stimulus measures and as export markets for China's finished wood products showed signs of recovery.

Imports of tropical logs dropped 26 percent between 2007 and 2009, but surged in 2010 to reach 8.1 million m^3, with all tropical supplying countries increasing their exports to China with the exception of Gabon, which had implemented log export restrictions in May 2010 (Table 4.3).

Table 4.3: China imports of logs by major tropical supplying country, 2004-2011, by volume (m^3).

	2004	2005	2006	2007	2008	2009	2010	2011
PNG	1,314,697	1,835,233	2,064,261	2,341,025	2,229,673	1,659,427	2,477,751	2,799,022
Solomon Islands	449,823	649,798	774,825	1,049,186	1,158,942	1,124,412	1,454,748	1,774,357
Myanmar	-	1,054,287	1,133,196	1,026,872	717,967	490,333	370,873	432,939	687,645
Congo	492,536	454,045	367,006	331,402	394,763	436,331	485,645	621,040
Malaysia	2,722,040	1,858,869	1,412,434	1,331,419	816,692	721,757	955,568	551,539
Cameroon	-	98,828	48,842	299,189	249,594	201,333	246,440	400,132	333,701
Equatorial Guinea	304,698	304,096	381,003	487,941	249,375	22,512	217,457	300,666
Mozambique	-	80,577	109,028	126,481	211,595	157,339	121,489	233,106	229,994
Vietnam	17,109	44,395	138,823	216,627	57,408	22,257	41,400	134,702
Laos	20,261	20,120	31,195	57,015	31,011	44,621	67,396	107,914
Gambia	201	331	597	13,698	0	123	19,173	84,805
Togo	76	53	660	17,543	53,251	58,776	93,653	74,651
Congo, Dem. Rep.	1,725	738	4,297	6,886	24,021	18,085	44,960	67,034
CAR	20,425	25,579	22,381	13,931	33,718	30,380	56,748	64,189
Guyana	3,431	27,207	64,132	61,833	50,393	19,302	50,639	49,635
Liberia	0	0	0	0	165	56	706	47,832
Ghana	0	36	16	615	1,400	2,470	18,126	39,747
Guinea	0	5,746	19,382	8,872	48,244	10,795	133,492	34,702
Gabon	632,531	801,748	958,028	1,149,934	1,076,787	1,103,041	738,571	22,687
Panama	147	338	802	1,515	4,083	2,246	5,882	20,096

Source: World Trade Atlas

Sawnwood imports have grown as a proportion of total wood raw material imported due to the increases in log export bans and restrictions in supplying countries and increases in Chinese labour costs, reducing competitive advantage in primary wood processing.

China's tropical sawnwood imports from ITTO producers declined marginally in 2008 but rose in 2009 and soared in 2010, increasing by nearly 50 percent to 3.3 million m^3. The growth in China's domestic demand had compensated for depressed demand in China's export-oriented wood processing industries during 2008-2009, and demand increased further in 2010 as the wood remanufacturing export industries recovered. Tropical sawnwood imports are mostly used in furniture, interior decoration and home improvement uses, and are more sensitive to China's export market situation than is the case for softwoods, which are used extensively in domestic construction. China's imports from Thailand (mainly of rubberwood) were not impacted by the crisis, and imports had more than doubled between 2007 and 2010, reflecting the surge in demand for lower cost furniture products, possibly as a result of the crisis (Table 4.4).

Table 4.4: China imports of sawnwood by major tropical supplier, 2004-2011, by volume (m^3).

	2004	2005	2006	2007	2008	2009	2010	2011
Thailand	834,688	762,239	706,547	694,390	790,711	1,024,357	1,409,822	1,594,122
Indonesia	961,387	720,045	450,082	258,036	226,109	212,385	407,416	805,810
Philippines	73,121	63,895	118,151	129,374	181,260	293,949	544,958	539,923
Malaysia	431,132	475,453	376,449	310,029	252,820	204,386	242,332	234,052
Gabon	24,226	21,266	21,144	15,478	28,402	22,581	36,202	131,427
Mozambique	412	1,589	3,581	6,755	39,776	33,816	77,575	121,011
Brazil	322,678	279,663	340,562	278,744	161,577	107,134	140,484	108,127
Myanmar	251,536	321,313	178,380	259,737	99,282	111,528	101,124	98,040
Cameroon	34,247	12,488	17,337	9,801	26,444	16,410	45,937	65,514
Peru	6,469	21,162	48,478	48,800	60,690	69,009	83,193	63,000
Laos	4,890	7,895	14,616	16,849	29,291	20,881	48,125	57,028
Vietnam	15,977	11,434	20,167	22,905	16,836	19,648	65,131	55,637
Ecuador	2,342	3,627	3,286	4,240	11,831	17,555	44,194	35,040
Cambodia	44,210	37,611	47,856	28,017	15,811	7,219	24,425	13,972
PNG	903	1,490	6,960	5,364	4,645	6,435	6,618	5,465
CAR	418	176	1,556	444	6,188	2,538	3,735	3,889

Source: World Trade Atlas.

While imports of tropical logs and sawnwood from within the Asian region have increased considerably in 2010 and 2011, imports from the African region had also increased, with the China market acting as a buffer to the downturn in tropical wood product markets in the EU, a major market for African logs and sawnwood.

Exports

China has become the world's largest wood processing "hub" in a period of just over a decade, with exports responding to growing demand in the developed economies for its cost-competitive, wood-based products, principally plywood, furniture, flooring, wooden mouldings and other finished wood products. Although China's tropical wooden furniture exports are not able to be fully differentiated in the trade statistics, it can be assumed that export trends for all species are applicable to tropical exports.

Table 4.5: China exports of SPWPs, plywood, 2000-2010, by value ($ million)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
SPWPs	4,460	4,678	6,016	7,478	9,503	11,421	14,123	16,149	16,421	17,152	22,096
Plywood	189	242	427	495	1,249	1,838	2,856	3,577	3,400	3,230	3,402

Sources: COMTRADE, ITTO Statistics Database. Note: SPWPs include wooden furniture and parts, builders' woodwork, 'Other SPWPs', mouldings, furniture and parts of bamboo and cane.

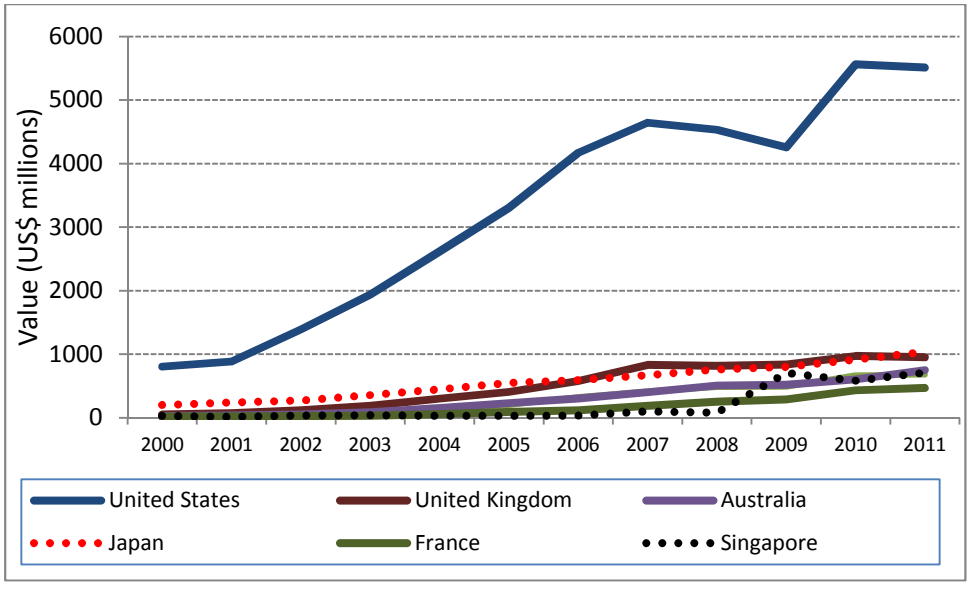
China dominates SPWP exports which were valued at $22.1 billion in 2010 and have been strongly competitive in price sensitive markets. Wooden furniture and parts, particularly wooden bedroom furniture and parts, is China's largest wood product export item, accounting for 30 percent of timber product exports and more than two-thirds of SPWP exports. Despite the weak demand conditions during the worst period of the global economic downturn, particularly in the major market for wooden furniture (the USA), exports (by value) continued to rise when the global financial and economic crisis reached its peak in 2009, while all other major exporters had experienced declining

values in exports during the period. China's furniture export growth by value in 2009 was more than double that of Italy, the world's second largest exporter. In 2010 and 2011, the competitiveness of exports to the US had also been negatively impacted by exchange rate fluctuations with the Chinese currency appreciating relative to the US dollar (see Figure 2.5).

However, exports had reportedly declined by volume in 2009, reflecting the shift in Chinese manufacturing towards higher value products (Forest Trends 2011). From June 2009, the industry benefited from value-added-tax (VAT) rebates for export items, with China reinstating export tax rebates for 117 wood product items. These items included bamboo products, wood-based panels and flooring products, with the export tax rebate increasing from 5 to 9 percent. The rebate for furniture products increased from 11 to 13 percent.

The USA, the EU and Japan have been the dominant markets for China's wooden furniture and parts. Exports to the US declined in 2008 and 2009, with exports falling by 19 percent in 2009 in response to reduced consumer spending and plummeting housing starts in that market. However, the USA still accounted for more than one-third of China's total furniture and parts exports, followed by the UK and Japan (Figure 4.2). Exports to the USA had also been affected by antidumping duties imposed on wooden bedroom furniture from China in 2004. These were extended in December 2010, with pressure from US manufacturers who had been affected by the constrained market. In response to this adverse duty, China's furniture industry diverted some of its production to items which are not subject to anti-dumping measures, such as seats with wooden frames, which now account for around 37 percent of wooden furniture exports. China's furniture industry was also challenged by environmental legislation in the USA and the EU which posed more severe restrictions on China's wooden furniture and parts.

Figure 4.2. China - exports of wooden furniture and parts, 2000-2011, by major importing country.



Source: COMTRADE

With this background, furniture exporting enterprises were being encouraged to explore emerging markets, especially in the Middle East. In 2009, although the USA remained the largest importer of China's wooden furniture and parts, its share decreased from 48 percent in 2008 to 35 percent in

2009, while exports to ASEAN countries and the Middle East (especially Saudi Arabia and United Arab Emirates) had risen considerably (Table 4.6). In 2010 and 2011, total exports surged, surpassing pre-crisis levels, as the US market recovered strongly and China's wooden furniture products became more competitive than domestically produced furniture products in export markets. Wooden furniture exports had risen 28 percent by value in 2010 to reach $16,159 million but growth slowed in 2011 with exports valued at $17,121 million as some of China's increasing production was diverted to the growing domestic market. China continued to expand its exports to a number of new emerging markets such as Russia, South Africa and Brazil.

The rise of emerging markets as a major source of external demand for China's exporters had begun in the mid-2000s with markets such as India and Brazil expected to be the dominant driving force behind China's overall export growth (EIU 2011). At the same time, the share of China's exports produced by foreign-invested manufacturers has fallen steadily since peaking at around 60 percent in 2005 although EIU (2011) notes that "the flip side of this is that foreign-invested firms in China are increasingly focusing on servicing the Chinese domestic market". These trends imply that in terms of trade, a higher proportion of trade in the future will be carried out by Chinese firms serving markets in other developing countries. This is in contrast with the last decade during which investment from multinationals was a key factor in China's economic development. With the growing Chinese market and the appreciation of the Reminbi, European and US furniture exporters are now eyeing up China's growing domestic furniture market, as their own furniture markets have slumped (Strugatch 2012; ITTO MIS 16-30 November 2011). German and Italian producers of high quality brand-name furniture, for example, are now becoming more engaged in selling to China.

Table 4.6: China - exports of wooden furniture and parts, 2004-2011, by major importing country, by value (US$ millions)

	2004	2005	2006	2007	2008	2009	2010	2011
USA	2619	3304	4172	4642	4536	4258	5561	5509
Japan	450	547	595	668	759	802	916	1036
UK	302	407	578	832	814	835	972	951
Australia	149	230	300	401	507	518	603	752
Singapore	28	32	36	101	78	707	582	710
Canada	124	203	328	420	482	488	670	681
Germany	66	85	120	200	241	315	425	474
France	56	92	115	184	253	287	432	467
Saudi Arabia	67	102	151	182	253	328	335	442
Korea, South	74	129	232	311	297	222	341	391
Malaysia	15	25	48	91	118	495	374	373
UAE	50	65	93	159	225	305	258	371
Brunei	0	0	1	1	2	19	176	345
Hong Kong	746	834	841	734	265	256	278	292
Netherlands	46	66	82	134	184	199	247	229

Source: World Trade Atlas. Note: Wooden furniture and parts includes the following HS codes: 9401.61; 9401.69; 9403.30; 9403.40; 9403.50; 9403.60.

Although exports of flooring products to the US declined in 2009 in response to declining housing starts, the US government imposed countervailing duties on imports of multi-layered flooring from China citing that producers had received unfair subsidies from the Chinese government.

Table 4.7: China – tropical plywood exports, 2007-2010, by volume and value.

	2006	2007	2008	2009	2010
Volume (1000 m^3)	993	414	210	211	224
Value ($ million)	298.3	168.2	125.8	131.2	149.5

Source: ITTO 2012, ITTO 2010c

Although China is the world's largest producer and exporter of plywood, the proportion of tropical plywood in total exports is relatively small (about 4 percent), although a significant proportion of production is exported via furniture and flooring products. Chinese tropical plywood exports initially comprised mainly okoumé plywood (produced from African sourced log imports) and later included other "combi" plywood products with a domestic poplar core and tropical bintangor or meranti face (from Asian sourced logs).

Tropical plywood exports from China plunged in 2007 and 2008, having grown rapidly over the previous decade to reach a high of 992 000 m^3 in 2006 (Table 4.7). Exports have remained at about this level between 2008 and 2011. In contrast to Malaysia and Indonesia, which are heavily reliant on Japan for the bulk of their trade, China's main export markets are the United Kingdom, the USA and the Republic of Korea. China's tropical plywood exports have been subject to trade measures in its major markets and the EU has imposed anti-dumping duties on Chinese okoumé-faced plywood since 2004. The export competitiveness of Chinese tropical plywood has been affected by difficulties in supplying environmentally certified products due to the complexity of the supply chain, quality concerns and rising production costs. Chinese producers have been responding to quality concerns (particularly in EU markets) by introducing higher quality core materials as an alternative to domestically produced poplar. In 2011, the US introduced stringent formaldehyde emission standards in the US which required manufacturers to invest in training, equipment and technological improvements. The resulting improvements required for China's SMEs is increasing production costs.

Although China removed export tax rebates in July 2010 on a number of products, China's wood product exports, including tropical plywood, continued to receive export tax rebates in order to achieve energy emission and reduction targets. Although reliable production data on tropical plywood was unavailable, given the scale of tropical log imports and overall tropical production levels, it can be assumed that tropical plywood has been used increasingly for domestic purposes, following incentives to increase domestic consumption.

Future challenges

The global economic crisis produced both challenges and opportunities for China's wood products industries. Restructuring and upgrading of China's wood products manufacturing industry in response to the crisis had improved the sector's competitiveness, giving Chinese manufacturers a comparative advantage compared with many other producing countries that were not able to provide significant, targeted manufacturing and export assistance measures. This provided a significant opportunity for Chinese exporters when export markets began to recover in 2010. However, a number of factors are threatening Chinese competitiveness in wood products

manufacturing and the sustainability of the industry, including increasing demand for certified sustainable and legally verified wood products in export markets, rising costs of labour, raw materials and energy, and increasing environmental product requirements.

Over the last decade there has been a rapid increase in demand for products which meet environmental and social responsibility requirements. These demands are becoming more intense following the introduction of the EU FLEGT programme, government procurement programmes, and CSR (corporate social responsibility) programmes in major export markets. Stringent environmental legislation has been introduced in the USA (amendments to the Lacey Act in 2008) and the EU (EU Timber Regulation 2010, which will come into force in March 2013), the two most important markets for China's wood products exports. Trade-based environmental measures appear to have intensified during and after the global economic downturn, with support mounting from domestic industries in the US and EU who have been competing in declining markets with material suspected to be from illegal and/or unsustainable sources. While China places importance on ecological improvement and environmental protection, and energy and water efficiencies in building, NGOs have pointed out the lack of focus on sustainable sourcing of materials, with China often regarded as "high risk" in terms of the legality of many of its wood product supply chains, particularly for products of tropical origin (Forest Trends 2011). While China now has a national forest certification programme[4] for its domestic forest resources, chain of custody certification will be an issue for tropical wood products given the complexity of the supply chain and that much of the tropical wood supply is deemed to be from high risk regions with limited legality documentation, including Laos, PNG, the Solomon Islands, and Myanmar. Documentation of source of origin will pose difficulties for some manufacturers, especially SMEs, with the additional costs of implementing due diligence requirements shrinking profit margins. Industry associations consider that SMEs have a low level of awareness of the new legislative requirements, suggesting that educational and technical assistance programmes will need to be intensified so that SMEs will understand the implications of the regulations and the technologies that can be applied to them.

While China has been consuming more wood products domestically, and increasing exports to less demanding markets in terms of environmental legislative measures, the USA, EU and Japan continue to be significant end-use destinations for Chinese value-added products with tropical raw material inputs. This implies that the competitiveness of China's tropical wood products exports will be under threat from demands for legality in these markets.

China's competiveness in manufacturing is also being threatened by rising costs of labour and to a lesser extent, raw materials. Prior to the economic crisis, input costs had escalated resulting in relocation of some manufacturing capacity to lower cost producing countries such as Vietnam, Indonesia and Malaysia. With China's increasing levels of GDP/capita, labour costs are continuing to rise and production costs are also being pushed upwards. Fuel costs are soaring again and pushing up freight costs, and China continues to depend on imports to fill the gap in supply. However, the Economist (2012) notes that China's manufacturing competitiveness should not be determined by

[4] China's Timber Legality Identification System has been established and will be operated in pilot in November 2012, in response to international requirements. In the meantime, the mutual recognition between PEFC and China Forest Certification Programme has entered into final phase and could possibly reach agreement in 2013.

comparative labour costs alone. Although China's labour costs are increasing rapidly, so is Chinese productivity. The supply chain is "sophisticated and supple" which improves country competitiveness. China's export competitiveness is also likely to be based on a different focus in the future as Chinese companies take over export development from foreign companies, and with Chinese companies moving further up the technology ladder.

4.2 Consumer case study – EUROPEAN UNION (EU)

Introduction

EU countries have traditionally been major destinations for tropical wood products, with the UK, France, the Netherlands, Italy, Germany, Portugal, Spain and Belgium importing substantial volumes of tropical sawnwood, veneers and plywood which are mostly remanufactured into high-value furniture, joinery and flooring products which are consumed in EU markets. A growing trend which had been evident before the crisis has been the decline in imports of tropical primary products and a rise in imports of finished products, primarily from Asian suppliers. In contrast to China's domestic market, EU wood products markets are generally regarded as "mature" – lacking in significant growth - and have been described as requiring "market push" rather than having "market pull" (de Boer 2011). Tropical end use products are regarded as high-value "luxury" products, but also perceived to be associated with illegal logging and tropical deforestation. The global economic crisis, and continuing euro crisis, is reinforcing existing market trends.

Domestic consumption drivers

European demographic trends are characterised by declining population growth, with declining birth rates (particularly in Germany) and high life expectancies resulting in significant ageing of the population. Although the EU-27 population has been growing, since 2003 (when the population had reached an historic low) most of the change has been from net migration, with low contribution from natural change (Marcu 2011). Population growth has been unevenly distributed and total population declined in seven Member States in 2011, including in Germany and Portugal, two important tropical timber importing countries. The United Kingdom, Belgium and Sweden had the highest population growth rates of the ITTO EU consumer countries, and Italy's growth has been wholly dependent on net migration. The extent of EU population decline or growth in the future is likely to be dependent on the contribution made by migration. Growth in net migration had declined in 2009 and 2010 so that population growth rates had dropped over that period, suggesting that future population growth will be very dependent on the region's economic outlook and potential for recovery from the euro crisis. Although China also has an ageing population, its consumption growth has been fuelled by rising household incomes and urbanisation, with considerable scope for further growth in those variables. By contrast, European incomes are high and EU countries are highly urbanised, suggesting that overall consumption is not likely to grow significantly in the future.

Chapter 2 describes macroeconomic trends and construction trends in the EU in detail. Construction activity in all sectors declined after the recession in 2008, although non-residential construction and civil engineering were less affected. The collapse in Spain's housing market – which accounted for 20 percent of EU construction activity in the boom period – was the largest contributor to the decline in construction activity. Nearly 75 percent of all housing construction in the EU is in five countries – France, Germany, Italy, Spain and the UK – which are the major markets for tropical wood products. Construction output in the United Kingdom – an important tropical timber consumer market – also declined very strongly in 2009.

Although several European countries launched fiscal stimulus packages with measures to specifically assist the construction sector, these were not on the scale provided by China and the USA, for example, and the phasing out of stimulus packages, along with the required consolidation of public finances, negatively impacted public construction activity in some European countries in 2011,

particularly in Greece, Ireland, Portugal and Spain. Many of the stimulus packages have been linked to concerns about climate change. Green building is regarded as a major driver for building with wood and was the only construction sector in the EU that has shown resilience during the economic crisis. The “energy-efficient buildings PPP” plan, developed as part of the European Economic Recovery Plan, was allocated approximately €1 billion over the period 2010-2013 by the private sector and the Seventh Framework Programme for Research to reduce the energy footprint and CO_2 emissions related to new and renovated buildings. Green building rating systems such as BREEAM in the UK, HQE in France and DGNB in Germany are based on a comprehensive LCA approach to material specification. Although these developments are expected to positively benefit wood, particularly in the door and window sectors where energy efficiency is paramount, it is unclear how this will affect the use of tropical wood products, with tropical products already having a relatively poor image in EU countries in terms of aspects of their environmental credentials.

Sustainable consumption and green consumerism have been dominant market drivers in EU markets since well before the crisis, with emphasis on ensuring supplies of legal and/or sustainable wood products. The EU FLEGT Action Plan was adopted by the EU in 2003 and seeks to increase the capacity of producer countries to control illegal logging, while reducing the trade in illegal timber products between these countries and the EU. Several Voluntary Partnership Agreements (VPAs) between ITTO producers (including Ghana, the Republic of Congo, Cameroon, Central African Republic, Indonesia and Liberia) have already been established while negotiations are on-going with a number of other ITTO producer countries. Public procurement policies, which account for a significant volume of the national consumption of wood products in some Member States, have been introduced in several EU Member States, although there are significant differences in the detailed legality and sustainability requirements of different policies. Timber trade associations have also been influential in encouraging private sector procurement policies for legal and/or sustainable wood.

The EU Timber Regulation, which will come into force in March 2013, puts a traceability obligation on traders throughout the supply chain to identify the operators or the traders who have supplied the timber and timber products; and, where applicable, the traders to whom they have supplied timber and timber products; and requires companies to implement a “due diligence” system to minimise the risk that timber they sell was harvested illegally. The Regulation covers a broad range of timber products, including solid wood products, flooring, plywood, and pulp and paper. The Regulation applies to both imported and domestically produced timber and timber products. It is legally binding on all 27 EU Member States, which are responsible for laying down effective, proportionate and dissuasive penalties and for enforcing the Regulation (EC 2012). The Regulation is causing anxiety among EU stakeholders about how the law will be applied and about the associated administrative and bureaucratic burdens and among tropical exporters who perceive an additional cost burden which will reduce their competitiveness. Proponents suggest that the new legislation will increase demand for wood products and set a level playing field, increasing awareness of legal and sustainable timber and leading to responsible purchasing by all activities by stakeholders. The EU Timber Regulation is escalating the requirement for certified legal and sustainable wood products, and VPA-licensed wood products, with certification becoming a central issue to marketing of tropical wood products in EU markets.

Production and trade

The EU has significant, sustainable forest resources and wood products processing capacity, with less than 10 percent of EU timber consumption being imported (de Boer 2011). The United Kingdom is the largest overall importer of wood products - primary and secondary - from developing countries, followed by Germany, France and the Netherlands. Tropical wood species are generally used in higher-value end uses with specific technical and aesthetic performance requirements. Apart from a surge in imports in 2007, imports of tropical primary wood products have generally been static (sawnwood) or declining (logs and plywood) over the last decade (Table 4.8). The exception has been imports of veneer which grew strongly to 2007.

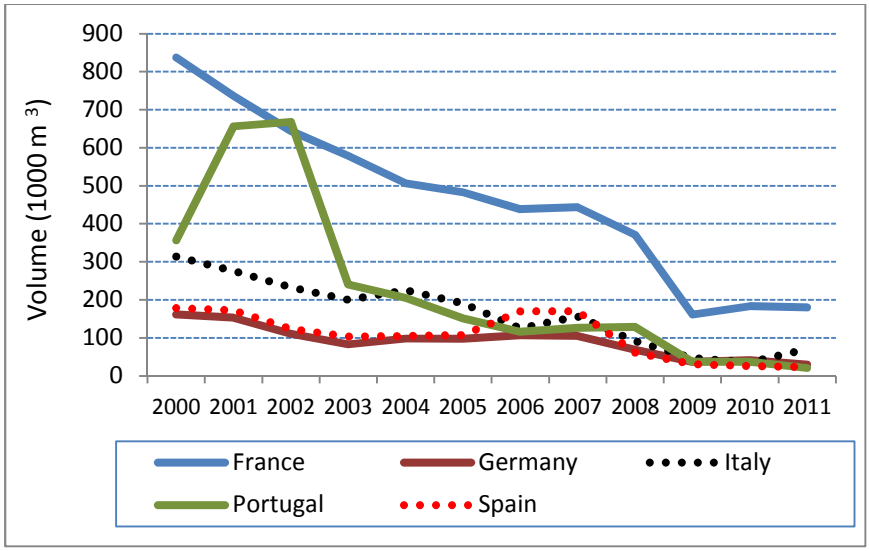
Table 4.8: EU-15 imports of tropical logs, sawnwood, veneer and plywood, 2000-2011, by volume (1000 m^3)

	Logs	Sawnwood	Veneer	Plywood
2000	2170.3	2620.6	233.7	1313.9
2001	2272.9	2624.9	258.7	1425.0
2002	1991.1	2470.9	256.8	1308.2
2003	1356.6	2414.3	279.0	1399.9
2004	1274.7	2593.5	311.2	1418.7
2005	1192.5	2755.1	332.9	1247.2
2006	1060.1	2428.6	357.9	1190.4
2007	1129.0	2738.6	379.4	1190.9
2008	829.6	2121.8	314.3	1244.6
2009	400.3	1338.0	222.1	1016.3
2010	431.5	1421.0	281.6	1117.3
2011	408.4	1291.5	287.1	1000.6

Source: ITTO Statistics Database

The decline in tropical log imports over the last decade (Table 4.8) reflects the trends (discussed previously) in log export restrictions in supplying countries, European investments in wood processing capacity (particularly veneer manufacturing) in African supplying countries, and severely reduced demand from 2009. The growing share of finished and semi-finished wood products from Asian suppliers, particularly China and Vietnam, has also been impacting on consumption of primary tropical wood products in the EU.

Figure 4.3. EU-15 imports of tropical saw and veneer logs, 2000-2011, by major importer, by volume



Source: ITTO Statistics Database.

Sawnwood

The EU has a significant domestic sawn hardwood production capacity which uses domestically produced hardwoods, particularly oak and beech. Following an 18 percent decline in hardwood saw and veneer log production between 2007 and 2009, EU production rebounded by 12 percent to over 33 million m^3 in 2010. Overall, European sawn hardwood production had dropped in 2009, to around 12 million m^3, with reports of significant reductions in numbers of shifts and company closures occurring. Lack of credit had constrained many mills from buying logs at that time. Production was also constrained in 2009/2010 by harsh weather conditions which hampered log harvesting, and forest owners delaying timber sales awaiting better prices (UNECE 2011). Although sawn hardwood consumption rose in 2010, consumption remained at historically low levels in many European countries, notably Italy, Spain and Portugal, due to continuing low demand in the cabinet, furniture and parquet flooring industries. Germany, France and Romania are the dominant producers of higher grade European sawn hardwoods.

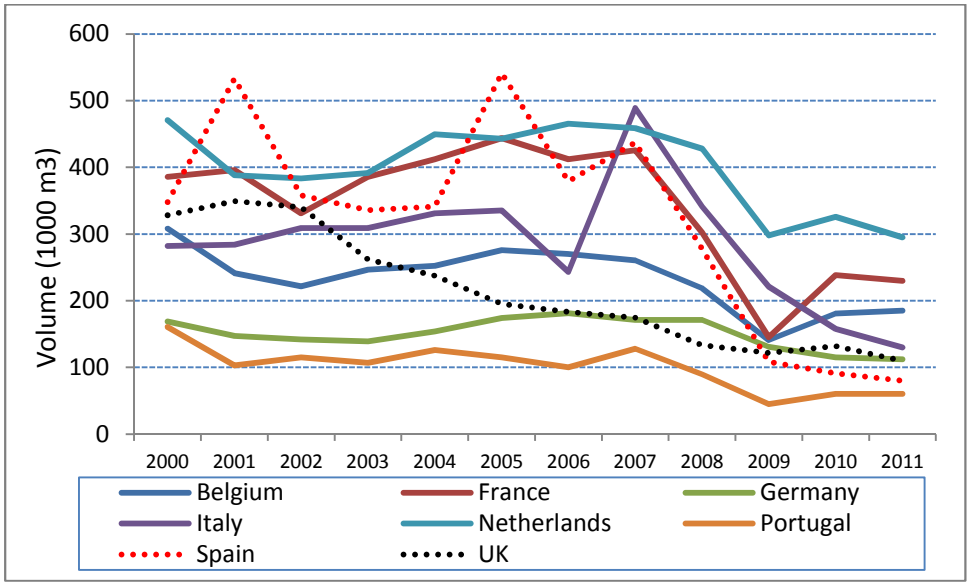
Despite problems arising from the economic recession, ITTO MIS (16-31 July 2011) reported that the EU hardwood sawnwood industry had weathered the crisis better than most external suppliers with its share of the EU hardwood sawntimber market increasing from 66 percent to 74 percent during the period 2006 to 2010 while the tropical hardwood market share declined from 18 percent to 12 percent. Some of the reasons for this trend included:

- diversion of global hardwood supply from Europe to China and emerging markets;
- a move to smaller stockholdings and just-in-time delivery during the credit crunch which has favoured more readily available products with shorter lead times;
- the willingness of European domestic suppliers to deliver to the precise specifications of European manufacturers;
- the willingness of the European state forest sector to continue to harvest hardwood logs during the recession despite relatively low log prices;
- a continuing strong fashion trend for European oak;

- the development of competitive European hardwood products with targeted performance attributes which are being marketed as alternatives to tropical hardwoods in the external joinery and furniture sectors; and
- environmental concerns which have benefited FSC and PEFC certified hardwoods, the majority of which are sourced from Europe. The lack of availability of certified tropical sawnwood remains a concern given the widespread expectation in the EU that demand for certified tropical wood products will pick up strongly as the EU moves towards full implementation of the EU Timber Regulation in 2013.

EU imports of tropical sawnwood plummeted in 2008, dropping to 2.1 million m^3 in 2008 with the decline escalating in late 2008 (ITTO 2012). In 2009, as economic conditions in most EU countries continued to deteriorate and consumption declined further, tropical sawnwood imports plunged to a record low of 1.4 million m^3. All the major EU importing countries reported significant reductions in imports in 2008 and 2009 (Figure 4.4). Although imports rebounded slightly in 2010 they had not recovered to pre-crisis levels and dropped further in 2011 as the economic outlook deteriorated. Despite relatively low inventories, buyers were reportedly cautious at the end of 2011 due to economic uncertainty, continuing tight credit conditions and "nervousness about long lead times when buyers are increasingly demanding quick deliveries" (ITTO MIS 1-15 October 2011). Tropical sawnwood importing companies reported company losses and staff retrenchments, with their customers seeking lower cost alternative products such as domestically produced sawnwood and sawnwood products, or lower cost substitute end products such as laminated flooring and PVC window frames.

Figure 4.4. EU-15 imports of tropical sawnwood, 2000-2011, by major importer, by volume.



Source: ITTO Statistics Database.

Since 2008, the Netherlands has been the largest EU tropical sawnwood importer, supplied mainly by Cameroon, Brazil and Malaysia. Italy's imports have been declining since 2007 and are mainly from countries within Africa – Cameroon, Côte d'Ivoire and Ghana. The Italian hardwood sector has undergone significant structural change since before the crisis, with a shift by larger manufacturers

to lower cost locations resulting in lower demand for tropical sawnwood in Italy's furniture sector. Significant setbacks in the construction sectors in Spain and Portugal resulted in plunging tropical sawnwood imports in both countries in 2008 and 2009. Spain's imports remained depressed in 2010 and 2011 as the construction sector had not recovered, and the important door manufacturing sector remained depressed.

Oliver and Donkor (2011) noted that sapele and meranti sawnwood, which constitutes a significant proportion of sawnwood imports from the northern Congo region, is used widely in the European joinery sector, with meranti mainly used in window frames in northwestern Europe and sapele used widely in window frames, door frames and staircases in the UK, the Netherlands, Belgium and Spain. The use of these species in the western European window market had been increasing between 2003 and 2008, in line with construction activity, but had lost market share to plastic and metal window products.

Improvements in quality of products and services provided by the wood framed window sector had improved competitiveness and boosted market share although the dominant market position, held by the plastics sector, was expected to be consolidated "through the combination of low-priced product, strong marketing and distribution networks, and constant innovation to improve thermal insulation, aesthetics and recycling". Tropical wood was being increasingly restricted to "a small-volume, high-value niche, accounting for only a few percent of total wood-framed window production". Tropical wood's position in this niche was coming under considerable pressure from alternative products. The highly competitive environment created by recessionary conditions was expected to inevitably lead to a further loss of market share, given the price differential between tropical hardwoods and softwoods used in the window sector.

In 2010 European window markets were reported to have stabilized with wood's share of the overall market increasing, although there has been significant variation between countries. These trends were expected to continue in 2011 due to continuing refurbishment of windows to improve energy efficiency across the EU, with demand in Germany and France expected to remain steady although a slow return to growth in Italy and the UK. Although meranti and sapele continued to be favoured by European joinery companies for their aesthetic and technical attributes at the high end of the window market, there were obstacles to tropical wood benefiting from an increase in market share for wood in EU window markets. These included a shift to quality-controlled factory finished window units which favoured the use of engineered wood products (EWPs) rather than solidwood. The general lack of EWP production capability in the African region was a competitive disadvantage for African suppliers to the European window market, with an expansion in market share requiring greater availability of semi-finished products in standard dimensions.

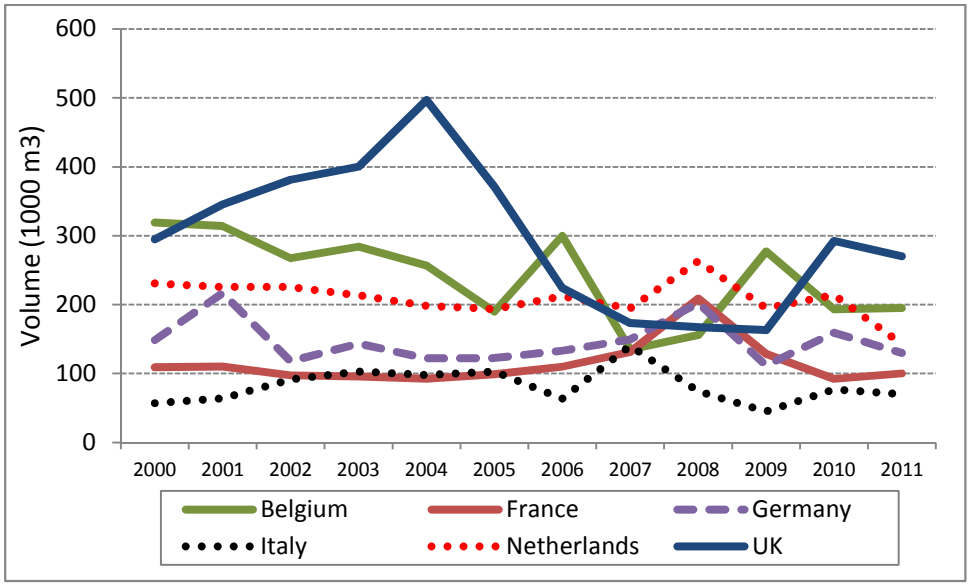
A growing requirement for FSC-certified wood is of increasing importance in the window sector and other market sectors and this has led to the substitution of tropical hardwoods, with only limited volumes being available at significant price premiums. Oliver and Donkor (2010) noted that the requirement for certification that specifically meets the UK government's criteria for legal and sustainable wood had contributed to many UK window manufacturers shifting away from tropical wood in favour of substitutes that are more readily available as FSC-certified or PEFC-certified. The UK, and to a lesser extent the Netherlands, have been progressing further than other EU markets in establishing markets for certified products and it had been observed that the economic downturn

had widened the distinction between the small number of environmentally proactive timber traders supplying the sustainable construction market, and the larger group of companies that are primarily focused on price (ITTO MIS).

Plywood

About 50 percent of plywood production in the EU comprises hardwood plywood, which is dominated by birch plywood with Finland the main supplier, and beech and poplar plywood from central and southern Europe. A small volume of okoumé plywood is manufactured in France (although production has dropped following Gabon's restrictions on log exports in 2010). Within the EU-27, plywood production (hardwood and softwood) declined by 7.2 percent and demand by 10 percent in 2008 (UNECE 2009) although a pre-crisis jump in production costs (particularly resin and energy) had stabilised somewhat. Although consumption levels had declined in 2008, wood raw material costs remained relatively high in the EU. Lower production activity in 2008 generally caused forest owners in the EU to defer harvesting. With high production costs and shrinking demand producers were reportedly "trying to turn the crisis into an opportunity for reorganization to increase their competitiveness" (UNECE 2009). However, production contracted sharply - by 18 percent - in 2009 and only partly recovered in 2010 to 3.5 million m^3.

Figure 4.5. EU-15 imports of tropical plywood, 2000-2011, by major importer, by volume



Source: ITTO Statistics Database

EU imports of tropical plywood dropped in 2009 to 1.0 million m^3 (Table 4.8). EU imports are mostly accounted for by the UK, Belgium, Germany, and France (Figure 4.5) with most imports originating from Malaysia, China, Indonesia and Brazil. As demand plunged at the height of the economic crisis, price considerations came to the fore, resulting in EU tropical plywood imports, particularly from Asian sources, losing market share to plywood grades of Russian origin, particularly birch plywood, due to significant price reductions for this material during 2008 and 2009. In 2009, the more competitively priced Malaysian tropical plywood had gained ground in EU markets at the expense of supplies from Brazilian and Indonesian sources, with production capacity falling significantly in both countries, mounting environmental concerns about Indonesian plywood, and a larger proportion of Brazilian plywood being diverted to the growing domestic market. With the lowering of price

expectations in EU markets, some plywood manufacturers were reportedly cutting costs with regard to log quality glues and other raw materials, with quality issues becoming more prevalent (ITTO 2010).

Until 2008/2009, Chinese plywood products had a significant competitive advantage in Europe and other major markets due to highly competitive pricing and a dwindling availability of Southeast Asian plywood. However, as demand for all grades of plywood began to plummet in late 2008, the price advantage of China's plywood exports was eroded somewhat as a number of EU importers shifted their purchasing activity to Russian birch plywood. In EU markets, the economic downturn also narrowed the price differential between certified and uncertified plywood products as the relative availability of certified material increased and exporters reduced their prices of certified product in an effort to maintain market share. Those exporters with access to certified material were aggressively marketing their products, emphasizing that they could provide environmentally certified product at little or no price premium.

The economic downturn also resulted in a higher proportion of new building work in the UK being dependent on public sector finance. This, combined with the trend towards the trade being increasingly concentrated on a limited number of larger importers and merchants, added to the pressure on suppliers to demonstrate that products are FSC- or PEFC-certified. Demand for certified plywood products has tended to favor birch and softwood plywood alternatives. EU importers also report waning demand for Chinese sourced tropical plywood because of the absence of certification. A significant rise in imports of tropical plywood from Malaysia in 2010 can be attributed to the ability of Malaysian suppliers to provide certified plywood (which has mutual recognition under the PEFC scheme) compared with the limited availability of certified products from other tropical plywood suppliers. This will also be an important advantage when the EU Timber Regulation is fully implemented from March 2013. EU imports of Chinese tropical plywood are expected to be affected by the regulation, with the only FSC-certified plywood from China currently reported to be from non-tropical sources - poplar, pine and eucalypt.

EU imports of tropical plywood increased 10 percent in 2010 to 1.1 million m^3 but this recovery was short-lived, with imports expected to return to relatively low levels in 2011 as the economic outlook for the euro zone became more uncertain. In early 2011, the Japanese earthquake and tsunami had affected the supply of Southeast Asian plywood to Europe resulting in a rapid increase in Southeast Asian plywood prices and increased demand for cheaper Chinese plywood. By late 2011, this situation had stabilised and the supply situation had improved, although the demand outlook remained pessimistic.

In 2011, Chinese plywood was reported as dominating the lower value end of the UK market but extending to the higher end and putting pressure on Malaysian exporters to compromise quality in order to meet the low price expectations of the market. Lower price expectations and tighter margins, a trend which has continued since the initial crisis to 2011, has increased the overall hardwood plywood market focus on price at the expense of quality.

In France, production of okoumé plywood declined in 2010 and 2011 following a reduction in availability of okoumé logs from Gabon but this has not been offset by rising tropical plywood imports from other countries in the Congo basin, or from other countries (although increasing imports of plywood from Gabon are indicative of a continuing shift in manufacturing location to

Gabon). This has been due to a number of reasons, including: the EU's imposition of anti-dumping duties on okoumé plywood from China, effective November 2004 and extended in an EU decision on 31 January 2011, which may have created uncertainty for EU importers; increasing price competition in the construction sector and; as pre-fabrication has increased, a reduction in demand for okoumé plywood as a utility joinery product. It has been replaced in less demanding applications by cheaper softwood and combi-plywood, veneered MDF and various composites.

Veneer

The European door, flooring and furniture sectors utilise reasonable quantities of sliced veneer from tropical supplying countries, particularly in Africa (mainly Côte d'Ivoire, Ghana, Gabon, Cameroon and the Republic of Congo). The major market sectors utilising tropical wood veneer have been: Germany, which has significant manufacturing capacity; the Italian furniture industry, which uses about two-thirds of veneer consumption in Europe; the EU wood flooring sector; and the southern European door industry. Although EU imports of tropical veneers had increased in the period to 2007, this was mainly due to policy measures restricting log exports from supplying countries rather than an increase in the relative competitiveness of tropical veneers (Oliver and Donkor 2010). Rapid expansion in non-wood substitute veneers has been evident in lower–end markets, although technological improvements and developments are beginning to push these products into the upper end of the market, intensifying competition with tropical veneers.

EU imports of tropical veneer increased to 282 000 m^3 in 2010, but this was a relatively low level of imports compared with 2007, when imports totalled 379 000 m^3 (Table 4.9). Italian imports of (sliced, decorative) veneer have declined since 2007, as domestic furniture demand has been impacted by low levels of investment in domestic construction, lack of credit and other constraints on household disposable income, as the market share of other materials such as glass and plastics has increased and as global furniture demand has weakened.

Table 4.9: EU-15 imports of tropical veneer by major EU importing country, 2007-2011, by volume (1000 m^3)

	2007	**2008**	**2009**	**2010**	**2011**
France	426	302	145	238	230
Italy	132	83	62	82	90
Spain	35	40	21	33	31
Germany	34	36	25	31	23
Belgium	12	11	10	13	10
Total EU	379	314	222	282	287

Source: ITTO Statistics Database

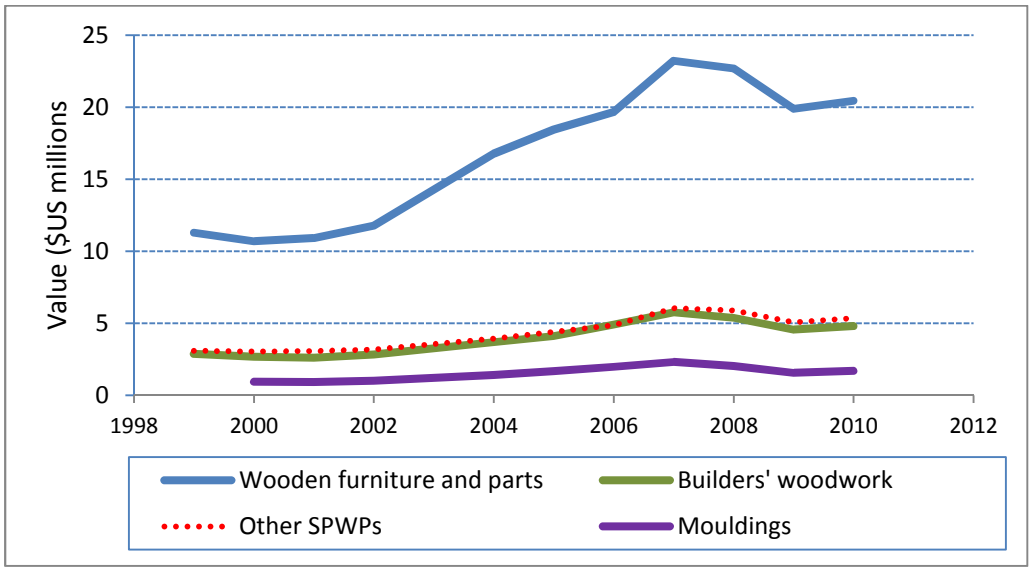
Gabon's log export ban, imposed in May 2010, was expected to have a dramatic long term impact on the supply of tropical veneer logs to the European veneer industry, with imports of tropical hardwood rotary veneer for the European plywood industry expected to rise. However, European veneer manufacturers have been facing tight margins as the construction industry has weakened, and the availability of lower priced panels has increased. In 2011, demand for sliced veneers in higher value end uses such as high end construction, furniture, car, boat and airplane construction was reportedly weakened by strong competition from finished Chinese products and substitution by non-wood products in furniture and door manufacture. European manufacturers were increasingly

switching to domestic hardwoods to reduce costs and supply chain risks, with technological advances allowing temperate hardwoods to simulate a variety of appearances and finishes.

Secondary processed wood products

Trends in EU imports of secondary processed wood products are shown in Figure 4.6 and indicate the rapid growth to 2007 and slowing of imports in 2008 and 2009.

Figure 4.6. EU imports of secondary processed wood products, by value, 2000-2010.



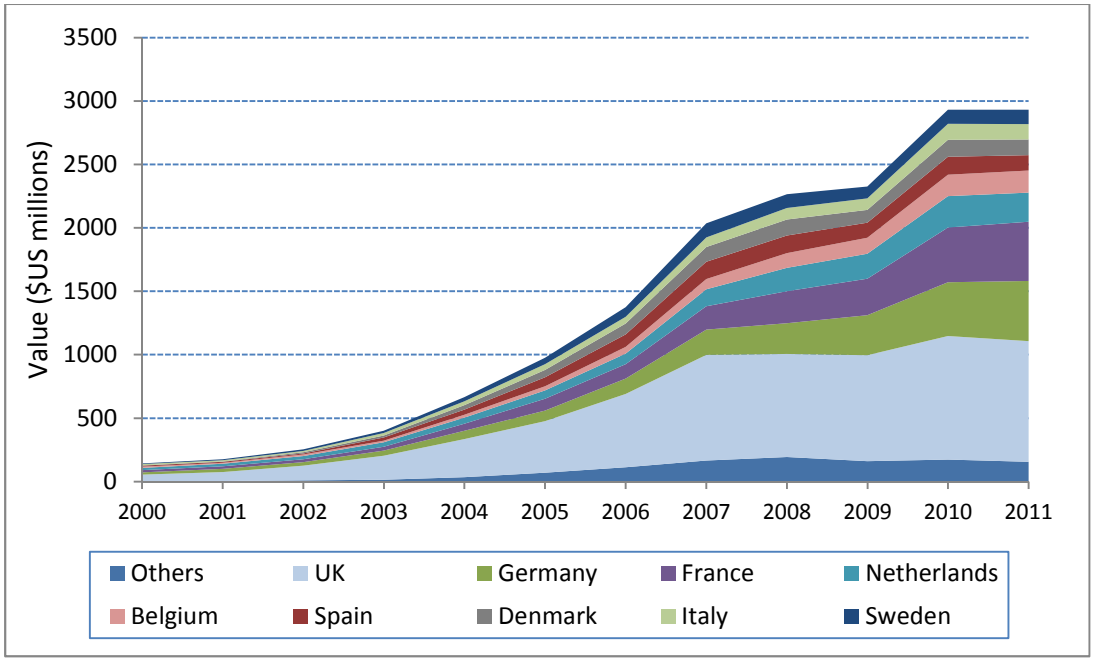
Source: COMTRADE

Furniture

Pre-crisis, furniture consumption and production in the EU had grown consistently to 2007 but slowed in 2008, with the value of consumption and production peaking in 2008 at €89.94 billion and €81.51 billion respectively. Consumption and production plummeted in 2009 by 12 percent and 13 percent respectively. Consumption recovered marginally in 2010, increasing 4 percent to €76.2 billion, although imports of furniture had increased at the expense of domestic production, growing 21 percent by value compared with only 2 percent growth in production (ITTO MIS 16-30 November 2011, cites Eurostat). As economic uncertainty mounted, furniture consumption began to slow again in 2011. China's exports to EU destinations have grown considerably and were almost negligible in 2000 (Figure 4.7). Although exports to the EU slowed marginally in 2009, they picked up in 2010 as the market showed some signs of recovery, remaining at a relatively high level in 2011 despite mounting economic uncertainty.

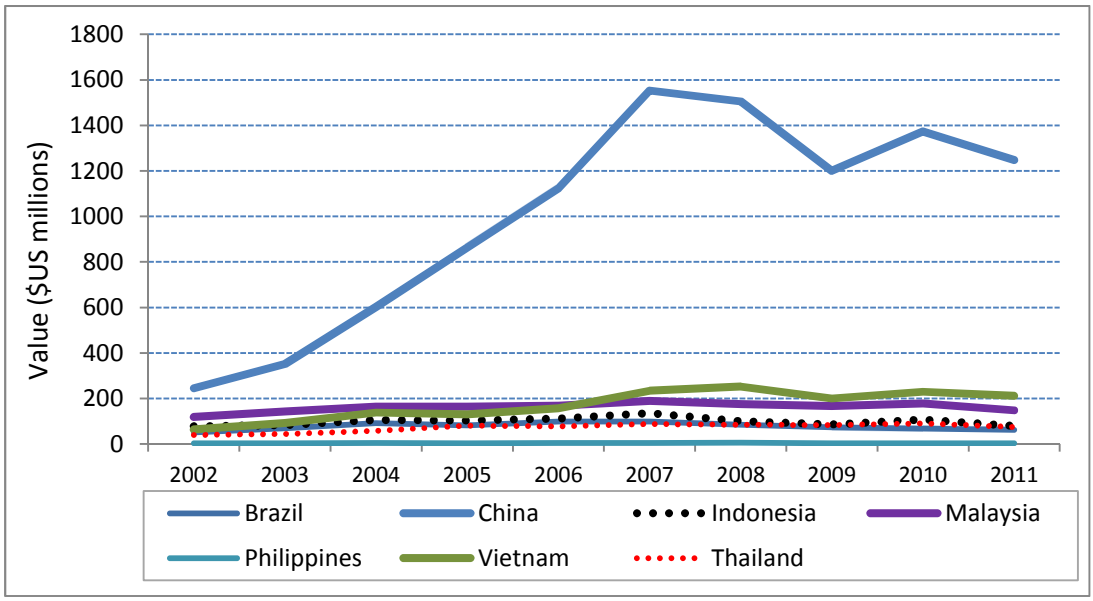
The EU furniture market is dominated by European manufacturers and brands, which account for over 80 percent of the value of furniture supplied to the EU. This reflects strong loyalty to European furniture brands in some EU countries, combined with strong technical, design and marketing skills, particularly in the Italian and German furniture sectors. These two countries account for over half of furniture produced in the EU. The dominance of European brands has been challenging for tropical wooden furniture exporters, along with the closer proximity of European producers to the end consumers.

Figure 4.7. China exports of wooden furniture and parts to EU-15 destinations, by value, 2000-2011



Source: World Trade Atlas. Note: Wooden furniture and parts includes the following HS codes: 9401.61; 9401.69; 9403.30; 9403.40; 9403.50; 9403.60.

Figure 4.8. UK imports of wooden furniture and parts from tropical supplying countries and China, 2002-2011, by value.



Source: COMTRADE. Note: Wooden furniture and parts includes the following HS codes: 9401.61; 9401.69; 9403.30; 9403.40; 9403.50; 9403.60.

The UK, which is now the largest importer of furniture from outside the EU, has undergone significant structural change in its furniture industry and retailing in response to the recession. Smaller, independent retailers had suffered most while larger retailers had increased their dominance. These included department stores led by the Home Retail Group, Marks&Spencer and

the John Lewis Partnership, furniture retailer chains such as IKEA and Furniture Village, together with kitchen specialists such as Magnet, Harvey Jones and Moben. Buying groups were also becoming more important in the market (ITTO MIS 16-30 November 2011). Large DIY retailers such as B&Q and Wickes also began to play a more prominent role, particularly at the lower end of the garden furniture market. As fragmentation of retailing activities complicates the process of identifying buyers and marketing the products, these changes have contributed to a rise in imports of furniture from outside the EU, particularly China and Southeast Asia (Figure 4.8).

Future Challenges

ITTO MIS (16-30 September 2009) noted that while imports of tropical hardwood had declined dramatically in 2009, sales and production of some important competing materials were rising. This is attributed to the perception that they are lower risk, both in terms of environmental and technical performance and their ready availability at reasonably stable (although not necessarily particularly low) prices.

An increasing requirement for large volume, consistent supplies has resulted in shifts in demand for a limited range of temperate species, particularly oak, with stained oak increasingly replacing tropical species where darker colours are highly favoured. On-going work to modify the characteristics of temperate hardwoods and softwoods to improve their technical and aesthetic performance, mimicking the characteristics of tropical hardwoods, has been a significant threat to the tropical hardwood sector in EU markets.

German wood plastic composite (WPC) manufacturers were reportedly continuing to invest in new capacity in 2009. WPCs are becoming an increasingly important competitor for tropical hardwoods, particularly in the decking sector but also for cladding, construction mouldings, and garden furniture. Total European WPC annual capacity was reported as approximately 120 000 tonnes, while European imports of WPCs from North America (with capacity now closer to 1 million tonnes) are also increasing UK sales of thermally-treated and acetylised softwood products were also rising despite the recession, targeting tropical hardwood market niches, such as window frames, decking, cladding, bridges, and other external applications.

ITTO MIS (16-30 September 2009) also noted that the combination of these changes on the demand-side, and the supply-side problems emerging from widespread shutdowns and closures in tropical countries during the recession, suggested that tropical wood suppliers would face a major challenge to rebound from the downturn in the European market even as economic conditions begin to improve. This would require much larger investments in marketing, particularly to the architectural and design profession, product development, and certification, than has previously been applied by the tropical hardwood industry. Financing such activities would be particularly difficult after such a prolonged slump, suggesting that the tropical wood industry would need to find more effective ways of working together to implement a coherent market access strategy.

Oliver and Donkor (2010) noted that global design trends tend to be led by high profile designers who are more familiar with temperate wood than tropical hardwoods and may be prejudiced against the continued use of tropical hardwoods. The barriers to market entry are becoming higher as the competitive pressures resulting from the crisis “increase the need for product suppliers to regularly introduce new and innovative products, backed with appropriate technical information and design

recommendations. This in turn implies higher barriers to market entry, requiring considerable investment in products, the acquisition of market knowledge and proximity to the customer". The tropical hardwood sector's ability to influence design trends and maintain/increase market share has been further threatened as a result of the economic crisis by the limited finance available for marketing and R&D required for such initiatives.

Oliver and Donkor (2010) also noted that the recession had "further reinforced the need for finished products to be available for fast turnaround and in small, flexible container loads to offset uncertainty in consumption and prices. Retailers, wholesalers and importers are all increasingly working on a just-in-time basis and maintaining low inventories. These factors are working against tropical hardwoods, which tend to be more difficult to obtain at short notice at reasonably stable prices".

As a result of the economic recession, price has become a more important determinant of relative competitiveness which is a threat to higher end commodities such as tropical hardwoods. The crisis has disproportionately affected certain markets that have traditionally been important markets for tropical hardwoods, such as hardwood veneers in the southern European door sector (Oliver and Donkor 2011).

Significant structural changes in the European wood importing industry, which had begun several years before the crisis, had intensified in response to the recession. For example, ITTO MIS (16-30 September 2009) reported that dependence on just-in-time ordering of tropical hardwood goods from large corporations with concentration yards in the Benelux countries, had increased, in response to limited access to credit. As a result, these companies are becoming increasingly critical to the long term future of tropical wood in the EU. Uncertainty and lack of availability of credit is also encouraging a move away from any speculative purchases, and encouraging a shift to products and suppliers which are regarded as lower risk, usually to the detriment of tropical wood. In this environment, there are some signs that the relative power of larger better capitalised importing companies and merchants is increasing at the expense of smaller companies. The larger companies are more likely to demand environmental certification and to impose other technical requirements on their suppliers. This in turn is also encouraging a general shift to low risk products from an environmental point of view with importers actively avoiding tropical hardwood to improve their image.

5 IMPACTS OF POLICY RESPONSES AND REMEDIAL MEASURES – PRODUCER COUNTRY CASE STUDIES

5.1 Producer case study - BRAZIL

Background - the Brazilian forestry sector

The Brazilian forest sector is highly diversified and produces pulp and paper, lumber, wood panels, charcoal, value-added products (furniture, mouldings, flooring and other products) and other products. The tropical timber industry is largely concentrated on lumber, plywood, veneer and value-added products (mouldings, decking, flooring, wooden doors and other products).

The forest sector represents 3 percent of the country's GDP, but in some States the share of GDP is much higher. Forest products are mostly consumed locally, but exports are also important. In 2010, the forest industry exported around US$10 billion, almost 5 percent of all the country's exports. The forest sector is also important for employment generation, especially in remote areas of the country.

Forest Resources

Brazil has large forested land areas with forests covering around 60 percent of the national territory. General information on natural forests and forest plantation areas is presented in Table 5.1. The area of natural forests is around 512 million hectares. This forest area includes different types of forest ecosystems, but the most representative production forest is currently the tropical forest (rain forest) located in the Amazon region.

Table 5.1- Brazil: Forest area by type, 2010.

Forest Type	**Area *(1,000 hectares)***
Natural Forests	512,550
Planted Forests	6,972
Pine	1,756
Eucalyptus	4,754
Other	462
TOTAL	519,522

Source: ABRAF 2011; FAO 2010

The forest plantation area has increased over the last 10-15 years and currently totals around 7 million hectares. This area is expected to continue to expand over the next few years. Most of the forest plantations are pine and eucalypt species. Other important plantation species are teak, acacia and paricá (*Schizolobium amazonicum*). Some other exotic and native species have also been planted, but on a smaller scale.

Forest plantations have mainly been established in the southern and central-eastern regions of the country. Recently forest plantations have been expanded in the north and north-east-regions. In general, Brazilian forest plantations are highly productive and mean annual increments are usually higher than 30 m^3/ha/year. There are large-scale plantations producing 50-60 m^3/ha/year. The wood processing industry is now largely dependent on plantation timber which supplies more than 75 percent of all industrial wood. The share of industrial timber from plantations is expected to reach 80 percent in the next decade.

Wood processing industry

Information on the Brazilian primary forest industry production is presented in Table 5.2. The secondary wood processing industry, which includes production of furniture, mouldings, flooring, doors and other products, is also an important economic activity.

Table 5.2: Brazil - Production of primary wood products, 2010.

Product	Unit	Production
Pulp	1000 ton	14,054
Paper	1000 ton	9,775
Sawnwood	1000 m³	24,987
Coniferous	1000 m³	9,532
Tropical	1000 m³	15,455
Plywood	1000 m³	2,197
Coniferous	1000 m³	1,625
Tropical	1000 m³	572
Reconstituted Panels	1000 m³	6,643
MDF	1000 m³	3,036
Hardboard	1000 m³	380
OSB	1000 m³	210
Particleboard	1000 m³	3,017
Veneer	1000 m³	620

Source: BRACELPA 2011; ABIPA 2010; FAO 2011; ABIMCI 2008

Most investments in the timber industry have focused on secondary processing using plantation timber. Although tropical timber supply from natural forests is increasingly becoming a secondary supply source for secondary wood processing, it continues to be an important source of raw material for plywood, sawmilling and the value- added products industry.

The pulp and paper industry has developed rapidly over the last decade, and Brazil has become an important market player in this segment, especially in the short-fibre pulp industry (derived from eucalypt plantations). Current annual pulp production is around 14 million tons and paper production amounts to nearly 10 million tons. Several new pulp lines will become operational over the next few years; consequently, pulp production is expected to surpass 20 million tons by the year 2015.

The production of wood panels has also increased sharply in the last few years and is mostly based on particleboard, MDF and pine plywood. Current wood panels production is 6.6 million m^3. Investments in new lines of reconstituted wood panels will further increase production and by the year 2015 the total annual production of wood panels is expected to be reach 10 million m^3. The sawnwood, plywood and veneer industries are also growing, but at a slower pace. These industries consume tropical logs from natural forests, but the share of plantation logs (pine and other species) is gradually increasing.

Markets

Brazil has a large domestic market and most forest products produced are consumed domestically. Imports and exports of forest products are relatively small, but important in the trade balance. Table 5.3 presents data on Brazil's forest products exports for 2010. Total Brazilian forest products

exports in 2010 were valued at US$9.3 billion of which US$6.8 billion (73 percent) was pulp and paper.

Table 5.3: Brazil-Exports of forest products, by value, 2010

Product	Value ($US million)
Pulp and paper	6,820
Sawnwood	418
Tropical	264
Non-tropical	154
Veneer	30
Tropical	27
Non-tropical	4
Plywood	418
Tropical	58
Non-tropical	361
Other wood panels	85
Value-added products	1,441
Other products	117
TOTAL	9,330

Source: MDIC 2011

As a result of several factors the Brazilian timber industry has been losing competitiveness in the international market over the last three to four years, resulting in a reduction in the share of timber products exports, especially tropical timber products. In 2010, the most important timber products exported were tropical sawnwood, non-tropical plywood and value-added products (furniture, wood flooring and mouldings).

Impacts of the global economic crisis on the timber industry

Tropical Timber Exports

Brazil's production of tropical wood products is mostly traded on the domestic market, with exports being less important in volume terms. As the domestic market is quite large it has been more important to the tropical timber industry than the international market. In spite of the relatively small importance of exports, the volumes and prices of products traded in the domestic market are to some extent also affected by international market demand. Changes in international trade resulting from the global financial and economic crisis have also affected the domestic tropical timber market, to some extent.

Brazilian exports of primary tropical timber products, including plywood, lumber and veneer, in terms of value and volume over the 1996 to 2010 period, are presented in Figure 5.1. These primary products are used as a basis to analyse the impacts of the financial and economic crisis on the Brazilian tropical timber trade.

Over the period the following trends can be observed:

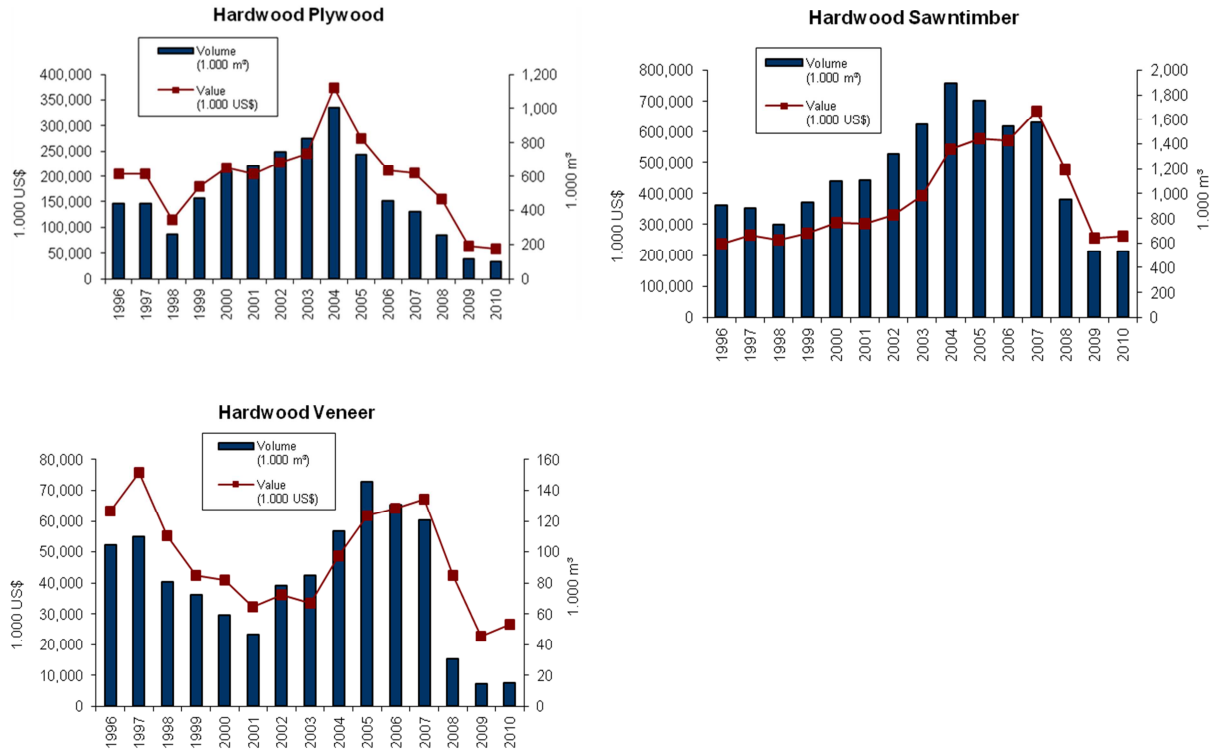
- Brazilian tropical plywood exports increased until 2004 to almost 1 million m^3 after which exports declined continuously until 2009. Any impacts of the economic crisis on tropical plywood exports cannot be clearly identified;

- In contrast, exports of tropical lumber and veneer exports generally increased to 2007 with a strong reduction in exports in 2008-2009. As a result of the crisis, exports of tropical lumber and veneer were reduced by around 70 to 80 percent from 2007 to 2009;
- For all products exported, volumes stabilized in 2010 and export values increased slightly as a result of a marginal increase in international prices in the post-crisis period.

Over the period, a change in Brazil's market orientation also occurred. In 2004, around 43 percent of the total volume of tropical plywood exported by Brazil, and 38 percent by value, was oriented to the US market. Between 2004 and 2010, particularly over the crisis period, markets became more diversified and in 2010, the US market had reduced to 8 percent by volume and 11 percent by value. In value terms, Brazil's exports of tropical plywood to other markets increased from 21 percent in 2005 to 55 percent in 2010. The same trend was observed for tropical lumber and veneer exports.

Another trend which has mainly been the result of the crisis has been a decline in Europe's share of Brazilian tropical timber exports although this decline has been less significant than for exports to the USA.

Figure 5.1: Brazil- Exports of tropical plywood, lumber and veneer, 1996-2010



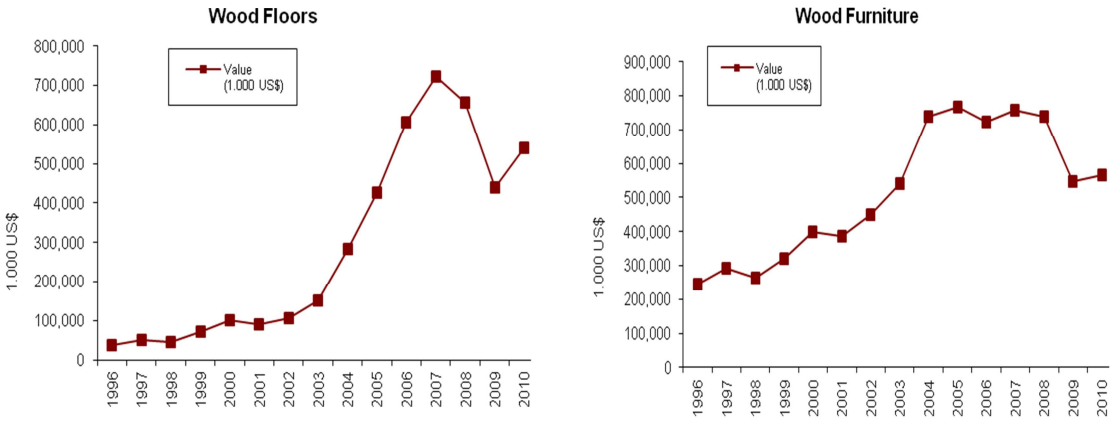
Source: SECEX- Brazil

Brazil's exports of secondary processed tropical timber products, including flooring and furniture, for the period 1996-2010, are presented in Figure 5.2.

The trends in value-added product exports show that:

- Annual export values of wood flooring and wood furniture increased continuously to 2007.
- Exports of these value-added products declined in 2008-2009, with the decrease mostly attributed to the combined effects of the demand impacts of the international crisis and an unfavourable exchange rate.
- For both products, export values began to recover in 2010, following the same trend as that followed by tropical lumber and veneer.

Figure 5.2: Brazil- Exports of wood flooring and furniture, 1996-2010



Source: SECEX- Brazil

With regard to secondary processed wood products, the trend in exports by destination is similar to that of primary tropical timber products (plywood, veneer and lumber), with the share of exports to US destinations declining due to the combined effects of a marked reduction in demand in the US and an unfavourable exchange rate. In 2005, 38 percent of Brazil's wooden furniture exports were to the USA but this share had declined to 12 percent by 2010. Similarly, the US share of Brazil's tropical timber flooring export declined from 70 percent in 2005 to 55 percent in 2010.

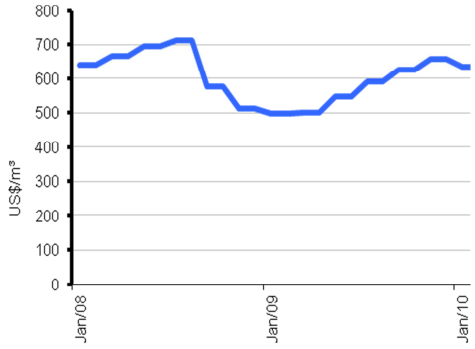
Tropical Timber Prices

Most of Brazil's timber exports are traded in US dollars. Domestic prices of wood products have, to some extent, been affected by export prices. Brazilian tropical plywood and tropical lumber domestic prices, in US dollars, covering the crisis period are presented in Figure 5.3. The impacts of the crisis, mainly due to reductions in demand, are evident. Nominal prices of tropical plywood and lumber declined by around 30 percent over the period, although most of the decline occurred in the second half of 2008. Prices of other tropical timber products, including value-added products such as flooring, faced similar price reductions over the period.

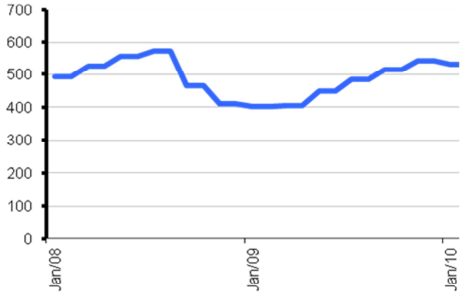
Prices of the selected tropical timber products began to rebound in the second semester of 2009, and in 2010 prices continued to increase. Current prices are similar to those prior to the financial and economic crisis.

Figure 5.3: Brazil - Domestic nominal prices of selected tropical timber products, 2008-2010

Tropical Plywood (Virola 15 mm)



Tropical Lumber (Green Jatoba)



Source: STCP data bank

Investment

Although there are indications that the 2008-2009 crisis reduced investments in the Brazilian tropical timber industry, there is limited data available to assess the effects, given that the investment data available does not differentiate between the tropical and non-tropical timber industries.

Domestic and foreign direct investments in Brazil's forest sector declined by 27 percent at the height of the crisis, from US$3.4 billion in 2007 to $US2.5 billion in 2008 (UNCTAD 2011). The crisis had changed the expectations of investors, who reduced and/or postponed investments in order to mitigate risks. Investment projections prepared in 2008 for the following five-year period, made in 2008, were almost 40 percent lower than those made in 2007 (UNCTAD 2011).

Impacts of the global economic crisis on the tropical timber sector – stakeholder perceptions.

The general perception of stakeholders interviewed for this case study was that the Brazilian tropical timber industry had been severely affected by the global financial and economic crisis. The effects were stronger in companies trading most of their production in international markets, while companies operating in the domestic market were less affected.

Stakeholders have generally pointed out that the crisis:

- increased production costs;
- reduced prices and demand for tropical timber products; and
- reduced employment in the forest and wood processing industries

Forest Impacts

The assessment of information available and of the findings from stakeholder interviews points out that the impacts of the crisis on forest area, plantation development, sustainable forest management, conservation areas, forest governance, forest policy development and other related issues were not significant.

Some stakeholders noted that that the crisis had affected private sector investments in forest related activities, but it was not considered a major issue. The only significant effect resulting from reductions in private sector investment was related to forest harvesting operations. As a result of

the crisis (lower demand) a reduction in harvesting levels was imposed, and this reduced employment in forest areas. Some companies also observed an increase, although relatively minor, in illegal logging.

The global crisis did not affect government forest related operations. Government investments involving conservation areas, forest governance, forest policy development and other matters were maintained at the same level. The small effect of the global crisis on forests was expected. Tropical timber operations in Brazil are largely based on natural forests, and forest management involves long-term planning and implementing of operations. As the crisis covered a relatively short time period and little changes were made in forest operations, the impacts generated were not significant.

Wood Processing and Forest Industries Impacts

As discussed previously, the global crisis significantly affected Brazil's exports of tropical timber products. Although the domestic market is relevant to the local tropical timber industry, international markets for tropical timber products are an important component of total demand, with the export-oriented industry being strongly affected. Production levels in the export-oriented tropical timber industry were estimated to drop by more than 60 percent in some industrial segments (such as the tropical plywood industry).

Although there is limited data available on the domestic market, the effects of the crisis were perceived to be mainly absorbed by export-oriented companies. As a result of the crisis and a reduction in exports, the industry as a whole reduced production and some had to stop their operations. The strong growth in domestic market demand over the period mitigated the impacts on the export sector to a certain extent, although production in the tropical timber industry was reduced on average by more than 30 percent on pre-crisis levels.

As mentioned previously, there are no official statistics on investments in the tropical timber industry in Brazil. However, most companies cancelled or postponed investments to improve and expand their industrial operations. The most affected industries were large companies with focus on the international market. Impacts on small companies operating in the informal market and trading timber products basically in the domestic market, were not significant.

Market Impacts

The crisis had significant impacts on demand levels in the United States and Europe which have traditionally been important markets for Brazilian tropical timber products. This resulted in a reduction in Brazil's exports of some tropical timber products by more than 50 percent. From 2007 to 2009, total exports of tropical timber products from Para State, the largest exporter state of tropical timber products, declined 56 percent by volume and 65 percent by value. Most of the decline occurred in exports to the USA. The growing size of the domestic market, and growth of the national economy over the last few years, has assisted in mitigating the impact of the reduction in the demand and prices of tropical timber products in the international market.

The global crisis accelerated a trend in reduction of the share of exports to traditional markets, especially the United States and Europe. As a result of the crisis, these traditional markets are becoming less important to Brazilian tropical timber exporters. For example, tropical plywood exports to other markets (e.g. Argentina) increased from 21 percent in 2005 to 55 percent in 2010,

although total exports to all destinations remained at a very low base. The same trend was observed for other tropical timber products.

As demand-side factors became more important than supply issues, prices of tropical timber products declined. Plywood and lumber prices declined around 30 percent, mainly in the second half of 2008. Similar price reductions were observed for other tropical timber products including value-added products such as flooring. Prices of tropical timber products started to increase in the latter part of 2009 and in 2010, to reach pre-crisis levels.

No specific market barriers or limitations to the trade of tropical timber products were observed as a result of the international financial and economic crisis.

Socio-economic impacts

Closing down production lines and reduction in production impacted regional and national economies, with reduction in revenues, taxes and employment. Employment was reduced in forest operations, in the tropical timber industry and in trade operations.

There are no consolidated national statistics on the level of reductions, but information from some States points out that the impacts were significant. For example, in Para State 11 000 jobs were lost in the timber industry, affecting several municipalities and small communities dependent on forest activities.

There is no indication that the crisis has affected community forest initiatives. These initiatives are normally not linked to exports, and therefore the impacts of the global crisis are expected to be minimal.

To some extent, the socio-economic impacts caused by a reduction in the activity of the tropical forest sector were mitigated by the positive response of other economic sectors. Since the second half of last decade, the Brazilian economy has experienced significant economic growth, and some economic sectors, such as civil construction, offered employment opportunities to workers retrenched from the timber industry.

Research, Development and Other Impacts

The impact of the crisis on research and development was not significant. Some stakeholders identified positive impacts such as private sector investments in new product and market developments to improve competitiveness. In principle, research and academic institutions were not affected. The crisis affected industry and trade associations which have reduced membership, and this has affected their working capacity and power.

Stakeholders noted that the global crisis was an additional component affecting the tropical timber industry, and that the trend in declining production has been the result of several other factors that have affected their competitiveness over the last decade. Other issues include: the devaluation of the US dollar; a lack of finance; and increasing government pressure and bureaucracy involving forest management and trade operations. Some of these issues impacting competitiveness are discussed further in the following section.

Although stakeholders mostly referred to negative impacts resulting from the global financial and economic crisis, some positive impacts were also mentioned. In order to mitigate the negative

impacts of the crisis, the timber industry was compelled to develop a strategy to strengthen itself. In some cases, new products and markets were developed which led to increases in efficiency and productivity.

Remedial measures and their effectiveness

Several remedial measures and interventions were developed and applied to mitigate the effects of the global financial and economic crisis on the Brazilian economy and which have had a trickle-down effect on the tropical forestry sector. In the forest sector some measures were developed at company level, and were mostly management interventions. Macroeconomic, strategic interventions were developed at government level.

Private Sector Measures/ Interventions

Some remedial measures/ interventions were implemented by the private sector although these were mostly isolated initiatives to mitigate the impacts of the crisis at the company level. Among the most relevant measures indicated by stakeholders were:

- *Reduction/ cessation of production*. All export oriented companies reduced their production and some have stopped production lines or the complete operation. The plywood industry was the most affected, particularly companies focused on the US market.
- *Re-negotiation of prices.* Some companies, especially those trading in countries other than the USA, were able to review prices, but renegotiation of prices was generally quite difficult.
- *Development of new products/ new markets.* The development of new products and search for new markets was a strategy adopted by several companies. Investments were made in new products normally linked to new markets. The Asian countries and other emerging countries became important market alternatives for exports.
- *Emphasis on value-added products.* As a general rule the global financial and economic crisis had a smaller impact on value-added products. Some companies invested in the development of value-added products together with new markets.
- *Increase of sales in the domestic market.* The large and strong demand domestic market became an alternative to exporting companies.

Stakeholders pointed out that the measures proposed/ interventions made by the private sector, including the reduction of production, development of new products and search for new markets were generally positive. The measures/ interventions proved, in some cases, to be sufficient to recover, in a relatively short period of time, the relative economic balance of individual company operations; nevertheless, still significant financial resources were lost due to overall reductions in trade and prices, and also investments needed to implement some of the measures. Also the impacts of the interventions took some time to be effective.

There were also cases of measures/ interventions made at company levels that were not as effective as expected, and in some cases investments made, for instance, in developing new products and finding new markets did not result in market growth. An increase in tropical timber products sales in the domestic market was the most common strategy adopted by the export oriented industry. Despite increasing demand resulting from the rapid economic development along the last years and investments for the Olympic Games and the World Soccer Cup, there have been some cases of oversupply affecting the domestic prices of some tropical timber products.

Government Measures/ Interventions

The Brazilian Government also implemented measures to ensure the continuation of national development and mitigate the effects of the global financial and economic crisis on the national economy. Measures were in general strategic, focusing on macroeconomic issues, but had impacts on the forest sector.

Among the government initiatives developed to mitigate the impact of the global financial and economic crises over the Brazilian economy were:

- *Review of credit line operations.* New credit lines were developed through the National Bank for Economic and Social Development (BNDES) and made available to the private sector to facilitate investments and increase the efficiency in production and trade.
- *Reduction in taxes.* Reductions if taxes were proposed and implemented for products applied in some selected strategic sectors to reduce costs. The civil construction and furniture industry were included and this favoured some timber products.
- *Economic Development Program.* Government increased the investments to accelerate economic development. Investment in the housing program and in infrastructure projects contributed to an increase in domestic demand for timber products.

Information to anticipate and mitigate effects of global demand shocks

In general, the Brazilian tropical timber industry uses published information, market reports and personal contacts, mainly based on their trade structure and contacts with clients, to obtain market information. Information, in some cases, is also provided by the industry and trade associations.

There is no structured service available or internal market intelligence expertise available to the industry to anticipate or identify market demand crises. Some companies noted that they have some information and expertise available, but the information/ expertise is not sufficient to clearly anticipate a global financial and economic crisis or other strategic market shocks.

There are also limitations to defining required actions to mitigate its impacts. The timber industry, including the timber trade associations, has not been able to organize effective actions at national level, to mitigate the effects of the crisis. Initiatives were, in most cases, at individual company level. Some stakeholders noted that a broader national discussion, involving the timber industry and the government could have been implemented to identify priority actions to mitigate the impacts of the crisis.

Other Aspects

A list of other factors exposing the industry to fluctuations in the international market was obtained during the interviews. Most of them have only an indirect relation to the crisis. The main points listed by stakeholders included:

- unfair trade practices in the global market;
- illegal timber;
- weak institutional structure of the Brazilian timber sector;
- lack of a national forest strategic development plan, especially to support the development of international trade;
- environmental restrictions; and
- unfavourable exchange rates

Competition with illegal timber and the informal market is regarded as a major constraint to Brazil's export market competitiveness. However, mechanisms developed by some importing countries, including, for example amendments to the Lacey Act in the US and EU's FLEGT initiatives, were regarded by stakeholders as being inefficient and have in some cases reduced market access.

Most companies considered that they were investing in their company's future. This included investments to increase productivity, reduce costs and gain efficiency. Investments in quality, development of new markets and certification of products were also mentioned.

Other recent structural and sectoral changes

As discussed previously, in addition to the demand effects of the economic crisis, a number of other factors have affected the tropical timber industry's competitiveness in recent years, including domestic inflation, input costs and price variability, and exchange rate movements.

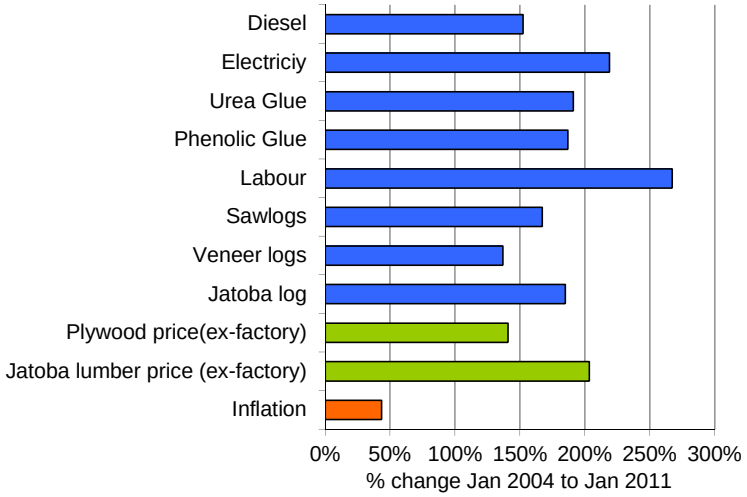
Inflation, Costs and Prices

Figure 5.4 presents trends in inflation and relevant cost components associated with the forest products industry operations in Brazil. It also presents price trends for tropical timber products for the period 2004 to 2011. All costs and prices were converted to US dollars for comparative purposes and therefore reflect movements in the exchange rate.

The accumulated Brazilian inflation from January 2004 to January 2011 was 43 percent. During this period, nominal prices of selected tropical timber products in US dollar terms increased more rapidly. For example, over the designated period tropical plywood prices increased 140 percent, and jatoba lumber increased by 200 percent. Similarly, increases in industrial cost components, measured in US dollars, were higher than inflation and in some cases higher than increases in product prices. Electricity and labour costs increased 220 percent and 250 percent respectively in the 2004-2011 period. Diesel and glue costs increased between 150 percent and 200 percent.

This simple cost, price and inflation analysis the high increases in cost components, partly associated with appreciation of the Brazilian currency, which have significantly reduced Brazilian tropical timber industry competitiveness in the international market over the last 5-10 years. The reduction in prices and demand resulting from the global crisis were additional factors impacting on the sector.

Figure 5.4: Brazil-Wood processing cost components, prices (US$) and inflation,



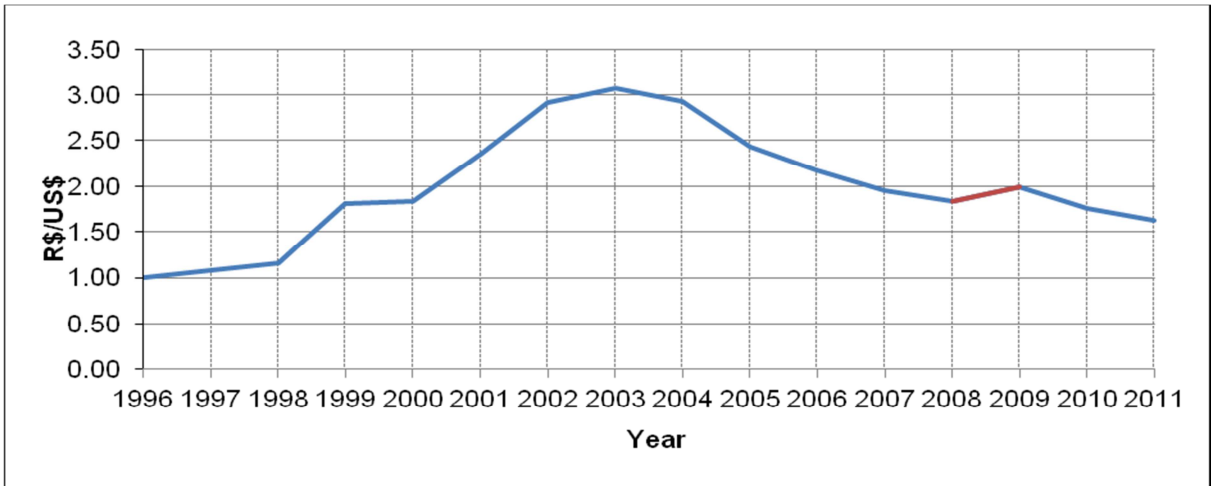
Source: STCP data bank

Exchange Rates

Yearly average exchange rates (R$/US$) for the 1996 to 2011 period are presented in Figure 5.5. Data shows that the exchange rate fluctuated significantly over the period. After a period of continuous devaluation, in 2004 the Brazilian currency (real) began to appreciate relative to the US dollar. Over the last seven years, the US dollar has depreciated around 50 percent relative to the real and this has reduced the competitiveness of Brazil's exports to the USA and other export markets.

The exchange rate was only slightly affected by the crisis, with the Brazilian currency real depreciating around 10 percent in 2008/2009. In 2010 and 2011, appreciation of the real continued, with the current exchange rate around R$1.6/ US$.

Figure 5.5: Exchange rate Brazilian real/US dollar, 1996-2011



Source: Brazil Central Bank

Other Aspects

There are several other aspects that have affected the competitiveness of the Brazilian tropical timber industry in the international market. Among the most relevant is the complex institutional and legal framework involving tropical timber industry operations. This complexity creates significant transaction costs.

There are also unsolved conflicts between the Federal government and State authorities involving forest and environment issues. These conflicts create additional needs studies and reporting, increasing the level of bureaucracy and adding new transaction costs. For instance, the approval process of forest management plans and harvesting permits can involve forest and environmental authorities, at federal and state level, which is a large time consuming exercise. The process requires several steps, involves several professionals and demands significant technical and administrative work.

Furthermore, Brazil in general (with the exception of a few States), has no clear forest policy to promote the development of the tropical timber industry and create a positive investment climate. This has limited the investment needed to sustainably manage tropical forests and to increase productivity and competitiveness of the tropical timber industry

Mitigation of risks

Brazil's tropical timber sector was seriously affected by the Asian economic crisis in the late 1990's, and in spite of the lessons learned it has been evident that the sector was unprepared to mitigate the effects of a new market crisis. The recent financial and economic crisis was global and affected all economic sectors, including the tropical timber industries in Asia, Africa and Latin America.

There are some lessons learned from the impact of the recent global crisis on the tropical timber industry in Brazil that can be applied to other tropical countries and other tropical regions, to mitigate risks related to future market volatility. From the lessons learned, the suggested actions to mitigate risk are:

- Develop market information and market intelligence

Access to market and trade information on tropical timber products, as well as a market intelligence structure, is important to anticipate actions needed to adjust business and investment for future changes in the market. The tropical timber industry in Brazil has access to general market and trade information, but there is no structured market intelligence system established.

A more comprehensive system for market information and intelligence gathering and analysis, that would be effective for the tropical timber industry, will require strengthening of private sector associations and improved cooperation between the associations and the government. Strengthened cooperation with international organizations, such as ITTO would also be desirable.

- Diversify products and markets

Diversification of products and markets was an important strategy adopted by the Brazilian tropical timber industry to mitigate the effects of the recent financial and economic global crisis. Some companies made large investments to develop new products and to open new markets. Companies with high concentration in a single market and with limited products had more difficulties in overcome the crisis than those that had diversified markets and a larger variety of products.

This crisis also showed the advantages of Brazil's large domestic market for timber products, and some companies that had previously focused solely on exports have learned that the domestic market is also an alternative market and should be considered as part of the company's marketing strategy.

- Invest to increase productivity and reduce costs

Continuous investment to increase productivity is fundamental to reduce costs, and to maintain market competitiveness. Although tropical timber producers compete with other tropical suppliers, they also compete with non-tropical timber and other materials products. Options for new products and applications are developed and introduced in the market continuously.

The options are, in most cases, to improve product quality and performance, and offer products to the market at a lower price. This makes a significant difference especially during crisis periods, when consumers start searching for alternatives. The tropical timber industry needs to invest to maintain a process of continuous gains in productivity to reduce costs and maintain competitiveness in a changing market.

- Focus on value-added and innovative products

As during the 1990´s Asian economic crisis, value-added products were less affected than primary wood products. Some reductions in the demand and prices of secondary processed wood products were faced during the recent crisis but the reductions were less severe and the recovery was faster. This suggests that the tropical timber industry needs to put more effort into the development and trade of secondary processed products, particularly value-added and innovative products

- Strengthen associations and cooperation

Strengthening industry and trade associations will facilitate the implementation of actions in strategic areas such as policy formulation, development policies, market information and trade, promotion, market intelligence and other relevant issues.

Strong and well-structured associations can also facilitate cooperation with government and other national and international organizations. This is particularly important in the case of Brazil as most of the timber industries are small or medium sized companies.

Most of the options are to be implemented by the private sector in cooperation with the government and other organizations. The government's main role is to improve the business climate to attract investments.

5.2 Producer case study - GHANA

Background – the Ghana timber industry

The Ghana timber industry is a major contributor to the economy of Ghana, accounting for 4 percent of the country's GDP (Ghana Statistical Service, 2010). Timber exports, which accounted for an average of 6 percent of export earnings in 2007, dropped to 4 percent in 2009 (Bank of Ghana, 2009). This has been mainly the result of high prices during the period for Ghana's main export products, namely cocoa and gold, resulting in higher contributions from these sectors as well as the weak performance from timber as a result of the global economic crisis. Despite the crisis, the price of cocoa reached a 23-year high of US$1,820 per tonne in December 2009. This was partly due to speculative investors and declining supplies from Côte d'Ivoire caused by political instability. Gold prices also reached a record high price in March 2008 at US$1030 an ounce thereby raising the contributions from sectors other than forestry.

In 2009, timber and timber products exports contributed about US$192.30 million to the country's total export value of US$5.9 billion. In 2010, timber and timber products exports were valued at about US$189 million (TIDD, 2010). The timber industry in Ghana directly employs over 100 000 people with an estimated two million people relying on the industry for various forms of livelihood. However, with the discovery and production of oil in Ghana the contribution of the timber industry and trade is expected to decline. Ghana has traditionally supplied timber products to five major European Union (EU) countries - Netherlands, Germany, Belgium, United Kingdom and France - and to the USA. These countries have been affected by the crisis.

In response to challenges in these traditional markets there has been a noticeable shift in market interest in developing trade to neighbouring West African countries. Although the West African market initially appeared to be promising, having been relatively unaffected by the global financial crisis due to weak linkages with global financial systems, recent developments show otherwise. West African governments have experienced decline in migrant remittances as a result of the crisis. Remittances account for 25 percent of GDP in Liberia and 13 percent of GDP in Mali (Shkolnikov, 2010). Ghana experienced a 16 percent decline in remittances in January to February, 2009 when compared to a similar period in 2008 (World Food Programme 2010).

Although the developed world, and in particular the G20, introduced measures to minimise the effects of the crisis, the African region did not introduce general economic measures to offset the impacts of the crisis. In the African region only the South African government appeared to have responded to the global crisis through the easing of monetary policy and the implementation of a fiscal stimulus package to support demand and job creation. In addition the South African Monetary Policy Committee (MPC) reduced interest rates progressively from December 2008. However, West African industry, with low interconnectivity with global financial markets, did not experience the effects of the global crisis until late 2010 (Oteng-Gyasi 2011).

Background on Ghana's economic policy 2009-2010

Despite a fall in private remittances from migrants by about 20 percent (a key contributor to national revenues), the impact of the crisis in Ghana was not apparent in 2008 and 2009. This can be attributed to:

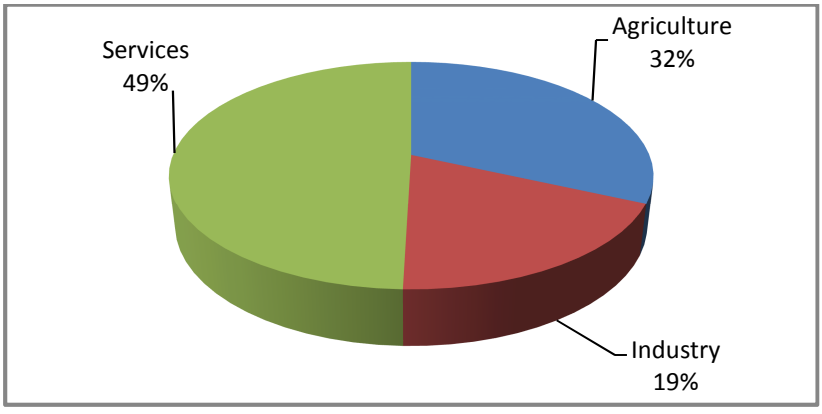
- the lack of interconnectivity with global financial markets resulting in delayed impacts on industry in Ghana, in particular the timber industry;
- government expenditure and the introduction of expansionary programmes in an election year (2008) that shored up the Ghanaian economy;
- fiscal deficit of US$1.8million as at the end of 2008 as a result domestic investments in infrastructure in boosting the economy;
- a large fiscal deficit financed with proceeds for Ghana's first Eurobond to a total amount of US$750 million that was issued in the latter part of 2007 to mature in 2017; and
- inflow of a US$600 million loan facility from the World Bank to cover a three-year period from 2009 that helped stabilize the currency (Ghana cedi) and reduce inflation. Inflation moved from 16.5 percent in 2008 through 19.6 percent in 2009 and has since fallen to 9 percent in 2010.

The Ghana economy performed well in 2009 as a result of favourable market conditions for Ghana's main export products, namely cocoa and gold. These two commodities helped the economy withstand the global financial crisis (Allum 2011). Ghana experienced 4.7 percent GDP growth in 2009, down from a predicted 6.0 percent growth. In 2009 the Government of Ghana, in its national budget (Ministry of Finance and Economic Planning, 2010), sought to introduce interventions for achieving growth and stability through the following objectives:

- Achieving macroeconomic stability and fiscal discipline;
- Modernization of agriculture and the provision of key infrastructural development;
- Promoting private sector development and the leveraging of information and communications technology (ICT);
- Introduction of social programs that target poverty reduction.

The main sectors in the Ghana economy as a percentage of GDP at basic prices are shown in Figure 5.6.

Figure 5.6. Ghana - Percentage share of GDP by sector



Source: Ghana Statistical Service, 2009

Growth rate projections for the agriculture sector, including forestry, are shown in Table 5.4.

Table 5.4: Ghana - Growth rate projections for the agriculture sector (%)

Type of Economic activity	2011	2012	2013
Total agriculture	5.3	4.9	4.8
Crops	5.5	5.0	5.0
Livestock	5.0	4.5	4.0
Forestry	4.8	4.8	3.8
Fishing	5.0	5.0	5.0

Source: Center for Policy Analysis (CEPA) 2011

Trends in key economic indicators for Ghana are shown in Table 5.5.

Table 5.5: Trends in key economic indicators for Ghana

	2006	2007	2008	2009
GDP at current price ($ billion)	20.3	24.7	28.2	25.9
Inflation (annual average)	10.9	10.7	16.5	19.3
GDP growth rate (%)	N/A	6.5	8.4	4.7

Source: Bank of Ghana, 2010

Impacts of the global economic crisis on the Ghana timber industry

This section discusses the impacts of the global financial crisis on the Ghana timber industry using information from both secondary sources and stakeholder interviews.

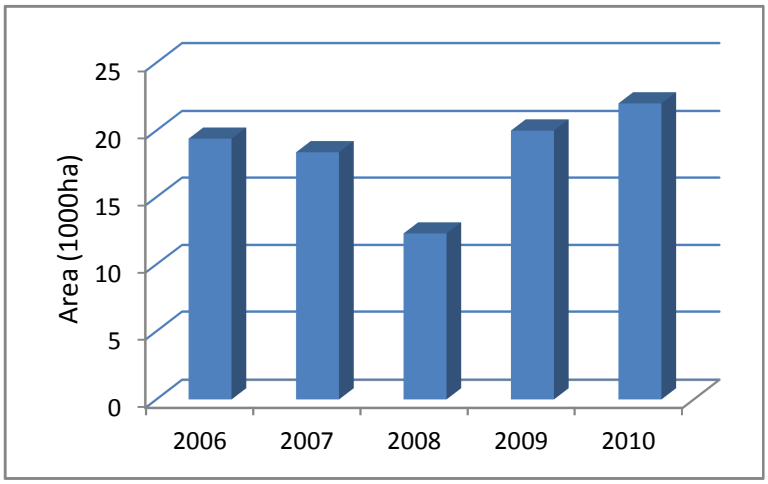
Forest impacts

The global crisis brought increased media attention to the forest sector in Ghana at both domestic and international levels. At the international level Ghana's signing of the Voluntary Partnership Agreement (VPA) with the EU attracted media attention towards Ghana's efforts in curbing illegal logging. The resources to implement the VPA were from sector budget support from donors to the Government of Ghana and were "ring fenced". Hence the global crisis had no effect on the implementation of the VPA/wood tracking system pilot that was undertaken. Implementation of the VPA allowed for stronger advocacy by civil society organizations working in the forest sector during the period, given that Ghana's traditional markets (EU and USA) had become increasingly discerning on environmental and climate change related issues. This had an impact on key exporters, resulting in two large-scale enterprises achieving chain of custody certification in order to maintain their market share.

National Forest Plantation Development Programme

The National Plantations Development Programme has been used as a means to create employment and enhance rural livelihoods. For instance in 2010, 28 308 new jobs were created through the plantations development programme. The crisis saw a reduction in the area planted in 2008 due to reduced budgetary allocations for the activity. Funding inflows for plantations development were affected in two areas, namely the level of funding and timeliness of the release. The release of funds was typically delayed resulting in ineffective utilization. Areas planted for the period 2006-2010 are shown in Figure 5.7.

Figure 5.7: Ghana - Area planted, 2006-2010



Source: FSD, 2011

The banks reported lower activity with respect to investment in plantation development in 2008-2009 and this had not returned to pre-crisis levels by June 2011. On a positive note, unlike many countries in the sub-region, Ghana did not experience the food crisis. This can be attributed to the plantations development strategy (Modified Tungya System), a model where farmers are allowed to plant food crops in the first five years while tending the tree seedlings that have been planted. This resulted in abundant food production in 2008 and 2009.

Progress towards SFM and trends in illegal logging

In the period under review, reports in international media and various published literature indicate a high incidence in Ghana of chainsaw milling, which is considered illegal under the Legislative Instrument (LI 1649) and has threatened the sustainability of forest resources in Ghana. A recent study estimates that illegal chainsaw production is widespread, including in forest reserves, and estimated at 2.5 million m^3/annum, supplying over 80 percent of the total domestic lumber demand of about 591 000 m^3 (Marfo et al., 2009).

The Chatham House "Illegal logging indicators country report card" for Ghana (Chatham House 2010) reported the following, which reflects the level of illegal logging in Ghana:

- There has been no significant reduction in level of illegal activities although there are higher numbers of reported cases which may reflect improved law enforcement in Ghana.
- Only a quarter of the timber supplied is from the formal sector.
- The bulk of the timber on the domestic market is from artisanal chainsaw milling and considered illegal.
- Parliamentary oversight has been good, reflecting improved governance in the sector.
- There is weakness in information management and the use of best practice in law enforcement.

Exports of Ghana timber to environmentally sensitive markets such as the EU declined in the period under review, reflecting buyers' perceptions of the supply of legal/sustainable timber from Ghana and other tropical sources. Ghana's ranking in the Chatham House European Union illegal logging report (2010) was poor in the areas of law enforcement, information management, transparency

and timber tracking. The lack of verified legal timber/certified timber from Ghana is resulting in the loss of market share in its key markets to competitors such as Malaysia with their strong brand of Malaysian Timber Certification Scheme (MTCS). In the light of the crisis, environmental issues will continue to drive the demand for wood and wood products in the markets of EU and the USA.

Forest policy development

Although the Forest and Wildlife Policy of 1994 is being reviewed this has been a planned process to take into account the emerging issues such as climate change, rather than a response to the crisis. Since 2009, the review has been taken through a multi-stakeholder consultation process. However, the fall in export markets and the inability of the domestic market to provide an outlet for wood and wood products has necessitated promotion and development of the domestic market. One of the lessons learned from the crisis has been the need to evolve a domestic market policy that seeks to promote value-added processing of timber for domestic consumption, and to develop a fully functioning domestic market to mitigate any future adverse changes in the international market situation.

Wood processing and forest industries

Wood processing and forest industries impacts

The stakeholder interviews revealed that although at the macroeconomic level the impact of the crisis was low, in the West African sub-region the timber industry had experienced some challenges. These included:

- Mill closures, particularly for SMEs in the logging and sawmilling sectors. These companies could not withstand the increases in production cost as a result of higher energy costs and tariff increases on utilities and petroleum products. In addition, logging companies had difficulties in receiving payments for logs supplied and sometimes the delayed payments affected their cash flows ability to keep their businesses operating;
- Industry in Ghana remains focused on primary rather than secondary processing. Hence companies had difficulties in absorbing the additional costs and weaker prices that arose as a result of the crisis;
- Lack of credit due to high default rates by timber firms and the tightening of terms of borrowing, including higher interest rates that ranged from 23 to 28 percent;
- Mills held high inventories/stocks affecting their liquidity, ability to service loan facilities and hence investments into re-tooling and modernization in the period.

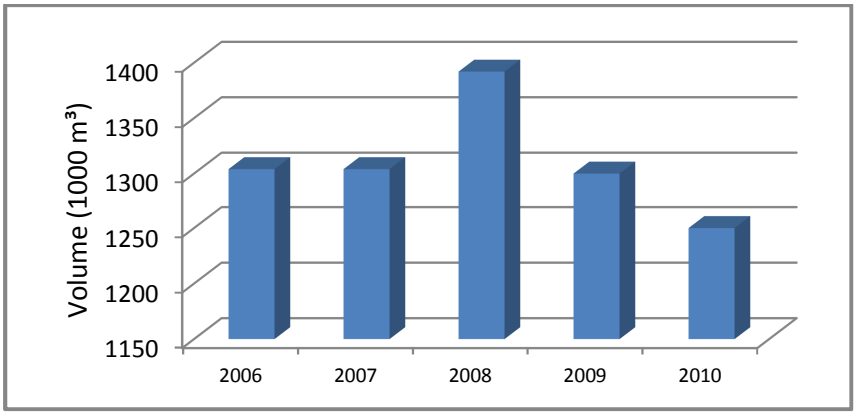
Trends in production of timber products

Log production

Log production trends in Ghana for the period 2006 to 2010 are shown in Figure 5.8. In 2009, Ghana's log production declined 7 percent over the 2008 level. This can be attributed to reduced export demand in traditional wood products markets, particularly the EU. Four species, namely wawa (*Triplochiton scleroxylon)*, ceiba (*Ceiba pentandra)*, teak (*Tectona grandis*) and ofram (*Terminalia superba)*, account for an average of 62 percent of the annual production volume. Production of wawa, a key species in Ghana's exports, has declined 46 percent by volume from 163 000 m^3 in 2006 to 88 000 m^3 in 2010. Ceiba on the other hand has seen a gradual increase from

154 00 m^3 in 2006 to 171 000 m^3 in 2010 and can be attributed to increased demand for Ghana plywood by neighbouring West African countries, particularly Nigeria.

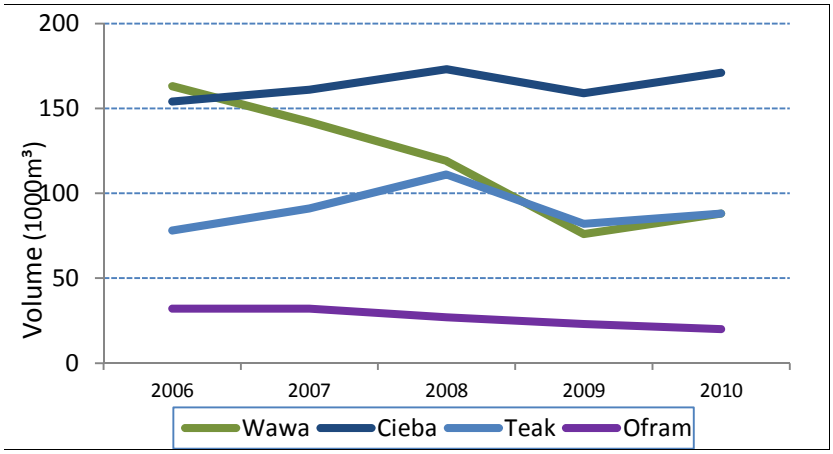
Figure 5.8: Ghana - Log production, 2006-2010, by volume.



Source: TIDD, 2011

The changes in species performance for the four main species are shown in Figure 5.9. The year 2008 saw sharp decreases in the production of ofram and wawa, reflecting the possible impact of the crisis in the demand and production of these species. However, the number of species produced rose only marginally from 84 species in 2006 to 85 species in 2010, reflecting a slow growth in utilization of lesser used species (LUS). LUS are mainly used for plywood destined for the West African market.

Figure 5.9: Ghana - Log production by major species, 2006-2010, by volume



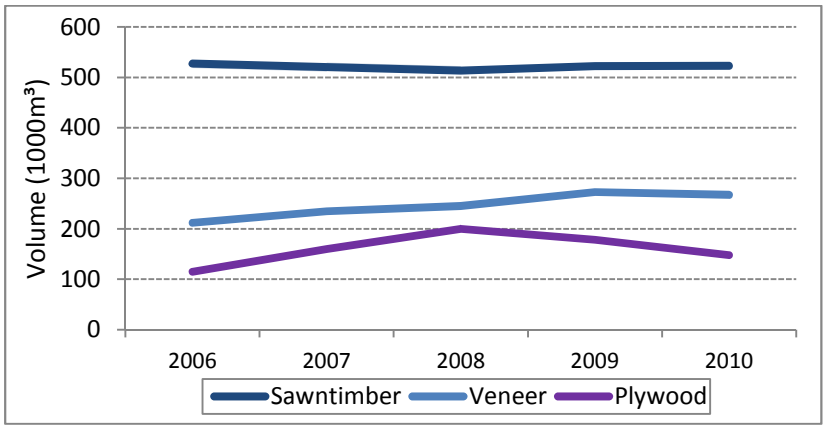
Source: TIDD, 2010

Sawntimber, veneer and plywood production

Figure 5.10 shows trends in production volumes of primary products in Ghana. While plywood production decreased between 2008 and 2009, veneer production increased. This may be explained by unrecorded exports to the West African region, where the plywood trade has increased significantly. The lack of production data on value-added products constrains the analysis on the impact of the crisis on the production of these products. However, stakeholders indicated that

value-added production had decreased, partly due to resource constraints and competition from imported Chinese products, particularly furniture and panel products. Imports of plastic panels have grown and replaced market share for wood panels in Ghana. Ghana's flagship company in the production and export of knockdown furniture (Mim Scanstyle) went into liquidation during the crisis period.

Figure 5.10: Ghana - Production trends in primary products, 2006-2010, by volume



Source: ITTO, 2011

Business operations

As indicated previously, the crisis period saw a number of closures of mills in Ghana, although many were already in difficulties and the financial and economic crisis sped up these closures. The SMEs were hardest hit by the crisis. For example, a number of mills were assisted by being given access to raw material to enable them to supply timber to the domestic market but this did not prevent mill closures. Some respondents indicated that the areas granted as timber utilization contracts were in off reserves where stocking is low and production is expensive. Plant utilization was also influenced by the frequent power outages and rationing due to low water levels in the Akosomo dam power generation unit.

High family ownership of timber firms in the country prevented firms from sourcing funding from the emerging stock market in Ghana, with perceptions of losing ownership and the requirements of transparency and public disclosure being an issue. Public listing or ownership could be a potential source of securing funding for retooling and modernisation of firms in Ghana while spreading the risk of the investment thereby limiting exposure to market volatility. However as the impact of the crisis eased in 2010 there have been some acquisitions in two firms although these acquisitions are not public.

The Wood Industries Training Center (WITC) witnessed low levels of participation in their training programmes. WITC reported a 90 percent reduction in the level of industry participation in its programmes that charge fees (Abukari, 2011). This implies that training may have been one of the areas where the Ghana timber industry reduced expenditure in order to cut their production costs.

Foreign Direct Investment (FDI) in the forest sector

The Ghana Investment Promotions Center (GIPC) reported that inflows of FDI to developing countries declined by 35 percent in 2009 after six years of strong growth (GIPC, 2010). Africa

experienced a decline in FDI from US$ 87.6 billion in 2008 to US$ 55.9 billion in 2009. FDI inflows to Ghana fell from US$ 4.49 billion in 2007 to US$ 0.55 billion in 2009. This has since risen to US$ 4.1 billion in 2010. FDI inflows in the wood and wood products sector for 2007 to 2009 are shown in Table 5.6. The US$ 5.63 million investment in the wood and wood products sector in 2009 was a single investment for the production of wood pellets for biofuels from wood waste. The low levels of inflows to the forestry sector indicate that the industry has not yet taken advantage of opportunities created from the global financial, food and energy crises in order to optimize utilization of the resource. The low levels of investment are a reflection of the perception that the size and quality of the forest resource is inadequate to support a significant industry, given that other sectors are enjoying FDI inflows.

Table 5.6: Ghana - Inflows of foreign direct investment to the wood and wood products sector, 2006-2010

Year	FDI inflows to the wood and wood products sector (US$)	FDI inflows into Ghana-all sectors (US$ billion)
2006	469 200	2.32
2007	1 789 217	4.49
2008	402 089	3.44
2009	5 632 773	0.55
2010	8 215 872	4.11

Source: GIPC, 2010

Industry competitiveness

In assessing Ghana's industry competiveness the following factors were considered:

- Increasing costs, particularly energy, utilities (i.e. water/electricity), and transport (including shipping) were considered constraints to the industry's competitiveness. A number of respondents, particularly the large scale enterprises (LSEs), indicated the high cost of providing social amenities and services to forest communities.
- Over-regulation and bureaucratic controls by government over the supply chain for production and trade in the timber sector increased transaction costs.
- The strength of the local currency, the Ghana cedi, against major international currencies has been strong and has affected export pricing of wood products.
- High interest rates have impaired firms' ability to borrow for investments in modern technology and continue to depend on old equipment, particular for the SMEs.
- Industry in Ghana continues to be dominated by the sale of primary products and suffers from commoditisation, where prices are affected by changes in the market.
- Slow pace of uptake of information and communications technology in production and trade has not provided a comparative advantage for the Ghana timber industry and trade.
- Raw material constraints resulting in trucking from long distances to centres of production constrains the competitiveness of firms.
- The small size of firms in Ghana has not allowed them to take advantage of economies of scale. Industry continues to be fragmented and the service sector in the industry is

undeveloped resulting in the loss of competitiveness which was pronounced during the crisis.

- Shipping, particularly intra-regional, continues to be a challenge. The crisis resulted in delayed arrivals of vessels or cancellations of service, sometimes at short notice, thereby making Ghanaian shippers appear to be unreliable and negatively affecting their competitiveness. This has been further aggravated by the lack of skills in the production of value-added wood products and declining levels of exports of value-added wood products. The decline in exports, in particular that of value-added wood products, also reflects the lack of innovation in the value-added sector of the timber industry.

However, despite these challenges Ghana remains competitive in terms of price and quality in the production and sale of teak logs (mainly to India), sawntimber (USA, EU and Senegal), plywood (West Africa, particularly Nigeria) and veneers (USA and EU) when compared to other suppliers in the African region such as Cameroon, Gabon, Côte d'Ivoire and Liberia. Ghana is a lead supplier of plywood to the West African market, despite competitive threats from Chinese plywood. Some plywood manufacturers had collectively lowered prices in mid-2008 to ensure that Chinese plywood imports did not gain market share in Nigeria and Ghana. However, Ghana's plywood is not competitive in US and EU markets compared with other suppliers such as Malaysia, Brazil, Indonesia and China, partly due to price and quality requirements in developed markets. Respondents generally considered Asian suppliers (Indonesia, Malaysia and China) as major competitors with significant comparative advantages compared with Ghana in the EU and USA given their:

- level of infrastructure development;
- economies of scale in production of plywood (large mills);
- higher quality and finishing of their products, particularly plywood and value-added products such as mouldings and other SPWPs; and
- lower price offerings particularly for plywood.

Research and development impacts

The global financial crisis did impact the level of inflows to research and development. The Forest Research Institute of Ghana (FORIG) reported decreases in inflows to support research and development (R&D) work (Agyeman, 2011). Shortfalls in inflows to research were estimated at US$ 750 000 in 2007, US$ 500 000 in 2008 and US$ 350 000 in 2009. There was no deliberate attempt by industry to use R&D to provide them with competitive advantage either at industry or company levels. The research institutions and academic institutions also did not develop programmes to assist industry in difficult times. Linkages between research and industry in Ghana remains weak and the crisis has highlighted the need for research and academic institutions to take advantage and lead innovation and product development in order to enhance the competiveness of the industry.

Market impacts

Ghana's total wood and wood products exports (primary products and secondary processed wood products) by value for the period 2006-2010 are shown in Figure 5.11. Timber exports rose from US$214 million in 2006 to US$251.9 million in 2008. Exports fell to US$192 million and US$190 million in 2009 and 2010 respectively, representing a 24 percent and 25 percent decline in export revenues. This impacted adversely on the sector's contribution to export revenues given that

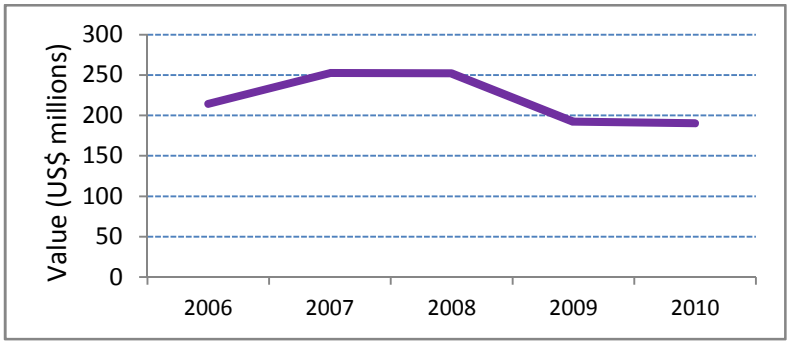
gold and cocoa, the other main commodities, were experiencing high price levels on the international market.

A second contributory factor to the decline in export levels is the reduction in volumes of teak log exports in 2009. An export ban on teak logs had been in place prior to September 2005, but this was lifted in the latter part of 2005 to allow for removal of existing stands that had poor structure and quality. Following the lifting of the ban, teak exports have grown from 23 655m³ in 2006 to peak at 112 299m³ in 2008, but fell in 2009 to 64 272m³ due to difficulties in sourcing raw material

The sharp decrease in teak export earnings and volumes in 2009 can be attributed to:

- the impact of the global economic crisis;
- reduction in auctioning of plantation stands in 2009; and
- reduction in the level of administrative permits issued for the harvesting of teak stands in 2009 due to non-availability of the stands. Allocations from the government plantations appear to have been exhausted and production and exports of teak are now mainly from private plantations.

Figure 5.11: Ghana - Total wood products exports, 2006-2010, by value



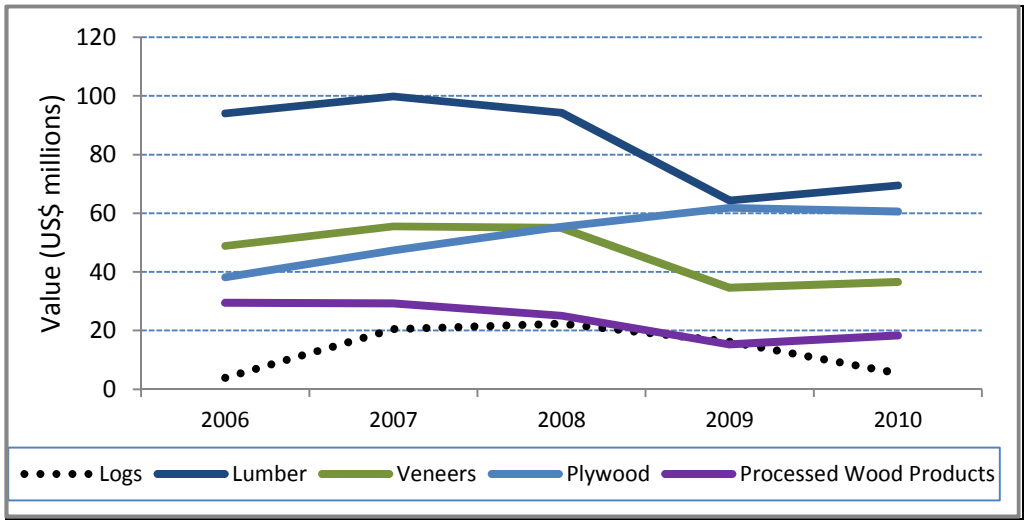
Source: TIDD, 2011

The effect of the decline in exports of plantation timber is evident in Figure 5.12 when exports by product are considered. Log exports are now declining after the initial surge in teak exports, although this is a consequence of the lack of log availability rather than the result of the impact of the global economic crisis. Plywood exports on the other hand have enjoyed a steady increase over the years and do not appear to have been affected by the crisis. In the wake of the crisis the timber industry had diversified their sales of plywood to the West African market, particularly to Nigeria, resulting in increased use of veneers for plywood production, thereby reducing the market availability of veneers. Millers interviewed indicate that plywood sales to West African markets offer similar prices to the European market but with considerably less quality requirements.

SPWP exports, on the other hand, have suffered a severe decline since 2006. One of the companies that accounted for almost 90 percent of Ghana's exports of value-added products had gone into liquidation. The company invested in logging and sawmilling to ensure the flow of raw material (sawntimber) for production into value-added products, particularly garden furniture. This resulted in the company shifting away from its core business and into non-core activities which resulted in poor financial returns. In addition the downturn in the market (United Kingdom) for garden furniture

created lower financial inflows to the company. Lumber exports also suffered a severe decline but has since 2010 been on the path to recovery.

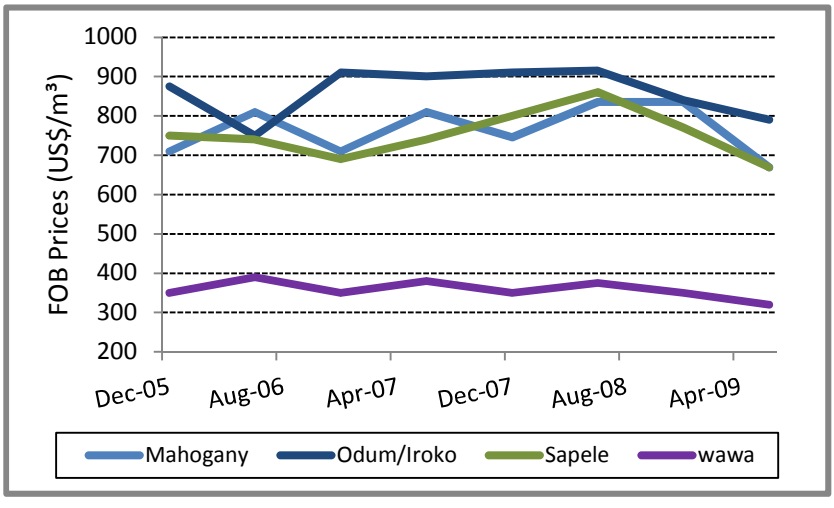
Figure 5.12: Ghana- Exports of wood products, by value, 2001-2010.



Source: TIDD, 2011

Export prices (nominal FOB) for selected species of kiln-dried lumber are shown in Figure 5.13.Prices have been relatively unstable for kiln dried lumber since December 2007, reflecting the level of uncertainty in the market as a result of the crisis. As at December 2008, export prices of all the four species listed were declining, indicating the extent to which primary products are exposed to price volatility. A number of persons interviewed from the industry acknowledged the rapid collapse of prices since the global crisis with some reporting cancellations of contracts and declines in firm orders. The challenges of the period resulted in the Timber Industry Development Division, which has responsibility for pricing and pre-shipment inspection in Ghana, introducing a flexible pricing system in order to promote sales of Ghana's wood products. TIDD also strengthened its promotional activities on emerging markets such as the ECOWAS region.

Figure 5.13: Ghana – Kiln-dried lumber prices, selected species, December 2005-June 2009.

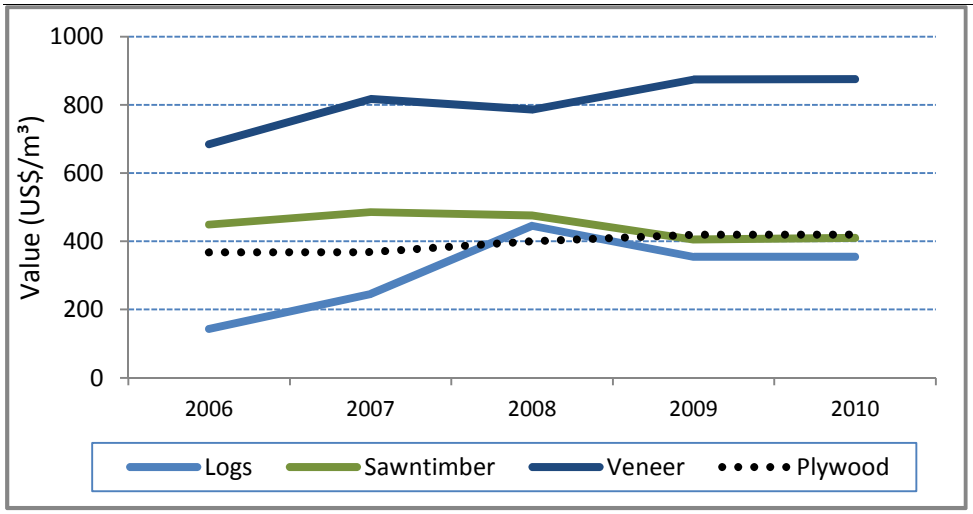


Source: TIDD, 2010

It is notable that sales of timber from Ghana are in three major currencies, namely, UK pound sterling, US dollar and the euro. The US dollar sales are mainly to the USA, Middle East and West African markets; the pound sterling is to the UK market and the euro to the European Union market. The volatility of the currencies during the financial and economic crisis in 2008-2009 may have resulted in the volatile nature of prices for wood products in Ghana.

When average unit values are considered, plywood and veneers have shown resilience during the crisis with a steady growth in their prices compared with logs and sawntimber (Figure 5.14). Weakening of plantation teak log prices could be a result of the speculative nature of the trade in Ghana and the large volumes from small private plantations that are mainly destined for the Indian market. Veneer prices have increased due to market diversion to developing countries that were less affected by the crisis. Veneer exports are mainly of higher-value species, namely asanfina (*Aningeria spp*), sapele (*Etandrophragma cylindricum*), mahogany (*Khaya ivorensis*) and chenchen (*Antiaris toxicaria*) and they are exported by a limited number of companies, mainly the LSEs.

Figure 5.14: Ghana - Average unit values, by wood product, 2006-2010



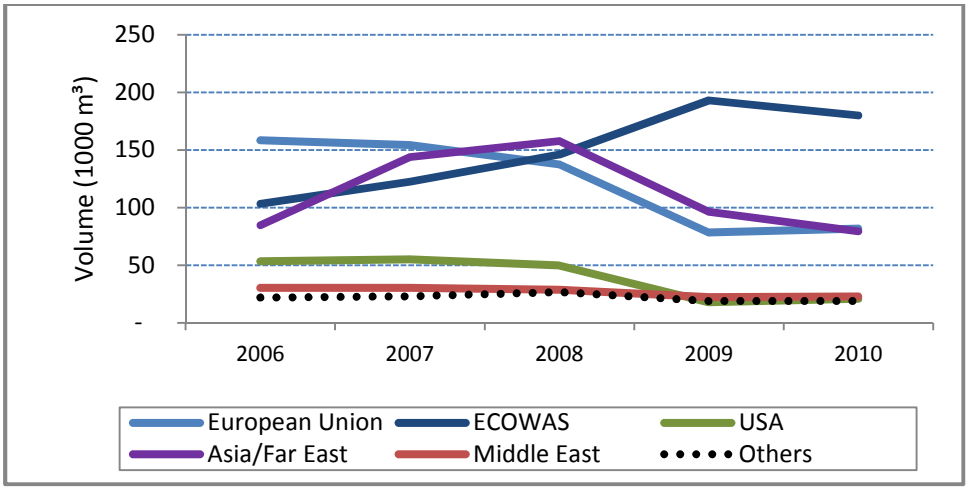
Source: ITTO 2011

Export market performance by region is shown in Figure 5.15. The EU, which accounted for 35 percent of the total timber export volume in 2006, accounted for only 20 percent of the volume in 2010. The decline of Ghana's exports to the EU can be attributed to stringent environmental requirements (the emerging procurement policies) and to the impacts of the global economic crisis, in particular the slowing of market demand as a result of the credit squeeze and tightening of financing conditions in 2008.

Exports to the Economic Community of West African States (ECOWAS[5]) on the other hand rose from 22 percent in 2006 to 45 percent in 2010 – a market that is not environmentally sensitive and which is accounting for a large proportion of the plywood trade. All the other markets experience declines in the export volumes, reflecting generally the effects of the crisis on timber exports from Ghana.

[5] ECOWAS countries include Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea Bissau, Liberia, Niger, Nigeria, Senegal, Sierra Leone and Togo

Figure 5.15: Ghana - Exports of wood and wood products, by destination region, 2006-2010



Source: TIDD 2011

Domestic market

The domestic market in Ghana remains underdeveloped and to a large extent unregulated resulting in a high proportion of the market being supplied by illegal chainsaw timber. A recent study estimates that illegal chainsaw milling accounts for about 85 percent of domestic consumption of 591 000 m³ (Marfo et al, 2009). The lack of data on the domestic market makes it difficult to assess the level of impact of the crisis on the domestic market. However, the perceptions of persons interviewed reflect the need to develop the domestic market if Ghana is to promote value-added processing. The domestic market is also critical in addressing the challenges of illegal logging and chain sawntimber production for the domestic market. In this regard the government of Ghana is developing a public procurement policy for timber.

Barriers to trade

The study did not identify any barriers to trade in importing countries but industry operators interviewed emphasised the increasing demand for legal/sustainable timber. The introduction of the US Lacey Act in 2008 is impacting on the trade for wood products since US importers will seek to import timber from verified legal/sustainable sources. Furthermore, the EU FLEGT initiative, the introduction of public procurement policies (PPP) in the EU and the adoption of the EU Timber Regulations (2010) imply a growing demand for verified legal/certified timber in the EU market. To date only three companies from Ghana have achieved certification for controlled wood (chain of custody certification). Despite the crisis and the additional cost burden, these companies worked to achieve certification in order to gain access to international markets. From the timing of the dates of issue of the certificates, from October 2008 to May 2011, it would appear that the companies seek to enhance their competitiveness by being certified and their decision to pursue certification may have been influenced by the crisis.

Access to market intelligence.

The Ghana timber industry has access to market intelligence reports through the Forestry Commission's office in London. However, a growing emphasis on promoting eco-tourism has reduced its effectiveness in monitoring and reporting on prices of wood products. Hence its flagship

publication – "The Ghana market report" has been discontinued. Individual firms with the exception of LSEs do not have access to market intelligence information. Relatively few firms have used ITTO market reports, although this service has been discontinued by ITTO. The work of the IWPA in providing market updates and developments on the American market and policy discussions is utilised by the industry. The Ghana timber industry has been participating for over a decade in the annual conventions of IWPA.

The use of ICT by the industry for providing market intelligence information and conducting e-commerce is weak. Individual companies do not have the capability to undertake this work. However, a number of interviewees considered this as an additional cost which could be provided by government. Very few mills are aware of portals that trade in timber and timber products. The use of ICT to leverage sales and the transfer of technology, particularly during difficult times, provides an opportunity to increase industry competitiveness.

Customer relationships

During the crisis Ghanaian companies developed new clients, mainly in the West African sub-region. Those interviewed reported challenges in traditional markets with some clients cancelling or redirecting orders on the least pretext. On the domestic market, the period saw growing tensions between loggers and millers, mainly due to delayed payments for logs delivered or payments spread over long periods, creating challenges for log suppliers.

Socio-economic impacts

As indicated previously, the crisis resulted in company closures and reduced employment in the sector. However, the impact was mitigated by the implementation of the government's plantation development programme and its social intervention programmes such as the Local Enterprise and Skills Development Programme (LESDEP). LESDEP provides opportunities for job creation for the youth in Ghana.

The Timber Resource Management Act, 1997 (Act 547) and its regulations, in particular, the Legislative Instrument (LI 1721)-Timber Resource Management regulation requires the timber operator "to provide social facilities and amenities for inhabitants of the contract areas in accordance with the relevant social responsibility agreement (SRA)". Although the law provides for a ceiling on the SRA taking into account the resources to be extracted, land owners and communities tend to request additional benefits. The crisis resulted in lower income streams for companies and reduced their ability to meet requirements under the SRAs. This sometimes created difficulties between the concessionaires and the forest communities which impacted negatively on forest operations, in particular log production.

Remedial measures and their effectiveness

Literature reviewed, secondary data analyzed and the interviews did not show any specific interventions or stimulus packages that were introduced by the government of Ghana to mitigate the impact of the global economic crisis on the timber industry or any other sector of the Ghanaian economy in terms of targeted interventions. Neither was there any regional nor sub-regional efforts at mitigating the impacts of the crisis. With the exception of South Africa, no other African country offered stimulus packages to mitigate the impact of the financial crisis

However a number of initiatives were introduced as part of the budgetary planning process of the Government of Ghana, the timber industry, shipping lines, banks and the various firms in the supply chain. These measures included the following:

- The government of Ghana floated euro bonds to reduce its budget deficit while gaining access to finance in order to support domestic infrastructural development, thereby providing opportunities for contractors and creating jobs.
- The euro bonds and loan facilities from the multilateral agencies provided the impetus for stabilizing the economy in the light of the global financial and economic crises and providing relief to all sectors of the economy.
- The government, through the Ghana Investment Promotion Center (GIPC) introduced an aggressive investment promotion programme to attract investments, particularly from Middle Eastern countries and China. It appears these countries where less affected by the financial and economic crises.
- Petroleum risk management intervention occurred through removal of taxes on petroleum imports and subsidies to reduce the pump price of petroleum and petroleum products.
- Introduction of social intervention programmes, in particular the Local Enterprises and Skills Development Programme (LESDEP) as a programme for creating employment for the youth through skills development and the provision of equipment and machinery to work. The LESDEP is expected to develop skills of the youth in areas such as mobile phone and laptop repairs, construction and agro processing among others.
- Banks delayed the introduction of some of their products and reduced lending to minimize their risk.
- A number of companies took advantage to retool by purchasing second hand equipment that were being sold in the developed world due to closures.
- Reduction in harvesting and production levels occurred which sometimes resulted in the laying off of staff.
- Forest and chain of custody certification was pursued as a means of gaining access to markets, particularly in light of procurement policies that have been introduced in Ghana's traditional markets (particularly the EU). The pursuit of forest and product certification by these companies offers them a competitive advantage in the current market situation.
- Certification companies, meanwhile, had challenges with respect to funding their support activities in Ghana and adopted a cost sharing approach to promoting certification in Ghana.
- Shipping companies provided inducement to attract cargo and quick turn round time in the ports to avoid paying demurrage thereby keeping transaction costs on the low side. There was however, strong competition from the cocoa industry which was enjoying high market prices for vessels.
- Market diversification particularly for plywood in the domestic and regional markets.
- Flexible pricing mechanism as a means of promoting export sales.
- The Ghana Timber Millers Organization entering into a memorandum of understanding with the Ghana Real Estates Limited for the sale of wood products to estate developers with the view to improving their sales and providing legal timber to the domestic market.

Mitigation of risks

The following risk factors were considered in assessing the extent of exposure of the country to market volatility and actions that could be implemented in minimizing the effects on the timber industry in Ghana:

- Political risk –Ghana is perceived as a country with good democratic systems, good governance and has provided space for civil society organizations, such as Forest Watch in the forest sector. Additionally Ghana is seen as one of the stable countries in the West African sub-region. On the basis of good governance and political stability, political risk is currently considered low and Ghana has the potential to attract investments and trade into the forest sector of Ghana, particularly for plantations development and industry modernisation. It is expected that this level of political stability will give comfort to both investors and buyers of Ghana's wood products. In this regard Ghana has a comparative advantage compared to other countries in the sub-region that have recently experienced election related violence and conflicts.

- Economic risk – Ghana's GDP grew 7.7 percent by end of 2010 making it one of the highest growth rates in the history of the country. With the production of oil in the latter part of 2010 and strong performance for gold and cocoa, Ghana is expected to have a favourable balance of payment in 2011. For instance, export earnings increased by 33 percent as a result of the upsurge in price of gold and cocoa in 2010 (Daily Graphic, 2011). Inflation has declined from the high rate of 20.7 percent in June 2009 to about 9 percent in December 2010. The government of Ghana has used petroleum risk management intervention to shield the economy from market uncertainties and minimize the negative effects of swings in crude oil prices on the international market. Although this intervention is not specific to the wood and wood products industry it offers relief because of the high transport and energy cost in the production, transportation and processing of wood and wood products. Given the high economic performance the economic risk to Ghana and the industry in particular is low. However, the performance of the economy will be tested in 2012, which is an election year. Unreliable power has also been a constraint to industry and a high component of cost in the production of wood and wood products. In the aftermath of the global financial, food and energy crises the government of Ghana has committed to improving power supply by building a new hydro project – the Bui dam in the northern part of the country. This is expected to improve power supply and enhance the competitiveness of industries in Ghana. Reliable power supply could lower the risk of the impacts of market volatility.

- Social risk – Unemployment in Ghana is reported to be high though there are no recent statistics available. However, in 2000 unemployment was estimated at 11 percent. LESDEP is a public-private sector partnership that seeks to create and facilitate the acquisition of entrepreneurial skills among the youth in the country. This will provide the opportunity for unemployed youth to be trained and employed in sectors such as mobile and laptop repairs, construction, catering, garment and fashion etc. This could create a safety net for Ghana and avoid the current spate of demonstrations and agitations that have rocked governments in some parts of the world.

- Environmental risk – The Chatham House illegal logging report indicates the level of illegal logging in Ghana to be as high as 65 percent of its production. This has implications for Ghana's timber exports, which have been shifting away from the EU to less environmentally sensitive markets. With growing demand for verified legal/timber from sustainably managed sources, market volatility will result in continued demand for timber from at least verified legal sources. Ghana's engagement in the FLEGT process and the signing of a VPA with the EU provides an opportunity for Ghana to promote and trade in verified legal timber. Without the VPA, Ghana would be considered a high risk country and would continue to experience a reduction in the sales of its timber to the EU and other environmentally sensitive markets. Ghana's engagement in the VPA and its ability to put in place a legal assurance scheme (LAS) will lower the risk.

Concluding Remarks

The lack of interconnectivity with global financial markets resulted in delayed impacts of the global financial and economic crisis on Ghana. No targeted policy responses and other remedial measures were introduced for the wood products sector in Ghana. Government expenditure and the introduction of expansionary programmes through its national budget in 2008 provided the required stimulus for the Ghanaian economy. High prices for Ghana's main export products, namely, cocoa and gold, limited the impact of the crisis although it diminished the importance of timber in the Ghanaian economy.

Ghana experienced a 25 percent reduction in the value of wood and wood products exports in 2009. Domestic and regional markets provided the opportunity for mitigating the impact of the crisis. The timber industry in Ghana diversified its markets to the sub-region resulting in the ECOWAS region being Ghana's top importer of wood products in value terms in 2010. Domestic markets in the ECOWAS region offer tremendous opportunity, with growing construction industries and economies of countries in the sub-region.

Media attention and issues concerning the environment provided opportunities for the forest sector, particularly regarding forest certification. The period saw three firms obtain FSC certification for controlled wood/chain of custody certification.

Market intelligence availability remains a challenge although some of the interviewees, particularly from the public sector, reported the ITTO MNS as a reliable source of market information.

The period saw cancellations of contracts and reduction in export prices of timber and timber products. There were increases in freight rates and shippers sometimes experienced delayed shipments resulting in a perception that Ghanaian shippers were unreliable.

The crisis resulted in a credit freeze and the banks delayed the introduction of various products and services resulting in a reduced ability of the timber industry to continue their investments into plantations development and industry retooling.

Although the service sector, particularly the ICT, saw growth in the Ghanaian economy the timber sector has not effectively used ICT in its production and sales.

5.3 Producer case study - MALAYSIA

Background on the Malaysian Forestry and Wood Products Sector

The forests in Malaysia assume many important roles, one of which is to provide raw materials (logs) to the timber industry. The total land area in Malaysia is 32.9 million hectares, of which 17 million hectares (51.7 percent) were under natural and plantation forest cover in 2008. Sarawak has 8 million hectares under forest cover, Peninsular Malaysia has 4.7 million hectares and Sabah 4.3 million hectares. On the major types of forests, Malaysia had 14.9 million hectares of dry inland forests, 1.2 million hectares of swamp forests, 0.5 million hectares of mangrove forests, and 0.4 million hectares of forest plantations (Table 5.7).

Table 5.7: Malaysia - Distribution and extent of major forests types, 2008, (million hectares)

Region	Land Area	Natural Forest			Forest Plantation	Total Forested Land	Total Forested Land (%)
		Dry Inland Forest	Swamp Forest	Mangrove Forest			
Peninsular Malaysia	13.2	4.3	0.2	0.1	0.1	4.7	35.6
Sarawak	12.3	6.9	0.9	0.1	0.1	8.0	65.0
Sabah	7.4	3.7	0.1	0.3	0.2	4.3	58.1
Total	32.9	14.9	1.2	0.5	0.4	17	51.7

Source: FDPM, FDSH & FDSK

In 2009, there were 3,776 wood processing mills in operation in Malaysia. The majority of these mills were wooden furniture and wood working factories (Table 5.8).

Table 5.8: Malaysia – Number of timber processing mills, by type of operation, 2009.

Types of Mills	Peninsular Malaysia	Sabah	Sarawak	Total
Sawnwood	671	172	170	1,013
Plywood/Veneer/Blockwood	55	62	68	185
Wood Moulding	167	135	34	336
Chipboard	16	3	1	20
Wooden Furniture and Wood Working	1,298	60	410	1,768
Laminated Board	18	n/a	15	33
Builders' Carpentry and Joinery (BCJ)	24	n/a	3	27
Kiln Drying	132	65	48	245
Wood Preservation	82	31	n/a	113
MDF	10	2	3	15
Others	9	7	5	21
TOTAL	2,482	537	757	3,776

Source: FDPM, FDSK, FDSH, MTIB and STIDC

Apart from the plantation and construction industry, the Malaysian timber industry is one of the largest employers of foreign workers, particular for unskilled and semi-skilled workers at the factory

floor level. In 2008, the industry employed an estimated 174,242 foreign workers out of a total of 300,450 workers (Table 5.9), which was 58 percent of the total workforce in the industry.

Table 5.9: Malaysia - Employment in the Malaysian Timber Industry, 2005 and 2008 (Number of workers).

	2005			2008*		
Sub-Sector	**Local**	**Foreign**	**Total**	**Local**	**Foreign**	**Total**
Sawmilling and Wood Mouldings	28,753	9,649	38,402	39,661	17,474	57,086
Wooden and Rattan Furniture	34,611	33,351	67,962	48,440	62,727	111,167
Panel Products	22,396	48,919	71,315	22,784	85,378	108,162
Others, including BCJ	10,806	4,525	15,331	15,323	8,713	24,036
TOTAL	96,566	96,444	193,010	126,208	174,242	300,450
	50%	50%	100%	42%	58%	100%

**estimate only*

Source: DOSM

Impacts of the global economic crisis on the Malaysian tropical timber sector

Overview

Malaysia has a consistently high export to GDP ratio and the global economic crisis resulted in exports to its main markets in developed countries declining sharply. In 2007, Malaysia's GDP growth was 6.5 percent before sliding to 4.7 percent as the global economies began to plummet in 2008. By the end of 2009, Malaysia's GDP growth had contracted by 1.7 percent.

Exports and manufacturing production declined by 7.4 percent and 11.1 percent respectively, and private investment activities were further curtailed by poor business conditions in the first quarter of 2009. World trade declined sharply by 28.6 percent and subsequently, affected exports from Malaysia. Malaysia's gross exports declined by 20 percent during the first quarter of 2009 and 7.4 percent in the fourth quarter of 2009, which in turn resulted in further reductions in production, particularly in the manufacturing sector.

In response to declining exports and production activities, the private sector undertook measures to cut labour costs by freezing new hiring, initiating pay-cuts, reducing overtime work and laying off workers. Retrenchments climbed to 12,590 persons in the first quarter of 2009 alone, in comparison with a quarterly average of 3,873 persons during the 2005 to 2008 period, affecting mainly workers from the manufacturing sector. The unemployment rate increased to 4 percent in the first quarter of 2009 and 3.1 percent in the fourth quarter, according to Bank Negara Malaysia (BNM) statistics. However, analysts were of the opinion that the actual figure could have been much higher than published official statistics as most lay-offs took place in SMEs, which accounted for the bulk of contracted unskilled and semi-skilled workers.

Although household incomes remained relatively stable in the other sectors that were not directly exposed to export market conditions, nevertheless, their spending behaviour was affected by the weak local market sentiment as a result of overall weaker economic conditions and uncertainties

over income outlook and job security. This resulted in a marginal decline in private consumption spending by 0.7 percent.

Total investment also plummeted (-10.8 percent), following sharp contractions in private investment spending, as capacity expansion activities were affected by the considerable decline in exports, lower-than optimal capacity utilization and deteriorating business confidence. As a result, aggregate domestic demand declined by 2.9 percent and the economy contracted sharply by 6.2 percent in the first quarter 2009. A large inventory drawdown during the first quarter of 2009, particularly in the manufacturing and commodity sectors, further contributed to the decline in growth.

In addition, there was also a massive reversal in short-term capital flows, especially in mid-2008 as most of these funds were remitted back to the US by fund managers and investment banks. The sharp reversal of funds flows was, however, well absorbed by the domestic financial markets, given the sufficient liquidity in the financial system and the sound national banking system. The strong reserves position of the country had acted as a strong buffer for US dollar liquidity and foreign exchange rate fluctuations during the crisis.

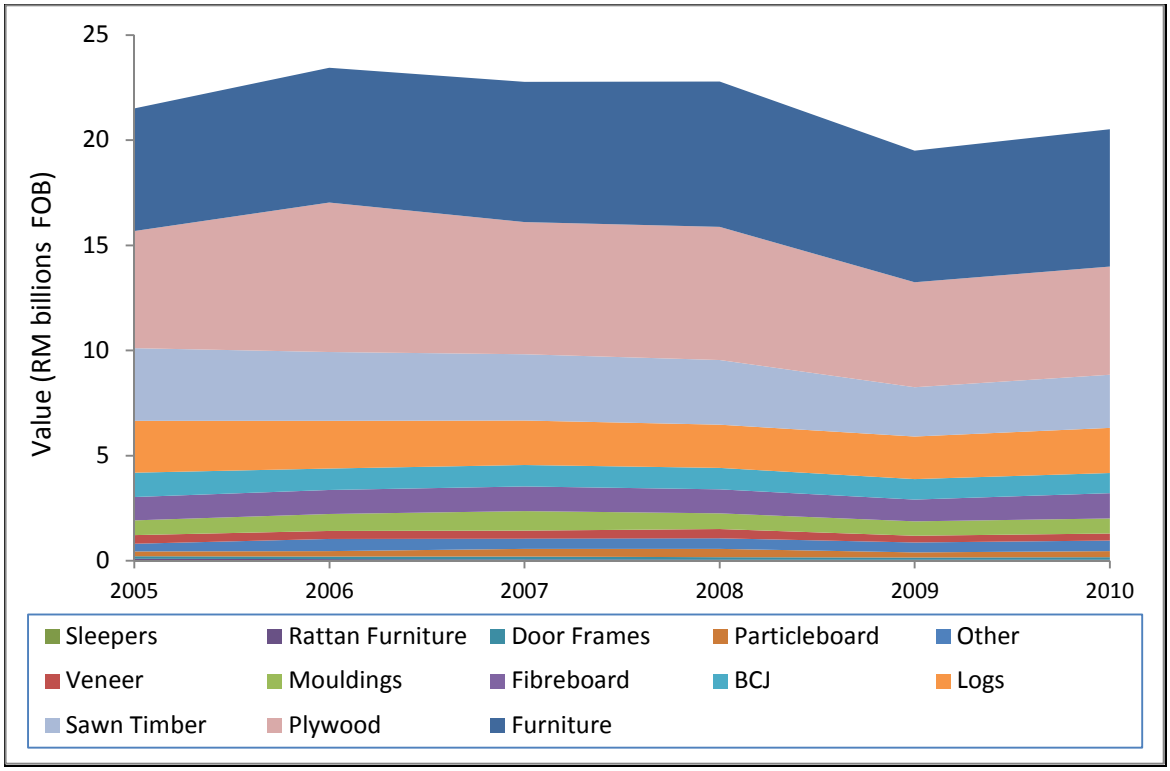
Moreover, the broad-based financial sector reforms and capacity building measures that were undertaken following the Asian financial crisis in the late 1990s had increased the financial sector's resilience to weather the global financial turmoil. The exposure of the domestic banking system to US subprime assets was likewise very much limited, as high risk, exotic investment instruments have been barred from Malaysian financial markets earlier.

The capitalisation level of the national banking system remained high, with a risk-weighted capital ratio of 14.7 percent at end-December 2009, while the net non-performing loan ratio was low at 1.8 percent (end-2008: 2.2 percent). The strong capitalisation and healthy liquidity in the banking system ensured that the intermediation function remained uninterrupted. This was reflected in the continued expansion of loans outstanding to businesses and households throughout 2009. Total business loans outstanding expanded by 2.6 percent in 2009 (end-2008: 13.2 percent) while household loans outstanding expanded at a sustained high rate of 9.8 percent as at end-2009 (end-2008: 9.7 percent).

Malaysian timber exporters and processors began to feel the ramifications of the global crisis in the third quarter of 2008 and first half of 2009. Exports of Malaysian timber products registered a decline of 14.5 percent year-on-year in 2009, the sharpest decline on record since 2006 (from RM22.79 billion to RM19.49 billion). Some of the timber sectors suffered a double-digit decline with sawnwood taking a drastic decline of 24 percent (from RM3.08 billion to RM2.34 billion); plywood 21.2 percent (from RM6.33 billion to RM4.99 billion); veneer 29.2 percent (from RM435 million to RM308 million); and medium density fibreboard (MDF) 11.2 percent (RM1.16 billion to RM1.03 billion). However, logs only registered a minor decline of 1.9 percent (from RM2.06 billion to RM2.02 billion, (Figure 5.16).

Prices of Malaysian timber products declined sharply as the global economy slowdown began to bite deeply into the industry. Timber merchants and timber products manufacturers alike rushed to reduce inventory by offering bulk discounts to buyers. Some timber merchants stated that many of them have not received any new orders from buyers beyond January 2009.

Figure 5.16. Malaysia – Exports of major timber products by value, 2005-2010



Source: MTIB; DOSM

Both timber products manufacturers and sawmillers faced the grim prospect of massive winding-up of businesses, with many fearing that 30 percent to 50 percent of small and medium-sized businesses may be forced to shut down by the end of March 2009. It was also feared that up to 70 percent of workers in the timber industry may be laid-off before end-2009.

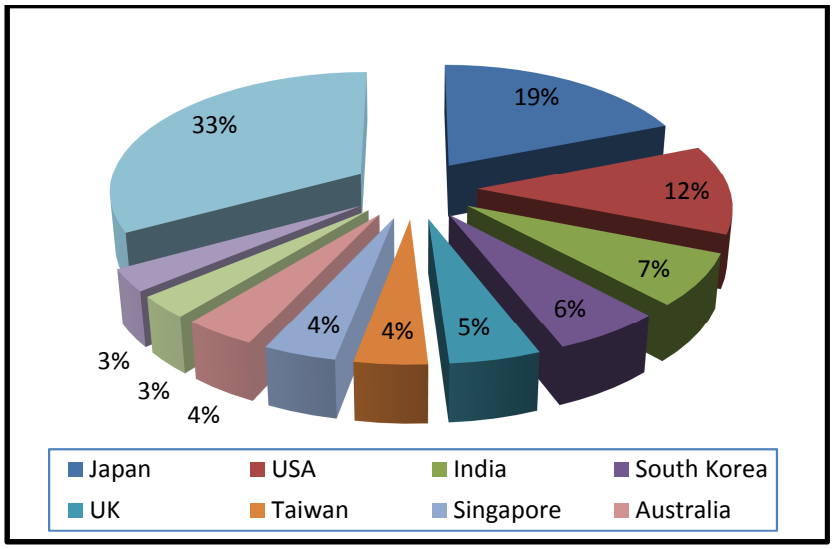
The economic slowdown in Japan caused plywood prices to decline sharply. A survey conducted by the Japanese firm, Teikoku Databank credit research agency, indicated that 26.9 percent of Japanese companies planned to cut jobs due to the economic downturn. Meanwhile, the recession in the USA brought the Malaysian furniture industry almost to a standstill. Manufacturers were dependent on existing Middle Eastern demand to keep their factories in operation for the next six months, until mid-2009.

European buyers of sawnwood were cancelling orders, with some opting to have their deposit forfeited rather than to take delivery of any additional stocks. A number of sawmills were expected to shut down permanently after the Chinese New Year towards the end of January 2009. A number of warehouses within Malaysia were seeing an increase in slow moving stockpiles of plywood and other panel-products.

Timber exporters were hopeful that cancellation of about 60 percent of timber contracts by the Democratic Republic of Congo in January 2009, aimed at arresting corruption in the timber trade, would create opportunities for Malaysian sawnwood suppliers. However, the EU market, one of the major destinations for exports from DRC, had declined, with the UK going into recession towards the end of 2008.

In terms of regional market share, in 2009 exports of Malaysian timber products to the EU declined by 21.4 percent; non-EU Europe 32.8 percent; Asia 14.5 percent; Australia and Oceania 11.3 percent; the Americas 8.2 percent; and Africa with a decline of 8.8 percent. Major importers of major Malaysian timber products in 2009 were Japan, the US, India, the UK, South Korea, Taiwan, Singapore, Australia, the UAE and China, (Figure 5.17).

Figure 5.17. Malaysia – Exports of timber products by major destination, by value, 2009.



Source: MTIB; DOSM

Imports of Malaysian wood products by Singapore, an entrepôt, were mostly for trans-shipment purposes or for re-shipment purposes after rebranding. Therefore, actual imports of Malaysian timber and timber products to consuming countries could be much higher than reflected in official export statistics. Nevertheless, the Malaysian timber industry was Malaysia's seventh largest export earner at 3.5 percent, which amounted to RM19.5 billion out of a total of RM553.3 billion, in 2009. Out of the RM19.5 billion in export earnings, the wooden furniture sector accounted for 32 percent; plywood 25.6 percent; sawnwood 12 percent; logs 10.4 percent; medium density fibreboard (MDF) 5.3 percent; builders' carpentry and joinery (BCJ) 5.1 percent; mouldings 3.5 percent; other timber products 3.2 percent; veneer 1.6 percent; and particleboard at 1.3 percent.

The Logging Sector

With the exports of logs banned in Peninsular Malaysia since 1985, Sarawak remains the main exporter of logs in Malaysia. Sarawak maintains a large degree of independence, not only in the administration of State political affairs but also in the operation of its industries, as part of the agreement in its union with the Federation of Malaysia, on September 16, 1963. Therefore, this section will not only cover the logging sector but will include the other sectors within the Sarawak timber industry.

The value of logs and timber products, exported by Sarawak for 2009 declined by 16.5 percent, from RM8 billion to RM6.7 billion (Table 5.10), as the global crisis took its toll on Sarawak's export of timber and timber products. In terms of export value, there was a decline across the board for most timber and timber products in 2009 compared with 2008, with the exception of logs, MDF,

woodchips, and other timber products. The three main export earners by value in 2009 were plywood, logs and sawnwood.

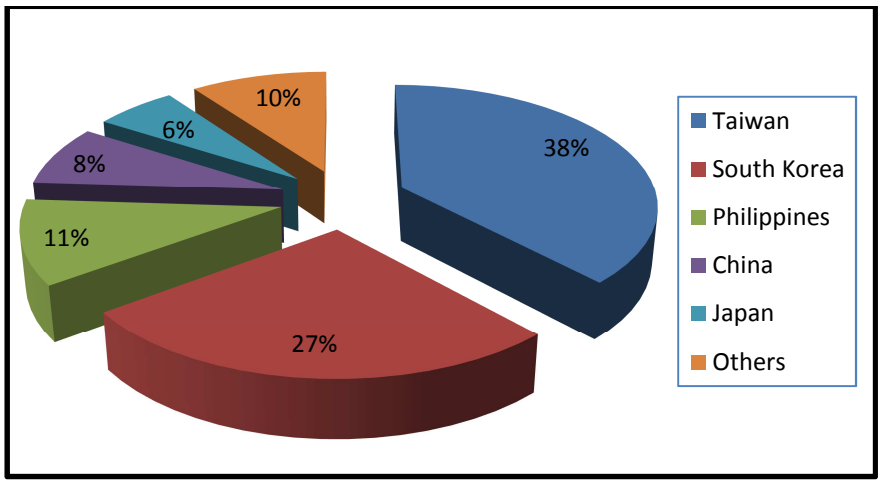
Table 5.10: Sarawak - Exports of wood products by volume and value, 2008 and 2009

Products	January – December 2008			January – December 2009			% Change 2009/2008	
	Volume (m^3)	FOB Value (RM'000)	Value %	Volume (m^3)	FOB Value (RM'000)	Value %	Volume	Value
Logs	3,496,539	1,706,981	21.32	3,790,045	1,799,945	26.91	8.39	5.45
Sawnwood	1,061,179	1,003,575	12.53	800,615	746,053	11.15	(24.55)	(25.67)
Plywood	3,199,942	4,433,696	55.36	2,663,645	3,370,636	50.40	(16.76)	(23.98)
Veneer	362,030	339,628	4.24	234,027	221,001	3.30	(35.36)	(34.93)
Dowels	3,339	10,415	0.13	2,364	7,547	0.11	(29.21)	(27.54)
Mouldings	9,905	24,009	0.30	10,484	21,887	0.33	5.84	(8.84)
Particleboard	110,071	53,336	0.67	50,647	23,157	0.35	(53.99)	(56.58)
MDF	181,915	212,561	2.65	198,457	233,095	3.49	9.09	9.66
Blockboard	16,566	16,639	0.21	11,431	10,053	0.15	(31.00)	(39.58)
Laminated board or flooring	13,057	35,290	0.44	7,448	19,560	0.29	(42.96)	(44.57)
Woodchips (tonne)	232,700	27,381	0.34	197,000	27,483	0.41	(15.34)	0.37
Others		144,464	1.80		207,857	3.11		43.88
Total		8,008,157	100.00		6,688,274	100.00		(16.48)

Source: STIDC

Exports of plywood from Sarawak declined 17 percent in 2009 year on year, from 3.2 million m^3 to 2.7 million m^3 in volume, and a decline of 24%, from RM 4.4 billion to RM 3.4 billion, in value for the same period. The main importing countries for plywood from Sarawak in 2009 were Taiwan, South Korea, the Philippines, China and Japan (Figure 5.18).

Figure 5.18. Sarawak – exports of plywood, by major destination, by value, 2009.

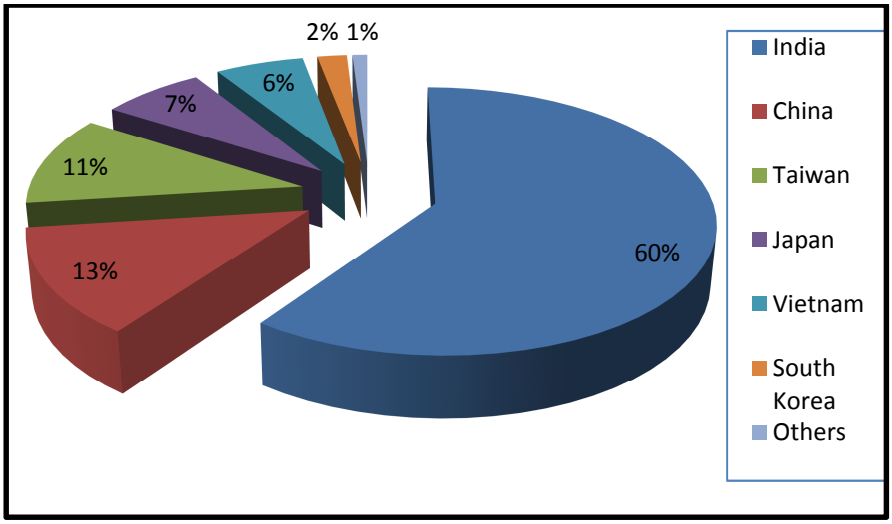


Source: STIDC

Export of logs by Sarawak increased in volume by 8.4 percent in 2009 year-on-year, from 3.5 million m^3 to 3.8 million m^3, and by 5.4 percent in value, from RM1.7 billion to RM1.8 billion over the same

period. The main importing countries in 2009 were India, China, Taiwan, Japan, Vietnam and South Korea (Figure 5.19).

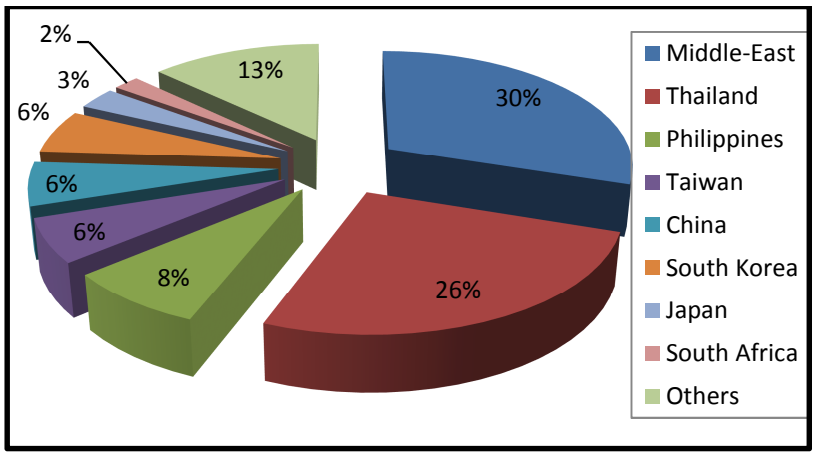
Figure 5.19. Sarawak – exports of logs by major destination, by value, 2009.



Source: STIDC

Sarawak exports of sawnwood declined 24.6 percent by volume in 2009, from 1.1 million m^3 to 800 615 m^3, and 25.7 percent by value from RM1 billion to RM746 053 over the same period. Middle Eastern countries were some of the major importing countries followed by Thailand, the Philippines, Taiwan, China, South Korea, Japan and South Africa (Figure 5.20).

Figure 5.20. Sarawak – exports of sawnwood by major destination, by value, 2009.



Source: STIDC

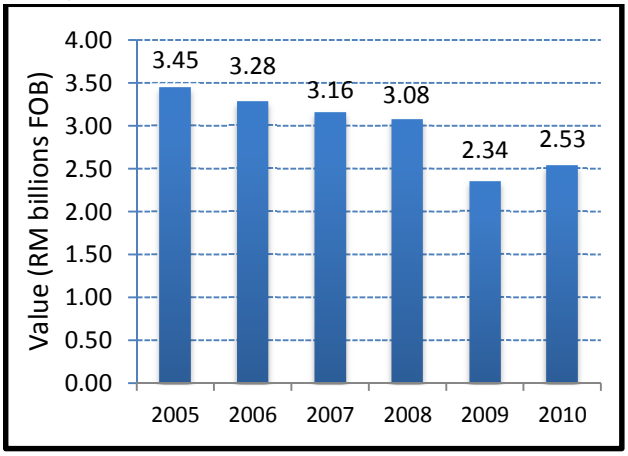
Sawnwood Sector

The total export FOB value of sawnwood fell 24 percent year-on-year in 2009, from RM3.08 billion to RM2.34 billion (Figure 5.21). The total export volume fell 23.4 percent over the same period, from 2.48 million m^3 to 1.90 million m^3 (Figure 5.22). Main importing countries for Malaysian sawnwood were Thailand, the Netherlands, China, Japan, UAE, Yemen, Singapore, South Africa, Taiwan and Germany (Figure 5.23).

Sawnwood exporters identified several sets of problems in the sawnwood sector during the crisis:

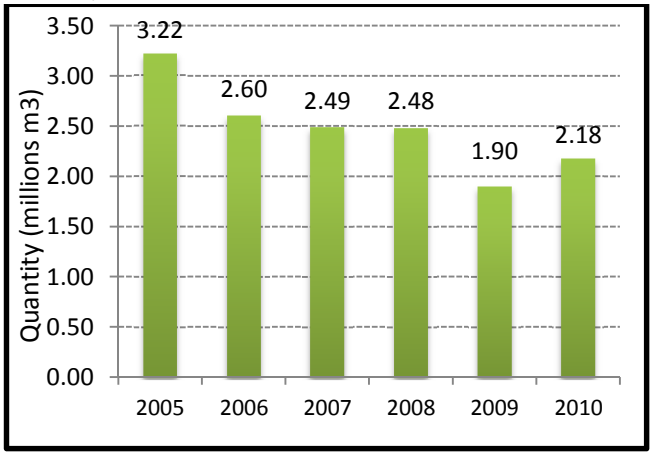
- Excessive quality claims on shipment by importers as well as cancellation of orders.
- Some kiln drying operators were reported to be operating at 50 percent capacity.
- Declines in sales volume by up to 50 percent to 70 percent.
- Retrenchment of important key staff.
- Many sawmills were reducing their production.
- Timber exporters were unable to obtain trade financing credits from financial institutions and cargo insurance from marine insurance companies respectively.

Figure 5.21. Malaysia – exports of sawn timber by value, 2005-2010



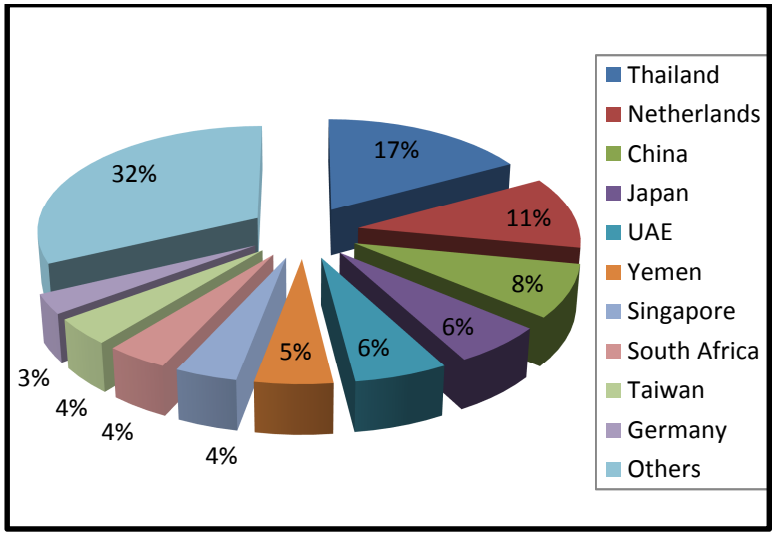
Source: MTIB; DOSM

Figure 5.22. Malaysia – exports of sawn timber by volume, 2005-2010



Source: MTIB; DOSM

Figure 5.23. Malaysia – exports of sawnwood by major destination, by value, 2009



Source: MTIB; DOSM

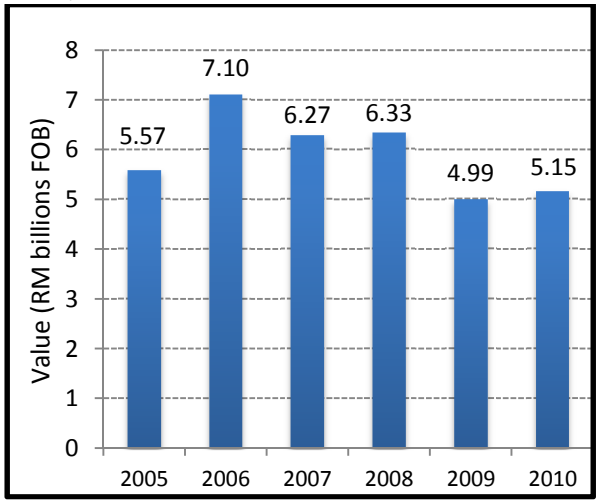
Plywood and panel products sector

The FOB export value of plywood plunged 21.2 percent in 2009 (Figure 5.24), whereas the quantity exported declined 16.7 percent over the same period (Figure 5.25). The main importing countries for

Malaysian plywood were Japan, South Korea, Taiwan, the UK, the US, Yemen, Egypt, Mexico, Hong Kong and Jordan (Figure 5.26).

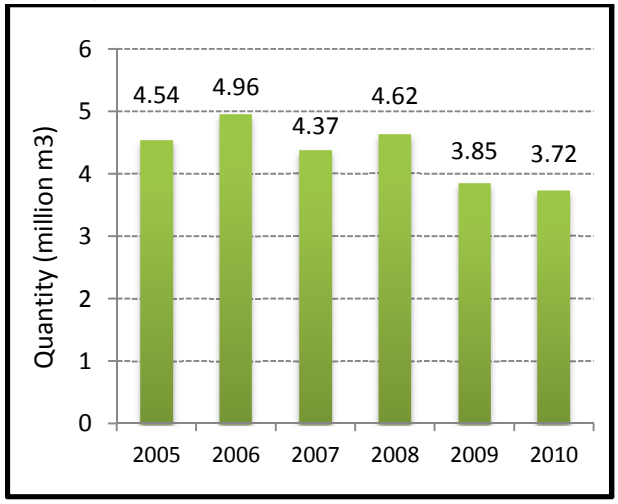
However, the Malaysian plywood industry remained resilient throughout much of the global economic crisis. One of the main reasons was that most of the 180 plywood mills in Malaysia have been in operation for 20 years or more. Therefore, depreciation on most fixed assets had already been written off. Plywood mill businesses did not have the added financial burden of servicing mortgage payments on property loans. Most capital expenditure, for example, for upgrading of machineries could be deferred until the economy picked up again. Secondly, under current laws and regulations, the incorporation of new plywood mills businesses is strictly forbidden. The only route to a plywood business ownership in Malaysia is via the purchase of an existing plywood business, which has restricted competition and reduced overcapacity.

Figure 5.24. Malaysia – exports of plywood, by value, 2005-2010



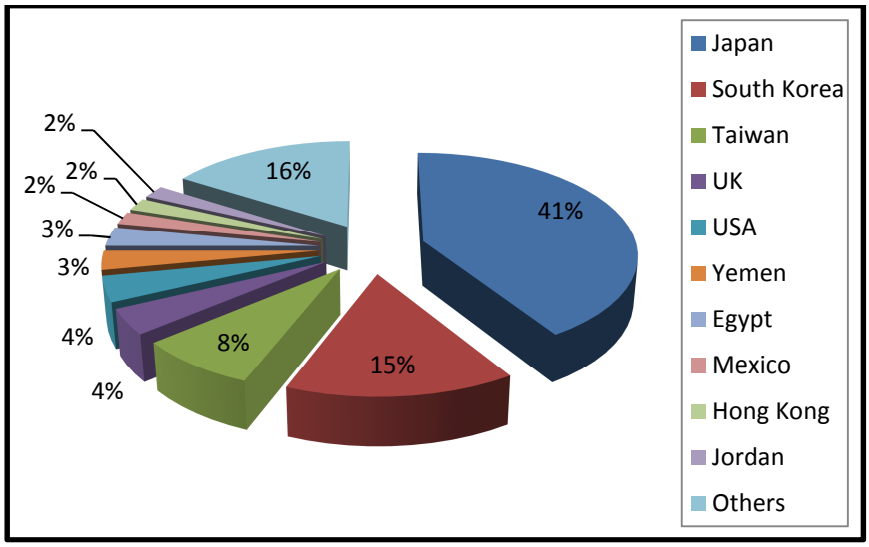
Source: MTIB & DOSM

Figure 5.25. Malaysia – exports of plywood by volume, 2005-2010



Source: MTIB & DOSM

Figure 5.26. Malaysia – exports of plywood by major destination, by value, 2009.



Source: MTIB; DOSM

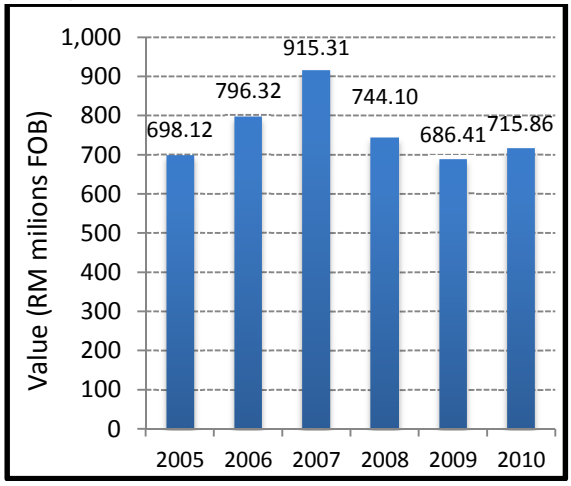
Thirdly, while exports to traditional markets were declining sharply during the crisis, there was an increase in exports to new importing countries which helped to cushion the shocks. Malaysia's plywood exports to Yemen and Jordan in 2009 posted positive growth in revenues of 75.3 percent and 15.6 percent respectively. Yemen, the sixth largest importer of Malaysian plywood, imported 123,408 m^3 of plywood, valued at RM152.3 million in 2009 to serve its housing and social development projects, and infrastructural projects. Jordan, the tenth largest importer of Malaysian plywood in 2009, imported 88,436 m^3 valued at RM114.2 million mainly for reconstruction in Iraq. Jordan acted as a conduit for Malaysian timber products entry into the war-torn Iraqi market. Meanwhile, Egypt the seventh largest importer of Malaysian plywood in 2009, imported 125,046 m^3 valued at RM150.4 million, a decline of 5.9 percent in volume, and 10.4 percent in value, respectively. The decline in Egyptian imports was due to the impact of the crisis on its local, export-oriented furniture industry, a major consumer of plywood.

Wood Mouldings and Joinery Sector

The crisis also affected the wood moulding and joinery industry. Exports of wood mouldings declined 7.8 percent by value and 11.2 percent by volume in 2009. (Figure 5.27 and 5.28). Major importing countries for wood mouldings in 2009 were the Netherlands, Japan, Australia, Germany, USA, South Korea, Italy, Belgium, Singapore and the UK (Figure 5.29).

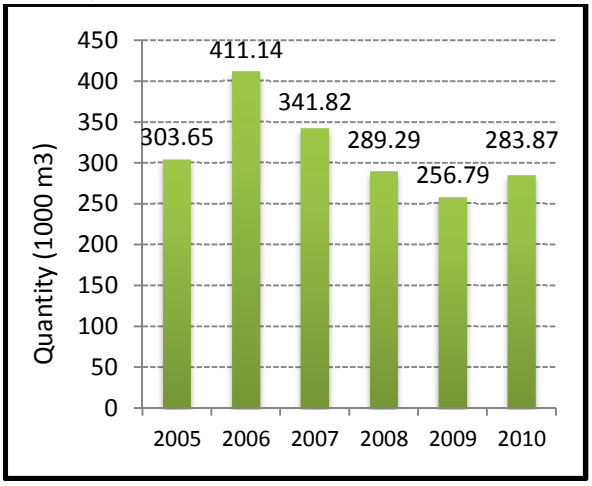
Exports of builders' carpentry and joinery (BCJ) declined 2 percent by value over the same period (Figure 5.30). Major importing countries for BCJ in 2009 were Japan, the UK, Singapore, USA, Australia, UAE, France, India, Belgium and Germany (Figure 5.31).

Figure 5.27. Malaysia – exports of mouldings by value, 2005-2010



Source: MTIB; DOSM

Figure 5.28. Malaysia – exports of mouldings by volume, 2005-2010

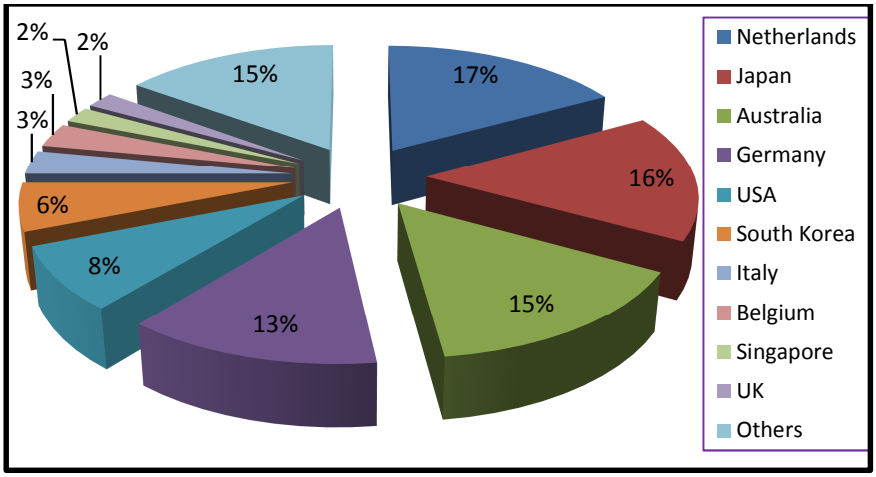


Source: MTIB; DOSM

Problems identified by the wooden mouldings and joinery industry during the crisis included:

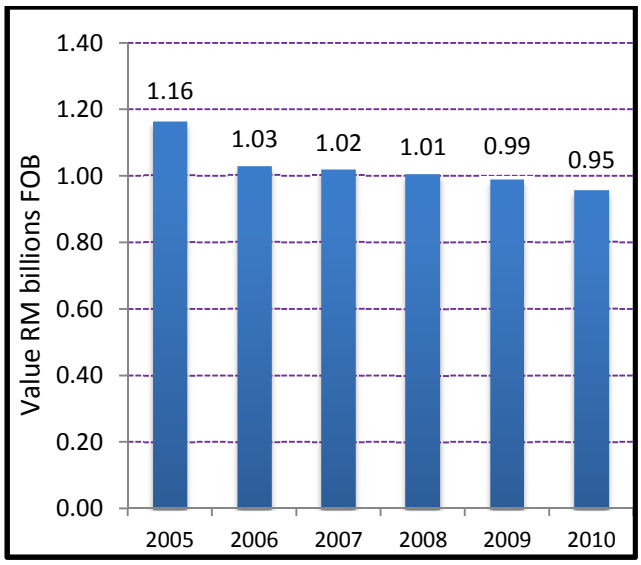
- high and excessive increase in freight and shipping charges;
- higher cost of production;
- competition from lower cost producers;
- shortage of raw materials; and
- demand for certified timber products by importers and consumers.

Figure 5.29. Malaysia – exports of mouldings by major destination, by value, 2009.



Source: MTIB; DOSM

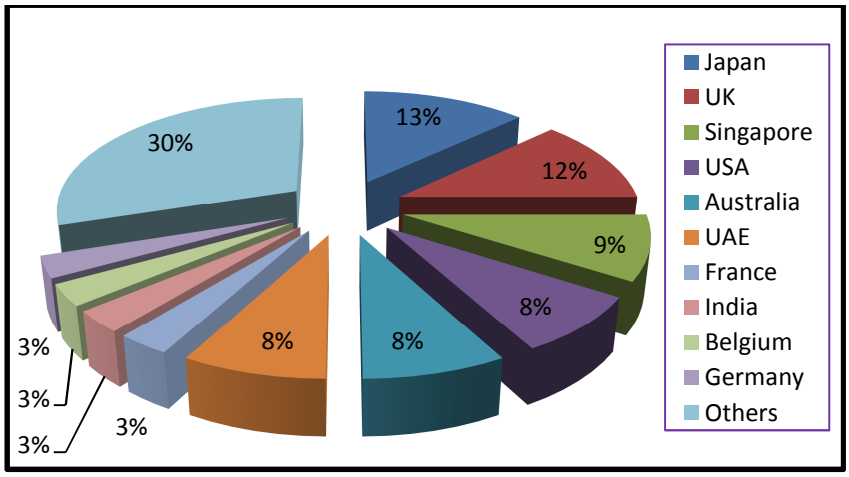
Figure 5.30. Malaysia – exports of builders' carpentry and joinery, by value, 2005-2010.



Source: MTIB; DOSM

While freight and shipping charges were relatively stable during the height of the crisis, price increases in freight and shipping charges and political conflict in the Middle East in the second half of 2009 dampened the recovery. Malaysia is the last port of call for most shipping companies operating in the region, with exporters competing for available space on board at an excessive price. In addition, during the peak season from September to November every year, most spaces on board shipping vessels are booked in advance by Chinese companies shipping products to North America and Europe for the Christmas shopping season. As most shipping companies operating in the Southeast Asia region are foreign owned, price increase in freight and shipping charges are outside the control of the Malaysian private sector. Therefore, at best, the MWMJC could only advise its members not to take up any long-term positions (bookings) with any shipping lines as this would not only subject them to higher cost but also expose them to foreign exchange risk as freight and shipping charges are quoted in US dollars.

Figure 5.31. Malaysia – exports of builders' carpentry and joinery, by major destination, by value, 2009.



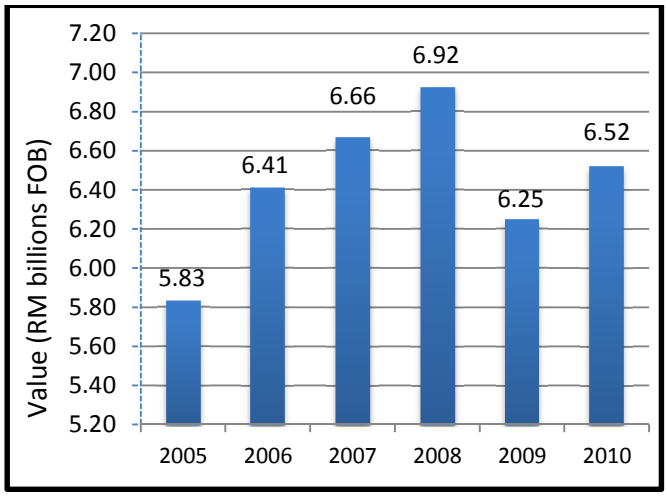
Source: MTIB; DOSM

The major markets for Malaysian wood mouldings are in the USA and Europe, namely the Netherlands, the UK, Germany, Italy, Belgium and France. For BCJ, Australia is a major export destination. These markets had slowed as a result of the crisis. US consumers were demanding quality products at a lower price. As a result, Malaysian wood mouldings and BCJ in the US have been largely replaced by similar products from South America. On average, Malaysian wood mouldings & BCJ cost 20 percent more than the equivalent from South America (usually manufactured from radiata pine from Chile) due to lower labour and material cost in South America, as well as, shorter shipping routes from South America to the USA.

Wooden Furniture

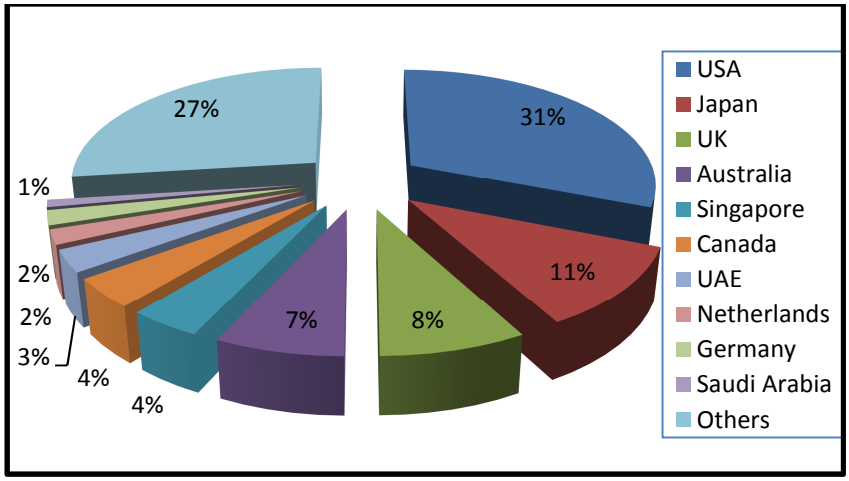
Exports of Malaysian wooden furniture declined 9.7 percent in 2009 (Figure 5.32). Major importing countries for Malaysian wooden furniture in 2009 were the US, Japan, the UK, Australia, Singapore, Canada, UAE, the Netherlands, Germany and Saudi Arabia (Figure 5.33).

Fig. 5.32. Malaysia – exports of wooden furniture by value, 2005 - 2010



Source: MTIB; DOSM

Fig. 5.33: Export of Wooden Furniture by Malaysia to Major Destinations by Value 2009



Source: MTIB; DOSM

Malaysia's consumption of furniture (wooden and non-wooden) also decreased, with imports declining 24.7 percent. While the major export markets were still the US, Japan, United Kingdom, Australia and Singapore, only Japan and the UK increased their imports in 2009. Australia's imports declined significantly, to RM428 million while the UAE dropped from fifth place in 2008 to seventh place in 2009 as the country battled the sudden collapse of its real estate market and the repatriation of its large expatriate workforce.

Marketing

The Malaysian Timber Council (MTC) identified four specific problems that had an immediate impact on the Malaysian timber industry as a result of the global financial economic crises:

- Cancellation of orders by importers, in particularly for sawnwood. Importers would rather suffer the loss of any deposit or advanced payment made than to take full delivery of orders. Cancellations of orders also exposed Malaysian timber producers to high inventory cost and other overheads, e.g. warehouse rental.
- Requests by importers for postponement of shipments. These postponements subjected Malaysian timber exporters to foreign exchange risks and uncertainty in freight and shipping rates.
- An increase in claims that products did not meet quality specifications, and related disputes, initiated by importers of Malaysian timber products.
- Cancellation and withdrawal of banking and trade credit facilities by local financial institutions to Malaysian timber companies due to the perception that the Malaysian timber industry is a sunset industry as well as a high risk industry. A number of cancellations of banking and trade credit facilities were given within a month's notice. As a result, timber companies, especially SMEs, were unable to obtain insurance coverage for their properties and business operations.

Problem areas that had existed before the crisis included:

- Shortage of raw material, in particular logs, for downstream timber product processors.

- High shipping and freight charges especially to European ports. Freight charges were being revised upwards, almost every 2 to 3 months, just as the timber industry was beginning to recover towards the second half of 2009 and early 2010.

Conservation

NGO concerns regarding the impacts of the crisis on Malaysian forests and the environment are as follows:

- Forest cover in Malaysia had deteriorated prior to the crisis with infringement into forest reserves by the expansion of oil palm and commercial forest plantations.
- There are doubts concerning the credibility of timber certification as linkages for conservation are less than satisfactory. However, the need for the FLEGT VPA to be implemented may introduce better governance and management of forest management units (FMUs) not only within Peninsular Malaysia but also in Sarawak and Sabah.
- There are concerns regarding the enforcement of regulations governing afforestation and replanting of oil palm plantations which is damaging the credibility of certification and the image of the Malaysian timber industry.

Remedial measures and their effectiveness

The Public Sector

In response to the global economic crisis, the Government of Malaysia introduced several policy measures to mitigate the adverse impacts of the global downturn, and to prevent the Malaysian economy from slipping into recession. These measures focused around three broad areas, namely, fiscal policy (two stimulus packages amounting to RM67 billion, or 9.9 percent of GDP), monetary easing (the Overnight Policy Rate was reduced by a total of 150 basis points to 2.00%) and reinforcement by several comprehensive measures to ensure continued access to finance.

Two economic stimulus packages were introduced in early 2009, and 2009/2010. In both economic stimulus packages, there was no direct allocation for the Malaysian timber industry. However, the local construction industry received assistance and activity picked up in mid-2009 which assisted the domestic timber industry to reduce inventories and remain in operation. In the construction sector, growth was generated by the continued implementation of projects under both the 9th Malaysia Plan and those under the stimulus packages. There was also a 15.6 percent increase in the federal government development expenditure, partly due to the upgrading of existing infrastructure.

No statistics were collected at federal or state government level for comparison of the levels of inventories maintained by Malaysian timber producers before the onset of the global crisis and during the crisis. It is therefore difficult to gauge the effectiveness of the economic stimulus packages in absorbing the excess inventories of timber and timber products, and their role in easing cash-flow of timber companies.

Growth in non-residential construction was robust, driven mainly by stimulus spending on the upgrading, repairing and maintenance of public buildings, as well as the on-going construction of commercial buildings. Commercial rental rates slowed but remained stable during the year as new tenancies declined with many small and businesses undergoing liquidation. Regarding retail space,

fewer shopping malls were constructed nationwide in 2009, following a glut in supply of large shopping malls that became available during the 2007-2008 property boom.

Residential rental rates which had been driven upwards due to property speculation, remained stable in prime residential centres, but softened slightly in other areas. The occupancy rate of residential rental housing hovered around 82 percent as job security fears began to bite in the private sector. Performance in the residential real estate segment was relatively mixed during 2009 with demand weakening in early 2009 due to uncertainty about the global and domestic economic outlook. Demand for new housing units only started picking up in mid-2009 as developers introduced attractive mortgage financing packages, while borrowing costs were lowered. Public sector construction of low- and medium-cost houses increased, as stipulated under the economic stimulus packages.

In 2009, the volume of residential property transactions contracted by 2.3 percent, while the value of property transactions rose by 1.3 percent, reflecting the overall cautious sentiments of real estate developers. Meanwhile, housing starts declined by 15.8 percent.

The implementation of the two economic stimulus packages provided much needed direct support to domestic business activities and improved business and consumer confidence. Domestic demand declined by 2.2 percent in the second quarter 2009 but recovered to register positive growth of 1.7 percent in the second half 2009. Private consumption also recovered, growing 0.5 percent in the second quarter 2009, before strengthening further to 1.7 percent in the fourth quarter 2009.

Stabilization and subsequent gradual recovery in the global economy by mid-2009 provided further support to the Malaysian economy. Strong recovery in the regional economies, particular in China, benefited Malaysia, with exports picking up in the second half 2009. For example, Malaysia's exports to China turned around to record positive annual growth rates as early as August 2009. The recovery in exports became more broad-based towards the end of the year, as exports to several advanced economies began to recover as well. Exports contributed positively to growth by the fourth quarter 2009.

The Malaysian National Timber Industry Policy (NATIP) 2009 to 2020 was launched on February 17 2009, with the Malaysian Timber Industry Board (MTIB) as key implementer. While the NATIP was initiated 3 years prior to the global downturn by the Malaysian Ministry of Plantation Industries and Commodities, it has been regarded as a timely blueprint that will help the industry to re-strategize and to ensure that the Malaysian timber industry remains sustainable up to year 2020. The policy directions presented in NATIP are concerned with the long-term development of the Malaysian timber industry. They were set out as a course of actions designed specifically for the industry to maintain and enhance its competitive edge in the global marketplace. By the end of the NATIP implementation period in 2020, annual exports of timber and timber products are targeted to reach RM53 billion, which is about double the present export values.

The NATIP contains seven strategic areas that will be instrumental for stimulating growth in the timber industry, namely: industry structure (including sustainable raw material supply); innovation and technology; marketing and promotion; human capital development; funding and incentives; and Bumiputera (indigenous people) participation.

The Marketing Sector

Brainstorming sessions and dialogues

The Malaysian Timber Council (MTC) initiated and conducted a survey between December 2008 and January 2009 to gauge the severity of the impact of the global financial and economic crises on the Malaysian timber industry across the supply chain. This engaged MTC with the local timber industry, provided information on the effects of the crisis on the timber industry and enabled MTC to plan to plan a comprehensive course of action. As a result of the survey, a number of brainstorming sessions and dialogues were held with a number of stakeholders.

Continual access to banking and trade credit financing facilities was of crucial importance to the Malaysian timber industry. MTC worked in tandem with the various timber trade associations to maintain a dialogue with the banking industry.

Participation in trade shows and exhibitions

With an increase in cancellation of orders and request for postponement of shipments in traditional markets, e.g. within the EU, MTC and members of the timber trade associations initiated participation in fourteen trade shows and exhibitions in new emerging markets, in their search for new markets for Malaysian timber products:

Market intelligence and information gathering

As the crisis began to deepen, the requirement for market intelligence became more intense. To ensure that Malaysian timber companies remained competitive and well positioned in the international marketplace, MTC led more visits to international trade fairs via its branch offices in Dubai, London and Shanghai, for market intelligence gathering on information such as new product designs and development, market trends and consumer preferences. Information gathered were consolidated and analysed before they were disseminated and distributed to the various Malaysian timber trade associations and timber product manufacturers. This included debriefing sessions for members of the timber industry who were unable to participate in any of the trade missions or trade exhibitions. This ensured that market intelligence and other relevant information were disseminated fairly to all players in the timber industry.

Augmenting the raw material supply

Shortage of raw material supply has been a persistent problem for the timber industry in Peninsular Malaysia with an increasing number of natural forests being set aside for conservation and protection in accordance to the National Timber Industry Policy 2009 to 2020. The main source of raw material supply for the timber industry is derived from federal and state owned natural forests, and rubber tree and other forest plantations. The reduction of the annual coupe area from 272,870 ha. (8^{th} Malaysia Plan 2001 to 2005), to 266,955 ha. (9^{th} Malaysia Plan 2006 to 2010), was one of the main contributory factors to the shortage of raw material supply (Table 5.11).

Log production, which is based on the annual coupe area allocated and the net production figure for the respective harvesting cycle for the inland forests, mangrove and peat swamp forests, declined almost annually in Malaysia (Table 5.12).

Table 5.11: Malaysia - annual coupe area (ha.) under 8th and 9th Malaysia Plans

Region	8th. Malaysia Plan (2001 to 2005)	9th. Malaysia Plan (2006 to 2010)
Sarawak	170,000	170,000
Sabah	60,000	60,000
Peninsular Malaysia	42,870	36,955
Malaysia	272,870	266, 955

Source: FDPM, FDSH & FDSK

Table 5.12: Log production(millions m^3) from natural forests 2006 to 2009

Year	Sarawak	Sabah	Peninsular Malaysia	Malaysia
2006	11.9	5.3	4.7	21.9
2007	11.9	5.9	4.2	22.0
2008	11.9	4.9	3.9	20.7
2009	10.3	4.3	3.7	18.3

Source: FDPM, FDSH & FDSK

In addition, timber processors in Peninsular Malaysia have been unable to compete for logs from Sarawak, East Malaysia as these logs are sold in the open international market and there are no existing laws or regulations that would oblige Sarawak-based logging companies to offer logs to Malaysian timber product companies at a reduced price or via a certain quota. Timber processors were also unable to purchase logs from a number of traditional log exporters. However, it must be noted that log production also fell due to the decline in demand as a result of the crisis towards the end of 2008 and early 2009.

The shortage of raw material for the timber industry in Peninsular Malaysia was further complicated by an increase in the number of plywood or veneer mills operating in Peninsular Malaysia (Table 5.13) which were mostly acquired through acquisition of dormant plywood and veneer entities by existing timber companies. This created more competition for a declining log supply.

Table 5.13: Number of Mills in Malaysia in 2000 and 2008

Type	State	2000	2008
Sawmills	Sarawak	244	180
	Sabah	215	175
	Peninsular Malaysia	667	667
	Total	1,126	1,022
Plywood / Veneer Mills	Sarawak	53	54
	Sabah	80	63
	Peninsular Malaysia	50	63
	Total	183	180
Total Sawmills plus Plywood/ Veneer mils		1,309	1,202

Source: FDPM, STIDC, FDSK & FDSH.

The MTC Global WoodMart (MGW) was launched in 2010 and was viewed as a cost-effective one-stop selling, buying and networking platform for timber products from Malaysia and other countries. MGW 2010 was also the first of its kind in Southeast Asia. MTC also conducted raw material sourcing missions and visits to Canada, Indonesia, Laos, Myanmar, Vietnam, and the state of Sabah in East Malaysia. The MTC Raw Material Import Assistance Programme was also initiated in 2010 to enable local timber companies to source and import raw materials for further downstream processing within Peninsular Malaysia, in addition to providing technical and logistics services, and some cost reimbursement. Under the programme, timber companies may apply for up to a maximum of 1,000 m^3 of raw material imported to enjoy a maximum cost disbursement of RM40/m^3 to offset against charges incurred for transportation (sea and overland), terminal, handling and forwarding.

In 2009 alone, through MTC's Import Assistance Programme, 38 Malaysian timber companies imported a total of 28,746 m^3 of sawnwood and other timber products from the state of Sabah and from countries such as Australia, Canada, Chile, China, Denmark, Indonesia, Thailand and the USA.

The Sawnwood Sector

Although the Timber Exporters' Association of Malaysia (TEAM) appealed to the federal government to implement a number of measures and programmes to mitigate the negative effects of the global economic crises, the only measure implemented was the launching of more housing and construction projects that would encourage the greater utilization of local timber, as part of the first national economic stimulus package.

TEAM and the Malaysian Timber Industry Board (MTIB) mounted a mission to Europe in 2009 to iron out on-going trade disputes between Malaysian timber exporters and importers in the Netherlands and the UK, although many disputes were left unresolved as many EU-based timber importers were liquidated within the year.

The Plywood and Panel-Product Sector

The most pressing problem for the Malaysian plywood industry apart from the negative global economic climate was the availability of logs for peeling. Prices for logs, particularly from Sarawak were too competitive for plywood mills operating in Peninsular Malaysia. Some plywood mills were not able to compete with bulk buyers from India and China. To date, India is currently the largest buyer of logs from Sarawak, accounting for 55 percent of all logs exported by Malaysia in 2009, followed by China at 15 percent for the same period.

The utilization of oil palm trees (OPT) from existing oil palm plantations is being considered as an alternative to logs to remove significant pressure on the reliance on logs as raw material supply although there are concerns about pricing of its end product, with buyers arguing that plywood derived from OPT should be classified as bio-composite material.

The Wood Moulding and Joinery Sector

The Malaysian Wood Moulding and Joinery Council (MWMJC) together with MTC explored new emerging markets where freight and shipping charges and other costs could give Malaysian wood mouldings and BCJ, an advantage over South American products. As a result, Malaysian wood mouldings and BCJ began to be exported to Middle East and South Asian markets. Exports of BCJ to UAE and India increased by 84 percent and 26 percent respectively in 2009. BCJ products such as flooring and doors were imported for furnishing and fittings to complete building projects in the

UAE. The growth of the Indian middle class and booming real estate development saw India importing more BCJ products for its building construction sector.

In order to remain competitive in the midst of the crisis, Malaysian wood mouldings and BCJ manufacturers began to initiate and enforce a higher level of quality control into their manufacturing processes. More points for quality inspection were set up on the factory floor. More regular inspections and calibrations of machineries were also conducted to ensure greater precision in the cutting and machining of mouldings and BCJ products. On the supply chain side, greater care was taken to select raw materials with lesser defects. As a result, greater customer satisfaction with existing importers had led to repeat orders for a number of manufacturers.

To resolve the persistent shortage of raw materials among manufacturers, collaborative efforts have been made with the Forest Research Institute of Malaysia (FRIM). FRIM had established a research programme to study working properties of lesser used species as well as several foreign species that could be substituted for local species.

The demand for certified wood mouldings and BCJ presented difficulties for manufacturers because of their limited supply and limited price premiums for them as the crisis drove prices of timber products down across the board. In terms of supply, only two wood moulding and BCJ manufacturers have been certified in Malaysia, although they have been having problems in sourcing certified raw materials. Moreover, the demand for certified wood mouldings during the crisis was marginal. According to the Malaysian Timber Certification Council, only a total of 6,277 m^3 of Malaysian Timber Certification Scheme (MTCS) certified wood mouldings were exported in 2009.

The Wooden Furniture Sector

To address and to mitigate the decline in Malaysian furniture exports, the Malaysian Furniture Promotion Council (MFPC) embarked on a business strategy with four courses of action in the areas of market promotion and development, design enhancement, market intelligence and information gathering and dissemination, and policy development. Specific actions included: conducting market promotion campaigns in export markets, improving furniture design and branding; and seminars to update and provide the furniture industry with the latest market intelligence and information.

The Logging Sector and Sarawak Timber Industry

To address the problems posed by the crisis on the timber industry in Sarawak, the Sarawak Timber Industry Development Corporation (STIDC) implemented several measures as early as in 2008 and in 2009, to ensure that the fallouts of the crises were curtailed as much and as early as possible. One of these measures was to scale back the enforcement of its rules on timber quota during the first half of 2009 as a means to help timber exporters to weather the global recession. The standard royalty for timber was reduced from RM65 to RM50/m^3 for January to December 2009. The payment period for timber royalties was also extended from 2 weeks to 3 months in order to help timber exporters ease their cash-flow.

Other measures included human capital development by offering training courses in furniture making, wood carving, timber grading (MGR), log grading (SLGR), wood quality enhancement, basic kiln drying, making of the jig and training the trainer. STIDC also collaborated with other training providers both in the public and private sector to provide non-timber industry related courses to develop knowledge workers for the Sarawak timber industry.

To integrate and synergize its supply chain, STIDC launched its RM4.5 million wide area network (WAN) project – ForestNet and the state-of-the-art log tracking system (LoTS) on January 12, 2009. As well as producing data on a real-time basis for verification on the legality of the source of harvested timber, both the ForestNet and LoTS are also aimed at reducing paperwork and bottlenecks in the supply-chain for timber exporters and processors, thus reducing overheads and easing further cash-flow.

Research and Development

FRIM is the lead research institute for timber and timber products research in Malaysia, from raw materials to its final end product and provides R&D support to the Malaysian timber industry.

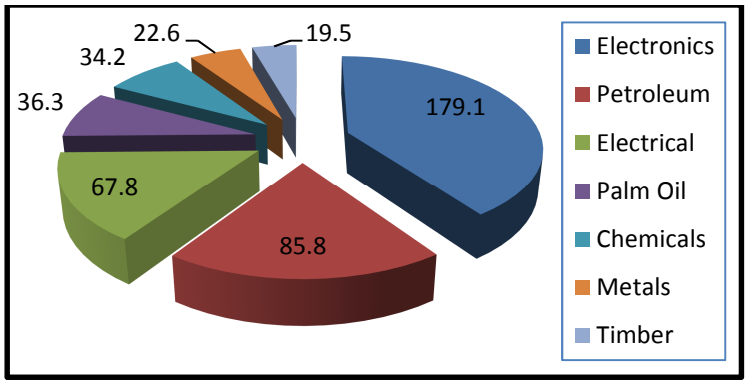
Three areas of research and development work were considered to have assisted the Malaysian timber industry in overcoming the many challenges confronting the industry during the global crisis, often with funding provided by MTIB or MTC. These projects assisted the Malaysian timber industry in maintaining competitiveness during the global economic downturn. These included: efficiency in drying methodologies for Malaysian hardwoods to extend their end uses; processing and utilization of bio-resources from sources such as oil palm biomass as alternative raw materials for the timber industry; and wood products quality testing for imported hardwoods and softwoods.

Although a number of companies in the private sector had sought the assistance of FRIM in product development and testing, R&D support had diminished as a result of the global downturn's effects on corporate budgets, and because some companies considered that research and development for the industry should be funded by the export levy paid by the timber industry.

Mitigation of risks

While Malaysia is often classified as a developing country, it has a very broad manufacturing and processing base, where its main exports are electronics, semi-conductors, electronic components, electrical goods, chemicals, chemical products, crude oil, condensates and LNG. Palm oil and natural rubber products are the leading agricultural products.

Fig. 5.34: Malaysia - Gross exports by major product, 2009 (RM in billion)



Source: BNM; MITI; DOSM

Although exports of timber and timber products were the seventh largest export (Figure 5.34), financial institutions considered the industry to be unsustainable and a sunset industry. During the crisis, the timber industry was regarded unfavourably by the banking sector, with trade credit

facilities and banking facilities for timber enterprises being withdrawn by financial institutions on short notice.

Malaysia has a long history of dependency on exports for growth. It is also a preferred destination for offshore manufacturing by a large number of multinational companies such as Intel, Hewlett Packard, Glaxo, Philips, Panasonic, Nestle, Dell and Exxon-Mobil. As such, any contractions in the economy of major importing countries or regions will have an immediate and direct impact on the Malaysian economy.

The per capital income of Malaysia stood at RM23,381 (US$6,634) in 2009, which meant that the Malaysian internal economy would not be able to generate the consumption levels required to absorb or mitigate the impacts of the global crisis, due to the low purchasing power of its population. Therefore, any shortfall in exports to traditional markets must be met by exploring new emerging markets elsewhere. This makes Malaysia a relatively high-risk country in the sense that it can neither absorb the bulk of its own production nor wind down production without causing widespread unemployment.

There have been inadequacies within the supply chain of the Malaysian timber industry that have been detrimental to the industry. Firstly, there is a vast disparity in the transportation methods between Peninsular Malaysia and East Malaysia (Sabah and Sarawak). Peninsular Malaysia has efficient transportation systems and infrastructures. Transportation of logs and other raw materials in East Malaysia is still very dependent on floatation of logs downstream along rivers and other waterways.

Malaysian timber exporters are highly dependent on foreign shipping lines for cargo freight to major destinations. Malaysia is also the last port of call for most shipping lines. The competition for cargo space on board vessels escalates the shipping cost of timber and timber products. There are very few Malaysian owned shipping lines, most of which are operators of very large crude carriers (VLCCs) and LNG/LPG tankers for the energy industry.

Raw material supply continues to plague the timber industry in Peninsular Malaysia. While alternative materials have been developed, logistics and slow adaptation remain an issue to iron out. The current importation of logs and timber products from other countries is only meeting about 30 percent of the requirement of the timber industry in Peninsular Malaysia.

Most timber businesses in Malaysia are SMEs and are unable to attract any inflow of foreign direct investments (FDI) into the industry. The exception is a handful of public listed companies (plc) such as Ta Ann Berhad and Cahya Mata Sarawak Berhad. Foreign investments into these companies are usually short-term to mid-term, in the form of stocks and bonds. Therefore, long-term FDIs into research and product development are needed in Malaysia. This is even more pressing in an adverse global economic climate.

Malaysia is also facing an acute “brain drain” with 140,000 Malaysians leaving the country in 2007 alone. Between 2008 and 2009, 305,000 Malaysians had emigrated to other countries. Most of these were young and middle-aged professionals, reducing the availability of knowledge workers for any industry, including the timber industry in Malaysia.

While the MTC have conducted brainstorming sessions with the industry to determine strategies to assist the timber industry, there have been no surveys to monitor the state of health of the timber industry especially in the area of human resources. As such, it is not known how many skilled or unskilled workers have been laid-off by the industry.

The magnitude of the crisis made it impossible for the Federal government to respond to the need of the timber industry directly. The two economic stimulus packages were implemented with the view that the benefits would flow on to other sectors. Nevertheless, several factors favoured Malaysia's competitiveness during the global economic downturn. While timber industries in developing countries are often very fragmented, the timber industry in Malaysia is highly organized and dynamic, with good corporate leadership. The Malaysian Timber Council (MTC), for example, serves as a meeting point for both the public and private sector and has a very highly aggressive and unified marketing and promotional programme for the timber industry in both Peninsular Malaysia and East Malaysia. The Malaysian timber industry is supported by a highly competent research organization - FRIM – which supports innovation in the sector. This organisational structure with its high level of support services and organisations, serves as a useful example for other developing countries with less functional organizational structure within the timber industry.

5.4 Producer case studies - CONCLUSIONS

To conclude, the forestry sectors in all three case study countries were impacted by the global downturn, and although their risk profiles were somewhat different, some common elements have emerged in terms of how tropical timber industries can minimise impacts and become more competitive during severe economic downturns. These include the need to:

- develop market intelligence capabilities in the tropical forestry sector through better cooperation between private sector, government and international organisations;
- invest in in development of new products and geographical market opportunities , including domestic and regional markets;
- continuously make gains in productivity to reduce costs and maintain competitiveness, and to identify and exploit sources of competitive advantage;
- focus on value-added and innovative products which are less affected by global economic downturns;
- strengthen industry and trade associations and the marketing and promotional support organisations which are crucial for implementing policies to ensure export competitiveness during downturns;
- include external demand crisis action plans in long-term strategic planning processes for the forestry sector;
- strengthen the capabilities of SMEs in the forestry sector to manage and overcome demand crises.

6 SUCCESS STRATEGIES FROM OTHER SECTORS

Introduction

The global economic downturn has created challenges for forest and wood processing industries worldwide but it has also created opportunities for those sectors that have taken action to improve their competitiveness. This section reviews steps taken by governments and industry associations in non-tropical producer countries to strengthen their sectors, improve market access and create opportunities for individual companies. The section also examines how other primary commodity industries responded to the crisis, such as wool, dairy and aluminium. These sectors all experienced a downturn in overall demand, were involved in trade and shipping, and utilized raw material for further processing after export.

The information was sourced mainly from literature and internet searches, supplemented by interviews of relevant stakeholders. Most of the information originated from government departments and industry associations. Commercial sensitivities limited the amount of information available for individual companies. Ultimately however, individual enterprises are best placed to mitigate the impact of the crisis on their operations.

Economic Reform

Governments provide the environment for industries to operate, and can influence the forestry sector through competitive tax, legislative and regulatory structures. Structural constraints and lack of infrastructural development hinder the development of the forestry sector and its international competitiveness (UNCTAD 2011). This section examines some of the economic reform measures introduced by governments during recessionary periods which have influenced forestry sector competitiveness.

In the late 1980's in response to slow economic growth, the New Zealand government embarked on a wave of economic reforms that had a major impact on the competitiveness of the New Zealand forest industry. Port companies were privatised and manning levels de-regulated. A number of stevedoring companies began to compete for the business of handling the forest industry's products. As a result the loading time of a 27 000 tonne ship reduced from 12 days to about 30 hours (Brash 1996). In current terms this equated to a saving of US$5 per m^3 for every log exported. Similar improvements were achieved for other forest products.

Transport is often a significant cost items for commodities. Countries have reduced transport costs by increasing allowable truck load weights. The American Forest and Paper Association lobbied the US government to increase the national truck weight maximum of sixth axle trucks on Federal Interstates from 80 000 pounds to 97 000 pounds (AFPA, 2011). The New Zealand forest industry has also worked with the New Zealand government to make it permissible for trucks to increase load weights from 45 to 53 tonnes and 22m in length over prescribed routes. In May 2010 the new Dimension and Mass Land Transport Rule came into force, providing the New Zealand trucking industry with a 20 percent increase in overall productivity for the prescribed routes, with a 9 percent increase in fuel efficiency alone (NZ Logger, 2010).

Many of the businesses involved in the forest supply chain are small businesses with limited financial resources. As income declines from the recessionary conditions these businesses quickly become

squeezed financially and re-investment in machinery and other productivity enhancing factors declines. Ultimately this can force businesses to close, reducing the capacity for the supply chain to respond as demand returns. The Government of Nova Scotia reduced the small business tax for the first $400 000 of taxable income, to help businesses maintain their viability (Nova Scotia Department of Finance 2011). The government, through its private-sector led development agency, also offered business loans to enable the larger industries to invest, especially during the downturn when banks were less willing. For example, Maritime Paper received loans to fund a new printing press, ensuring the company improved competitiveness and maintained employment (Nova Scotia Business Inc. 2011).

Enhancing the Value Proposition

As demand declines during economic downturns, competition between suppliers intensifies. The industries and businesses that can differentiate their offerings through deeper understanding of the market's requirements are better placed to grow market share, and to mitigate the worst effects from the crisis.

Individual enterprises in the softwood and temperate hardwood forest industries have been developing their green credentials, certifying forests and seeking chain of custody certification to meet market demand for certified sustainable supply. Producers and manufacturers exporting to the USA and Europe have faced increasingly stringent requirements for their products to be sourced from legal and sustainable supply, through such legislation as the Lacey Act in the US , the European Union's Forest Law Enforcement, Governance and Trade Action Plan (FLEGT) and the EU Timber Regulation (to be imposed in 2013).

In response to these pressures, the American Hardwood Export Council (AHEC) commissioned a series of independent and peer reviewed reports to look at all aspects of the sustainability of US hardwood production in order to determine the credibility of its promotions of the environmental credentials of the American hardwood industry. Seneca Creek and Associates, for example, ascertained the legality and sustainability of US hardwood supply. The authors of the report evaluated the risk of illegally sourced timber being included in the mix of US hardwood exports. They also assessed the risk of US hardwood products falling within one of five categories of wood that should be avoided according to the FSC Controlled Wood Standard that applies to the non-certified portion of FSC "mixed" products. The report concluded that the weight of evidence strongly indicated that there was very low risk that US hardwood exports contain wood from illegal sources (AHEC 2011b).

In October 2008, AHEC also launched a Responsible Purchasing Policy for Exporters (RPP) to provide further assurance that US hardwoods exported by AHEC members were derived from legal and sustainable sources.

Additionally AHEC (2011b) appealed to end users on the basis of all aspects of sustainability, from growing the trees to the carbon footprint in shipping products to the European market.

Innovation and New Products

The global economic crisis brought suppliers not only declining demand and even loss of certain markets, but also lower prices. Some industry participants searched for new processing options to

provide other revenue streams. Some suppliers saw opportunities in the growing demand for renewable energy in Europe, which created demand for fibre for pellet production. For example it has been reported that in the Piedmont Region of the USA some forest owners began to capitalize on the biomass wood-to energy market (Chad et al, 2010). The EU's wood pellet demand increased 7 percent in 2010 to about 11 million tons. In 2009 Europe imported about $250 million worth of pellets from the USA, Australia and Vietnam (Crowe 2011). In Finland, growing demand for wood energy boosted the tending and thinning of young stands, which helped to maintain forest investment and employment despite reductions in harvesting of mature timber (Hänninen and Yrjö, 2010). Thus while the demand for renewable energy in itself was not induced by the crisis, the response by the industry was affected by the decline in demand from traditional fibre markets.

In general, the forest industry has not been recognised for its product, processing and business systems innovation (Hoovgard, Hansen and Ross, 2005). The Canadian industry has been one of the most active in supporting innovation. In July 2011, the government offered C$53.5 million to improve the environmental performance and economic competitiveness of Canada's forest industry by focusing on innovation and new product development (RISI 2011). British Columbia, through Forestry Innovation Investment Ltd. (FII) and in conjunction with the Canada Wood Group (CWG) has spent several years demonstrating new uses for softwood products in order to help diversify B.C.'s markets (COFI 2009).

New Markets

The decline in US construction due to the sub-prime mortgage crisis led to a dramatic reduction in sawnwood exports from Canada to the USA. The Canadian forest industry, faced with inevitable retrenchment, took up the challenge to find alternative markets. Fortuitously demand for wood products in China was growing rapidly with the prospect of providing a growing market for Canadian forest products.

Development of the China market was seen as a national objective. Various provincial governments and agencies, and industry trade associations were brought together to co-ordinate their activities. Canada's forest sector interests in China as well as other key markets were represented at the federal level by CWG. CWG dealt with market access issues and helped to co-ordinate activities across other groups on behalf of member associations[6]). At the Provincial level the government of British Columbia's market development agency FII was the most active.

FII's efforts to grow the China market started in 2004, but the global economic downturn only increased the importance of the market development programmes. The main focus of FII's activities were building relationships with Chinese officials, developers and distributors, and educating architects, engineers and builders on the merits of building with wood. To this end they formed a Chinese subsidiary, Forest Investment China (FII China), which worked closely with industry through the CWG. FII China's emphasis was on updating building codes and standards, creating a critical mass of professionals and trades people to support a wood frame construction sector, and demonstrating the benefits of the wood frame construction system through real world demonstration projects. In 2009/2010 spending totalled C$10.3 million and included building three institutional wood frame

[6] These include the Council of Forest Industries/SPF Group, BC Wood Specialties Group, Coast Forest Products Association, Quebec Wood Export Bureau, Forest Products Association of Canada, the Western Red Cedar Export Association, Certiwood and APA.

facilities in Wenchuan, China, as part of the earthquake reconstruction, and supporting the construction of a further 200 wood frame farm homes in the region. In addition they reached an agreement with the city of Shanghai to lead construction of a wood-frame multi-family structure to show the cost benefits of using wood, in a way that fits with the city's housing strategy. The benefits of this programme resulted in a growth in sales, with sales tripling between 2007 and 2009. In January 2010 sales were up by about 450 percent compared to the same month in the previous year. In 2010/2011 spending was earmarked to continue at similar levels, with about two-thirds spent on association and demonstration activities and one-third on activities directly delivered by FII (see FII for a more detailed view of their activities).

The Council of Forest Industries (COFI) is the largest and most active of the British Columbia forest product industry associations. It was also engaged in market development efforts in China. In 2010/2011 it was engaged to promote wood frame construction through wood seminars, tradeshows, builder and consumer awareness building and other promotional initiatives, targeting another 10,000 or more builders acknowledging British Columbia as a preferred supplier of forest products (FII).

Successive trade missions to China provided significant new lumber orders for British Columbia's forest industry (COFI 2010). Trade missions were considered to be important vehicles to cement relationships between countries at the political and industry level, and to launch new market development initiatives. In Canada, they often involved politicians at federal and provincial level, as well as an entourage of industry groups and company heads.

During the economic downturn, softwood forestry sectors also increased their focus on domestic markets. Programmes that focussed on the domestic market include "NZ Wood" in New Zealand, "Wood. Naturally Better™ "in Australia, which was an industry initiative launched late 2008, and the Canadian "North American Wood First Program".

Other commodity sectors appear to have been less active in market development during the crisis period. In the global dairy industry for example, import demand is generally heavily influenced by individual country's policy settings, and the level of government stocks in the EU and USA. At the height of the economic crisis, global demand for dairy products plummeted, reducing global trade by 12 percent in 2009 (Jesse and Dobson 2010). Given the prevailing economic conditions few trade policy expansions took place, as trade officials in importing countries were more interested in protecting their domestic dairy producers than in expanding trade (Jesse and Dobson 2010).

Promotions

Promotional activities often accompany new market development. However they are also used to increase market share in existing markets, or to promote products into new end uses. The British Columbia Forest Industry, through COFI and CWG, provided promotional and technical support for the construction of a large wooden multi-unit home in Japan to demonstrate the benefits of wood in large construction (COFI 2009). In addition, the industry through CWG participated at the annual Busan (Korea) Housing Fair. The AHEC has also been engaged in an on-going program of promotions at international fairs, exhibitions and conventions (AHEC 2011a).

Parts of the wool industry have also been engaged in promotional activities to increase market share during the economic downturn. It was reported that the Australian Wool Innovation (AWI)

continued with international promotions and market education programmes despite the economic downturn, to position Australian Merino Wool as a premium product and enhance the benefits to producers with a recovery in demand (Wool.com, 2008). The AWI is a not-for-profit company owned by over 29,000 Australian woolgrowers. AWI invests in research, development, innovation and marketing along the global supply chain for Australian wool. They are funded in part through an industry levy, with government contributing to funds raised by the industry.

Distribution

Industry structure and channels of distribution have a major impact on export competitiveness and value creation. During economic recovery strong competition in distribution channels can help to drive sales, but during downturns this can result in a rapid erosion of prices. As prices decline, the problem can be exacerbated by importing wholesalers continuing to import shipments at discounted prices in order to reduce the average cost of their inventory and maintain market share and sales during the low point of the economic cycle. This behaviour is supported by exporters competing for market share. As a result, any recovery in import demand can be delayed. Some industries have therefore attempted to tighten the distribution structure through co-operation in export markets.

The New Zealand wool industry suffered from low prices for much of the last decade. Many in the industry attributed this to strong competition from other suppliers and substitutes, giving rise to a debate about industry structure and distribution channels.

Producers exported their wool clip through independent exporters who bought the wool from them. Some producers felt that their interests were not fully aligned, and as exporters were not perceived to be addressing the issue of declining returns. In 2010 parts of the industry formed the Wool Partner's Co-operative, a producer owned organisation dedicated to the export of wool. It was hoped that a significant proportion of the industry would eventually take a stake, and help to create a marketing entity that could achieve market leadership. However the number of producers who were willing to buy into this company was insufficient and the company was unable to raise sufficient capital to buy the producers' wool (Scoop Business 2011).

Even earlier a similar approach to log exports was attempted by the New Zealand forest industry. The aim was to set up a significant entity that could establish price leadership and sell the New Zealand brand. A log exporting company was formed in 2002 through a joint venture between Carter Holt Harvey and the receivers of the Central North Island Partnership, both representing the largest forest owners in the country, which collectively accounted for just less than 50 percent of all New Zealand logs exported. However, in contrast to the wool industry, the company only operated on a commission basis, with producers retaining the title to their timber until it was paid for by the counterparty. Hence only a minimum amount of capital was required for producers to secure a shareholding. Other producers were expected to also take up shares, with a target of representing 65 percent of New Zealand's log exports. However it did not receive the necessary support as most of the smaller producers perceived a risk of losing control to the two large companies. Following the change of ownership in one of the parties of the joint venture, the decision was taken in 2005 to liquidate the company.

The most successful examples of producer co-operation in exports are where there has been a long tradition in exports and/or they have been supported by government legislation. The dairy industry

in New Zealand has for a significant period exported through a statutory board, so when the industry was deregulated early this century most of the producers supported the continuation of a large producer controlled exporting entity. This arrangement is generally regarded as having been positive for producers.

Financial and Operational Strategies

The most immediate action most companies take in response to a major downturn is reducing stock levels and their working capital requirements. Lower stock levels also serve to reduce the pressure on prices.

Periods of economic crisis also mean higher credit risk for exporters. Astute companies re-evaluated their policies for trading counterparties, renewing their efforts to ensure systems and controls in the front, middle and back office were sufficiently robust to prevent or quickly detect rogue trading activity (PWC, 2009). Trades are conducted mainly through letters of credits, channelled through first class banks. There is increased requirement for letters of credits to be confirmed[7]. Exporters charting space or whole vessels demanded letters of credits to be opened and confirmed prior to shipment to ensure commitments could be met.

Shipping tends to be a significant cost in exporting commodity products to overseas markets. With a drop in demand surplus shipping capacity will drive freight costs downwards. In this environment there is little incentive to lock in freight costs by entering into longer term shipping agreements, unless a recovery in the market becomes apparent. Therefore shipping is mainly through the spot market. Those left with higher priced contracts may be forced to offload their positions due to inadequate trade.

In the dairy industry, the downturn forced producers to slash prices and reduce production in order to reduce inventory. With more limited supplies producers focussed on the higher value segments in order to maximise returns (Dairy Australia 2010).

The aluminium industry is also subject to cyclical fluctuations in prices, general economic conditions and end-use markets. Mergers and acquisitions (M&A) have historically been a critically important growth strategy for mining companies, in their quest for operational efficiency improvements. In 2009 the global financial crisis resulted in an unprecedented decline in metal prices and a collapse in demand from aluminium product markets. As a result of the crisis there was a slow-down in M&A activity as companies tried to preserve their balance sheets (Zacks Investment Research 2011).

Alcoa, the world's largest aluminium producer responded to the crisis by issuing new debt and equity instruments, optimising their business and investment portfolio, and instituting a program to improve their procurement efficiencies, overhead rationalisation and working capital improvements. The aim was to preserve cash. Importantly they continued to maintain a focus on growth through targeted investments, to better position the company for the time when market conditions improve (Alcoa).

Rusal, a Russian aluminium producer took the unusual step of launching an Exchange Traded Fund (ETF) through Glencore. This allowed it to move large quantities of stock to back the fund and in the

[7] There have also been instances where companies have been forced to loosen credit conditions in order to move stock.

process monetise some of its inventory. The launch of this and other ETF's was blamed for pushing aluminium prices higher (Financial Times 2010).

Much of the response to the financial and economic crisis by the global forest industries has been at the enterprise level. The International Wood Products Association reported that while the Association itself had no specific response, their members would have each responded as appropriate to their own specific circumstances. However the details remain confidential to their member companies.

Concluding remarks

Periods of financial and economic crisis are characterised by sharp reduction in demand and difficult credit conditions, which can severely affect the forestry sector's ability to operate and maintain employment. The few areas of remaining demand become hotly contested, increasing the pressure on prices.

Governments, industries and enterprises in various countries have taken a number of steps to become more competitive internationally, both in previous downturns and the most recent crisis. For example, economic reforms and infrastructural spending have permanently lowered the New Zealand industry's cost structure. In some countries governments also assisted their industries by negotiating better market access, such as through reduction in tariff escalation on value-added products. Short term assistance was given in Nova Scotia by providing tax breaks and making funds for investment more accessible to industry.

Industry associations, sometimes in partnership with government, have focussed mainly on market development and promotions. In some countries the efforts have been continuous over many years and even decades, as wood using sectors have been found to be largely unresponsive to short-term campaigns. The growth of the China market during the current crisis has been fortuitous, but it would not have grown so rapidly for the Canadian industry without the efforts of many organisations at all levels.

The structure of the supply chain and the distribution of commodities can also influence returns. Where there are large numbers of exporters and declining demand, competition intensifies resulting in an erosion of prices. Some industries have attempted to restructure their distribution channels in order to reduce intra-channel competition. However, this has frequently failed due to the rewards for those operating outside the arrangement. Success has been mainly in industries where there is a history of such arrangements or been supported by legislation.

Innovation permeates every aspect of the forestry business, although much innovation is unseen at the enterprise level. However some developments have been documented. Increased use of bioenergy has opened new earning possibilities for the forestry sector. Changes to building codes have opened up new end uses for wood, and expanded the range of product options. However new products tend to require a significant development period till they reach their market potential, and they require up front funding which can be scarce during recessionary periods. The support from government can therefore be crucial. Product and market diversification are key activities for reducing market volatility.

Suppliers also looked at ways to enhance their value propositions. The demand for certified products and chain of custody certification has provided new opportunities for suppliers to differentiate themselves. In some markets, certification defines the right to operate, as mandated by the Lacey Act in the U.S. and the EU Timber Regulation. As new technologies and tools emerge for identification of wood and timber tracking, the more “due care” action regulators such as the US Department of Justice will expect from timber importers and the supply chain. In other words there is an opportunity for enterprises to continue to raise standards in ensuring their supply is sustainable and compliant with the most stringent requirements.

At the enterprise level, companies have focussed on reducing stock and instituting stricter payment requirements, to preserve cash flow and minimise bad debts. Shipping services were sourced from spot markets as rates declined.

There was no uniform response by the softwood and temperate hardwood industry to the economic crisis, other than the usual tactics of tightening financial and operational management and reducing inventory. Each industry and enterprise implemented actions that reflected their own particular set of circumstances. Some industries coordinated their actions at all levels of organisation, from government to industry associations and down to the individual enterprise, while others expected the individual enterprises to respond appropriately.

It has been difficult to differentiate responses that were specific to the economic crisis, and activities that were part of an on-going strategic programme. This is because most activities were not only appropriate for mitigating the effects of the crisis; they were just as relevant in normal economic conditions. However downturns and crisis situations can create the right environment and political will to take the necessary steps to improve competitiveness and may have led to changes in emphasis and importance attached to planned programmes, but not necessarily direction. Those sectors that responded with a comprehensive and coordinated plan of action are likely to be those that benefit most from the economic recovery.

7 RECOMMENDATIONS

The following recommendations are made for consideration by ITTO, governments, regional organisations and the private sector to minimize the risks to ITTO producer member countries of future global economic crises:

Recommendations for ITTO

Grow domestic and regional markets

- Support member countries to develop and grow their domestic markets, including the setting up of statistical and reporting systems to report on production, trade and prices in wood products on the domestic market. Domestic markets are critical for the growth of the value-added industries in member countries and can serve as a buffer or stabilizing force for the industry during downturns in export demand.
- Facilitate detailed wood market research in emerging and regional markets with a potential to grow major new outlets for tropical wood products and facilitate intra-regional trade in value-added products, assisting in market and product restructuring to move the wood products value chain towards growing, emerging markets.
- Facilitate the promotion of trade in legal timber in domestic and regional markets.
- Renew ITTO's work in the promotion of intra-regional trade in timber and timber products, reviewing and, where appropriate, acting on recommendations of recent work in this area.
- Support regional trade fairs, exhibitions and conferences to build effective use of wood products at regional level and promote awareness of wood products at national level.

Improve the competitiveness of the tropical wood products sector

- Strengthen ITTO work on promoting value-added processing in ITTO producer member countries, and raising enterprises' capacity for R&D and technology upgrades. During the crisis, enterprises with improved technology and capacity to produce high-value products were more successful in maintaining business.
- Consider recommendations from previous ITTO work on developing a generic design-led promotional campaign for tropical wood. The crisis led to a reduction in price expectations in many market sectors, threatening traditional markets for tropical wood products and intensifying competition from substitute products.
- Continue to facilitate efforts by ITTO producer members to achieve internationally recognized forest and chain of custody certification standards. The economic crisis has intensified efforts in consumer countries to ensure that wood products are sourced from legal and sustainable sources.
- Continue to facilitate efforts by ITTO producer members to improve forest governance, given that the economic crisis has increased pressure on wood processing companies to reduce production costs and in some cases to resort to illegal production and trade activities.

Develop preparedness measures for global financial crises

- Facilitate efforts at the international level to bring together government, regional and private sector organisations to conduct regular outlook studies specifically for the tropical forestry sector which incorporate the use of scenario planning and foresight methodologies,

with the aim of reducing uncertainty and risks associated with global economic crises for ITTO producer countries.

- Strengthen the capacity of ITTO producer countries at government and forestry sector organizational levels to monitor changes in the global economic environment and the forestry sector business environment in domestic and export markets so that they may assist forestry enterprises to adopt appropriate preparedness measures as early as possible.
- Strengthen the capacity of ITTO producer member countries to assist their forestry enterprises to undertake crisis management planning, with an emphasis on country-specific vulnerabilities and risk assessment, given the diverse nature of conditions in ITTO producer member countries.
- Renew support for the ITTO Market Information Service, and extend the coverage to include global crisis monitoring of relevance to the forestry sector. Develop a platform for ITTO members to share their experiences and lessons learned on the impacts of the global financial and economic crises.

Develop guiding principles for responding to global economic shocks

Assist ITTO member countries and their public and private sector forest industries, in developing a set of guiding principles for responding to global economic shocks, including:

- for SMEs in coping with reduced liquidity and credit crunches;
- for financial institutions in providing services to assist large and small organisations in accessing finance;
- for large organisations as part of the value chain, working to strengthen partnerships in the supply chain to work together in overcoming difficulties;
- for governments in understanding the needs of large and small organisations during economic shocks;
- for forest industries in the public and private sector in developing marketing strategies to overcome reduced consumer demand;
- for government and public and private sector organisations, in strengthening innovation and R&D capabilities to enhance competitiveness in existing markets and create new possibilities for market expansion.

Recommendations for ITTO producer countries

Grow domestic markets

- Commit to developing value-added domestic markets to reduce export dependence and diversify and expand markets, in particular by developing reporting systems which will support development of the domestic market.
- Promote trade in legal and sustainable timber in domestic and regional markets.
- Strengthen the capacity of timber trade associations to develop their advocacy skills in engaging constructively with governments to create a favourable environment for the forest industry.
- Improve distribution channels within domestic and regional markets.
- Provide stimulus for domestic industries, increasing domestic demand for value-added wood products.

Cushion the impacts on enterprises, particularly SMEs.

- Ensure during economic downturns that economic stimulus packages effectively target private investment and SMEs.
- Establish business bases for small forestry enterprises with emphasis on training support.
- Establish organizational structures at national level that enable SMEs, forest industry and timber trade organisations to work together to share information and market intelligence, and improve sectoral and organisational planning.

Ensure better access to finance for forestry enterprises

- Ensure that enterprises have sufficient trade credit to continue exporting during demand downturns. In the short-term governments should monitor the availability of trade finance for exporting enterprises to ensure that they have sufficient access to trade credit. Governments may need to provide alternate sources of trade finance for enterprises which are struggling to access finance from traditional sources.
- Provide SMEs with a wide range of credit channels and provide a range of financial incentive measures to reduce financing costs for SMEs.

Develop preparedness measures

- Assist forestry enterprises to strengthen their crisis management capabilities, and develop the ability to anticipate the impact that future crises may have on their business. Enterprises need to be able to establish early warning systems, and rapidly evaluate the benefits and risks of the various response strategies that are open to them.
- Undertake detailed reviews of the position and competitiveness of the wood products industries at country level with a view to developing long-term strategic plans which will improve the competitiveness of the wood products industries.
- Develop systems that will ensure that public and private sector organisations are able to access the necessary market intelligence to identify structural factors that can affect future markets, anticipate change and identify actions required to mitigate the effects of unexpected market changes.
- Consider the socio-economic implications of worker retrenchments and changes in worker hours and wages in the forestry sector during economic crises, particularly the effects on migrant workers. Ensure social protections for vulnerable workers.
- Develop better multi-stakeholder models to plan for contingencies and build system resilience against shocks to the system. Develop better public-private sector engagement in collaborative risk assessment and greater sharing of data around threats and vulnerabilities.

Develop internationally competitive forestry enterprises

- Assist SMEs in the forestry sector to adopt new technologies and access new markets. Encourage innovation to increase the core competitiveness of enterprises.
- Intensify educational and technical assistance programmes to SMEs to improve understanding of the implications of new environmental trade regulations and the technologies that can be applied to them.
- Facilitate the improvement of distribution channels, including the development of efficient transport and other infrastructure to assist tropical timber exporters in developing more

efficient just-in-time delivery systems to customers. During demand downturns, importers hold limited inventories and require timely delivery systems.

- Create an enabling environment for the promotion of further domestic processing.

Recommendations for ITTO consumer countries

- Minimise the application of protectionist trade measures during global demand downturns and consider their full implications through the wood products value chain, which often cuts across multiple borders.
- EU countries to continue to work with ITTO producer countries through the FLEGT programme to develop VPAs to enable continued access to EU markets for legal and sustainable wood supplies.
- Ensure that green building, CSR and public sector procurement policies do not discriminate against tropical wood products and that their assessments are evaluated on a scientific and evidential basis.

Recommendations for regional organisations

- Develop regional multistakeholder task forces to consider intra-regional differences in risk exposure to demand downturns in the forestry sector and take collaborative actions to minimise risk.
- Support trade and investment initiatives relevant to improving the regional business environment for SMEs. Promote intra-regional trade through the organisation of timber trade fairs and exhibitions.
- Identify blockages and overcome barriers and impediments to enhance competitiveness, make businesses more profitable, help companies better manage inventories and lower costs.
- Strengthen regional cooperation and integration in addressing issues related to illegal harvesting and trade.
- Enhance the operation of integrated regional supply and value chains which reflect the way business is now being done.

Recommendations for forest industry and trade associations

Strengthen associations and cooperation

- Strengthen capabilities and cooperation between trade and industry organisations in the forestry sector to facilitate strategic planning and the implementation of action plans to minimise market risk for sector during global economic crises.
- Cooperate in the development of systems for market intelligence gathering and analysis and sharing of information and statistics of relevance to the sector.

Develop marketing strategies to overcome reduced market demand

- Industry organisations can assist SMEs in re-examining marketing strategies and monitoring market share to maintain a strong position in existing markets, to maintain long-term growth, stabilise customer relationships and keep a watching eye on customer performance. Encourage SMEs to refrain from cutting marketing budgets during demand downturns.

- SMEs are encouraged to explore new markets and growing market share ahead of competitors, using market information and appraising the level of risk involved.
- SMEs are encouraged to make effective use of external resources, looking for collaborative research opportunities and to form strategic alliances with domestic or overseas companies to collaborate on technology transfer and training. Companies tend to cut back on investment in R&D during demand downturns, reducing the capability to transform and innovate. However, opportunities exist to leverage off access to technology transfer and training, market knowledge and labour, particularly with larger organisations in ITTO consumer countries.
- Trade associations consider participation in market exhibitions and trade fairs to promote their products in regional markets.
- Larger enterprises consider improvements in productivity, product diversification and the development of specialised products for a range of specialist market niches and market destinations.

Develop internationally competitive forestry enterprises

Forestry enterprises are encouraged to:

- Effectively engage in ICT to improve processing efficiency, marketing and trade in timber and timber products.
- Invest in continuing productivity improvements to improve cost competitiveness.
- Develop in-company statistical systems and capacity for data collection, collation and analysis.
- Invest in increasing the overall quality of the workforce by upskilling and training of personnel, particularly for value-added processing.
- Pursue the production and trade in legal and sustainable timber as a means of differentiating their products for both domestic and export markets.
- Commit to the work of the forest industry and trade associations including membership to internationally recognized trade associations such as the IWPA, as a means of gaining market information, in particular evolving regulations and changes in policy in their export markets.
- Invest in cooperative, joint initiatives to promote trade in tropical timber

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APPENDIX 1: TRADE AS A % OF GDP, ITTO PRODUCERS 2006-2011

	2006	2007	2008	2009	2010	2011
Country Name						
Africa						
Cameroon	44.0	43.3	68.1	58.0	61.0	60.1
Central African Republic	36.0	37.5	34.3	37.3		
Congo, Dem. Rep.	72.6	64.8	61.8	47.5	64.9	65.1
Congo, Rep.	149.8	132.1	122.2	120.6	139.8	138.6
Cote d'Ivoire	95.0	89.8	85.3	76.3	76.7	84.3
Gabon	93.7	95.1	98.6	94.6	97.3	96.0
Ghana	65.9	65.4	69.5	71.6	70.6	81.9
Liberia	173.6	153.8	179.0	120.5	134.5	142.9
Nigeria	70.6	67.0	71.2	65.6	69.1	68.9
Togo	94.3	92.4	87.4	89.3	91.1	92.5
Asia-Pacific						
Cambodia	144.6	138.3	133.3	105.1	113.6	
Fiji	119.4	111.9	123.4	104.7	117.4	112.9
India	45.3	44.9	52.3	45.6	49.7	54.5
Indonesia	56.7	54.8	58.6	45.5	47.5	55.9
Malaysia	210.5	199.4	183.2	171.2	176.8	
Myanmar						
Papua New Guinea	147.9	149.1	136.4	114.7	108.9	99.1
Philippines	94.9	86.6	76.3	65.6	71.4	62.0
Thailand	143.8	138.5	150.3	126.2	135.1	148.1
Vanuatu	90.3	86.8	100.8	91.0	102.4	
Latin America/ Carribean						
Bolivia	74.5	76.1	82.9	68.6	75.5	67.0
Brazil	25.8	25.2	27.1	22.1	22.8	24.5
Colombia	38.4	36.6	38.3	34.3	33.6	35.3
Ecuador	66.8	69.5	75.7	61.5	71.6	72.4
Guatemala	66.8	67.9	64.1	57.1	62.1	65.0
Guyana						
Honduras	133.1	135.1	135.7	100.5	108.5	115.1
Mexico	57.2	57.4	58.3	56.7	62.0	63.2
Panama	146.2	146.2	146.1	141.1	143.1	141.5
Suriname						
Trinidad and Tobago	107.0	100.6	100.4			
Venezuela, RB	58.7	55.6	51.1	38.3	45.6	35.8
Peru	48.4	51.5	54.3	44.4	48.4	51.4

Source: World Databank

APPENDIX 2: FOREIGN DIRECT INVESTMENT, NET INFLOWS, ITTO PRODUCERS, 2006-2011, US$ millions

Country Name	2006	2007	2008	2009	2010	2011
Africa						
Cameroon	16	191	-24	668	-1	
Central African Republic	35	57	117	42	72	
Congo, Dem. Rep.	256	1808	1727	664	2939	
Congo, Rep.	1488	2638	2483	2083	2816	
Cote d'Ivoire	319	427	446	381	418	
Gabon	268	269	209	33	170	
Ghana	636	1383	2715	1424	2527	
Liberia	108	132	395	218	452	
Nigeria	4854	6035	8197	8555	6049	
Togo	77	49	24	49	41	
Asia-Pacific						
Cambodia	483	867	815	539	783	
Fiji	412	338	309	56	196	
India	20336	25483	43406	35596	24159	
Indonesia	4914	6928	9318	4877	13771	18160
Malaysia	6076	8590	7376	1387	9167	10779
Myanmar	279	717	873	1090	910	
Papua New Guinea	13	102	-30	423	29	
Philippines	2921	2916	1544	1963	1298	1262
Thailand	9455	11327	8538	4854	9679	
Vanuatu	43	34	44	32	39	
Latin America/ Carribean						
Bolivia	281	366	512	423	622	
Brazil	18782	34585	45058	25949	48506	66660
Colombia	6656	9049	10620	7137	6899	13234
Ecuador	271	194	1006	319	167	
Guatemala	592	745	754	600	881	1048
Guyana	102	152	168	208	270	
Honduras	669	928	929	523	797	1014
Mexico	20006	31313	26889	15959	20208	19440
Panama	2557	1777	2196	1259	2350	
Suriname	-163	-247	-234	-93	-256	70
Trinidad and Tobago	883	830	2801	709	549	
Venezuela, RB	-508	1620	1195	-2536	1209	5376
Peru	3467	5491	6924	5576	7328	

Source: World Databank

APPENDIX 3: GLOBAL COMPETITIVENESS RANKING, SELECTED ITTO PRODUCERS AND CONSUMERS

	Overall rank	Institutions	Infrastructure	Macroeconomic environment	Higher education and training	Technological readiness	Domestic market size index	Foreign market size index	Business sophistication	Innovation
Africa										
Cameroon	111	107	126	53	117	118	88	101	116	95
Cote d'Ivoire	129	133	99	94	116	102	94	86	112	109
Ghana	114	67	106	136	108	117	83	88	97	99
Nigeria	127	121	135	97	118	104	29	40	76	98
Asia-Pacific										
Cambodia	109	94	114	116	122	115	96	95	106	108
India	51	58	86	73	85	86	4	4	44	39
Indonesia	44	61	92	35	66	91	15	23	37	36
Malaysia	26	42	30	41	49	40	36	16	25	24
Philippines	85	125	104	68	73	95	33	43	60	111
Thailand	38	64	35	46	59	68	25	17	48	52
Latin America/Caribbean										
Bolivia	108	136	100	59	100	127	89	81	117	127
Brazil	58	93	62	111	58	54	8	24	31	42
Colombia	68	103	79	50	69	63	28	52	61	65
Ecuador	105	128	96	55	92	107	60	72	107	130
Guatemala	78	124	66	63	104	67	73	87	54	89
Guyana	110	95	103	126	81	103	131	124	86	114
Honduras	91	108	85	100	106	94	92	91	85	106
Mexico	66	106	75	28	79	71	11	15	67	78
Panama	53	73	44	30	82	41	93	74	46	64
Peru	73	96	88	75	76	74	44	59	71	110
Trinidad and Tobago	84	68	45	70	61	53	115	79	73	94
Venezuela	122	139	108	113	93	65	32	55	129	123
China	27	49	50	4	60	78	2	1	41	26
USA	4	40	15	87	9	17	1	2	8	1
France	15	26	4	44	17	12	7	10	12	19
Germany	5	13	2	23	19	10	5	3	3	8
Netherlands	8	12	7	25	10	3	21	13	5	13
UK	12	17	8	56	18	8	6	6	9	14
Japan	6	25	11	105	20	28	3	9	1	4

Source: World Economic Forum 2011.

APPENDIX 4: CORRUPTION PERCEPTIONS INDEX, SELECTED ITTO PRODUCERS AND CONSUMERS

Country	Corruption perceptions index	Country	Corruption perceptions Index
Africa		*Latin America/ Caribbean*	
Cameroon	2.5	Bolivia	2.8
Central African Republic	2.2	Brazil	3.8
Congo, Dem. Rep.	2.0	Colombia	3.4
Congo, Rep.	2.2	Ecuador	2.7
Cote d'Ivoire	2.2	Guatemala	2.7
Gabon	3.0	Guyana	2.5
Ghana	3.9	Honduras	2.6
Liberia	3.2	Mexico	3.0
Nigeria	2.4	Panama	3.3
Togo	2.4	Suriname	3.3
		Trinidad and Tobago	3.2
		Venezuela	1.9
		Peru	3.4
Asia-Pacific			
Cambodia	2.1	*Other*	
India	3.1	China	3.6
Indonesia	3.0	Vietnam	2.9
Malaysia	4.3	Japan	8.0
Myanmar	1.5	USA	7.1
Papua New Guinea	2.2		
Philippines	2.6		
Thailand	3.4		
Vanuatu	3.5		

Source: Transparency International 2011.

Note: The Corruption Perceptions Index ranks countries/territories based on how corrupt their public sector is perceived to be. A country/territory's score indicates the perceived level of public sector corruption on a scale of 0 - 10, where 0 means that a country is perceived as highly corrupt and 10 means that a country is perceived as very clean. A country's rank indicates its position relative to the other countries/territories included in the index.

Vietnam is not an ITTO member country.