

# 03

# Information Sheet



## Climate change - forestry's opportunity to reduce greenhouse gas emissions

Produced by ForestWorks to inform the forest, wood, paper and timber industry of its role, influence and opportunities in the climate debate.

### Capturing opportunities in the forest, wood, paper and timber industry

Forests and forest products absorb and lock away carbon by acting as a carbon sink or overall, a sequester or store of carbon.

All forests – native forests and plantation forests – are significant stores of carbon. Forest products used in buildings and disposed of in landfills also store carbon over the long-term. Residues generated by harvesting and processing forest products provide a valuable source of renewable energy.

Despite this important contribution to carbon management, the forest, wood, paper and timber industry has not been regarded by many people outside of the industry as a significant contributor in helping to manage the human causes of climate change.

To change this perception, the industry needs to continue its work on:

- developing and integrating forestry models within climate modeling to ensure that forestry's value is recognised and that appropriate policy is developed for the forest, wood, paper and timber industry
- reviewing existing industry policy and practice to identify their applicability to future conditions and demand
- reviewing existing industry management processes including planning, harvesting and processing to optimise for future demand trends (for example, the possible shift of emphasis towards increased production of biofuels)
- developing and integrating an industry

model and regulatory environment that enables the industry to establish a secure and sustainable contribution to the impact of climate change in the future.

*“In the long term, a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fibre or energy from the forest, will generate the largest sustained mitigation benefit.”* United Nations Intergovernmental Panel on Climate Change Report, 2007 p. 543.

As outlined in Information Sheet 1 and Information Sheet 2, there is growing recognition of the positive impact forests and forest products can have on the global management of greenhouse gas emissions.

### Forestry supports society's adaptation to climate change

The forest, wood, paper and timber industry is working to ensure it maximises its role in supporting society's adaptation to climate change, by:

- increasing community awareness of and support for the industry's role in adapting to climate change
- determining and managing the vulnerability (sensitivity and adaptive capacity) of forest ecosystems
- managing the impact of bushfires and trade-offs with fuel reduction burning in terms of carbon management
- developing cost-effective, adaptive actions that demonstrate the total value of sustainable forest management at the

Contents	Page
Capturing opportunities in the forest industry	1
Forestry supports society's adaptation to climate change	1
Contributing to the global management of the industry	2
Opportunities for the industry from climate change	2-3
International opportunities	3
Preparations for carbon trading	3-4
Voluntary carbon trading schemes	4

559A Queensberry Street  
 NORTH MELBOURNE, VIC 3051  
 ph: 03 9321 3500  
 fax: 03 9326 7800  
 forestworks@forestworks.com.au  
 www.forestworks.com.au

- local, national and international levels
- effectively monitoring the state of the forests and identifying critical thresholds that may reduce forestry's role in mitigating the global carbon cycle
- managing forests to reduce vulnerability and speed recovery after disturbance.

### Contributing to the global management of the forest, wood, paper and timber industry

Opportunities to enhance the contribution of the industry in the global management of greenhouse gas emissions include:

- mainstreaming sustainable forest management to apply across all global forests
- expanding plantation forests
- capturing the net benefit for carbon stored over the long-term in forest products
- using wood as a renewable energy source.

The long-term objective is for forests to maintain or increase their storage of carbon while maintaining viable commercial yields for timber, paper and other products required in our everyday lives. Continued production will only be sustainable if this balance is maintained and increased.

### Opportunities for Australia's forest, wood, paper and timber industry from climate change

Australia's sustainably managed forests add at least 27 million tonnes each year to the carbon stored globally in forests (currently estimated at 600,000 million tonnes of carbon. For further information, refer to Information Sheet 2, Table 2). As a result, there are major opportunities for the forest, wood,

paper and timber industry to participate in redressing the balance in the regional and global carbon cycle such as:

### Native forests draw in more than 5 per cent of Australia's greenhouse gas emissions every year.

The State of the Forest report (2008) states that Australia's native forests currently offset about 5.5 per cent of Australia's greenhouse gas emissions estimated to be equivalent to 570 million tonnes of carbon dioxide.

Additional opportunities to increase the capacity of native forests to store carbon are being generated in Australia by:

- significant reductions in the clearing of native vegetation
- regrowth of native vegetation on lands previously cleared
- wider application of sustainable forest management techniques on privately owned forest lands.

### Expanding plantation forests will increase carbon storage

Plantation forests in Australia expanded by an average of 70,000 hectares a year between 1995 and 2005. According to the State of the Forests Report (2008), they comprise 1 per cent of the total national forest estate and offset around 3.5 per cent of Australia's carbon dioxide (CO<sub>2</sub>) greenhouse gas emissions. In the future, additional carbon benefits could be achieved by:

- continuing plantation establishment on suitable lands
- using fertiliser more effectively
- improving energy efficiency during forest management.

Plantation forests also generate additional benefits to society by providing shelter, soil conservation, salinity management, biodiversity enhancement, and increasing regional employment opportunities.

### Forest products and residues store carbon long into the future

Carbon remains stored in harvested forest products and residues for long periods (often over 100 years). However, the

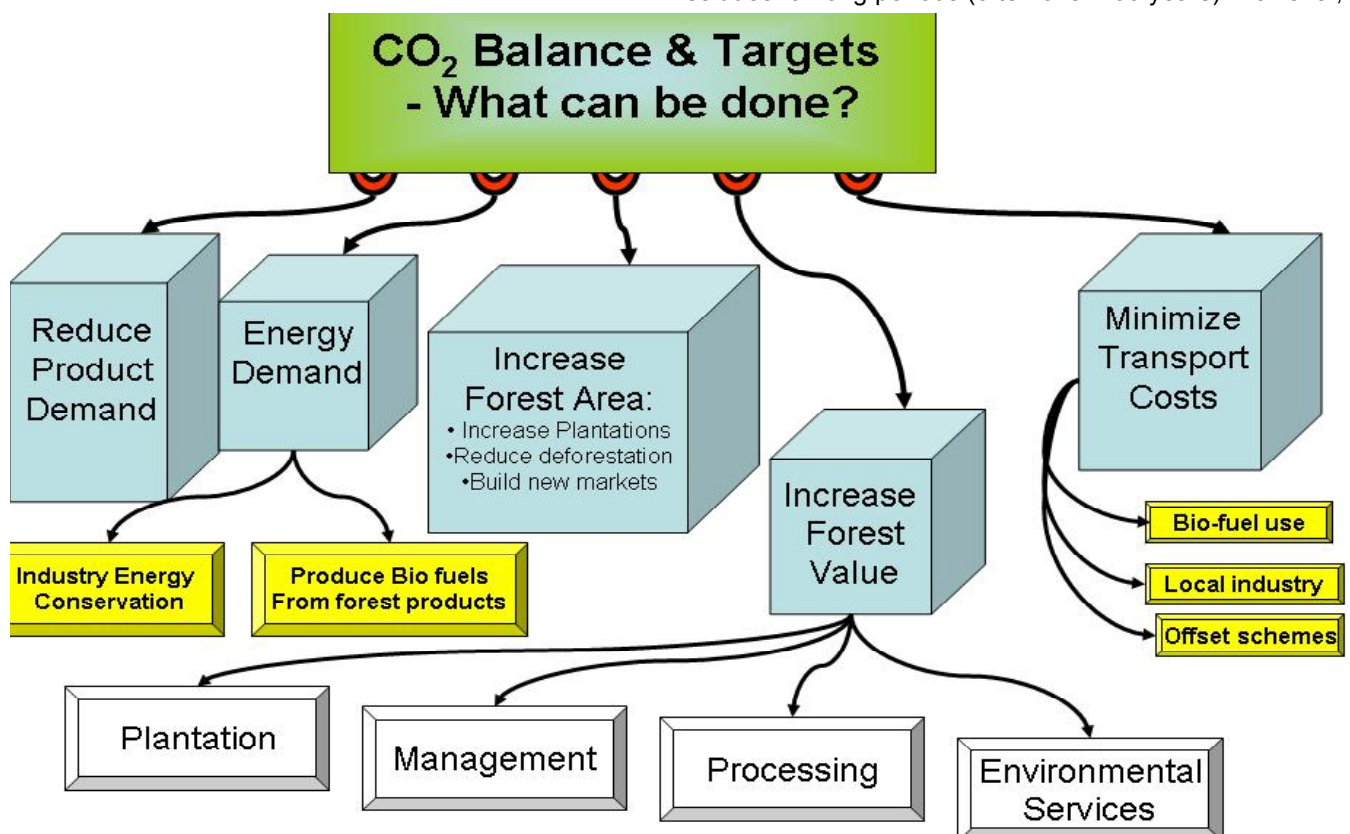


Diagram 1: Methods of reducing greenhouse gas emissions.

approach taken under current carbon accounting methods ignores carbon stored in forest products and residues. This is likely to change in future international agreements (this is discussed further in Information Sheet 4).

It is estimated that removing the limitations of this accounting protocol would add almost 1.5 million tonnes of carbon to Australia's 350 million tonnes of carbon stored in existing forest products (State of the Forests Report, 2008).

The contribution of the forest, wood, paper and timber industry to store carbon could be enhanced by formally capturing the offset value of carbon stored in forest products and residues.

The Intergovernmental Panel on Climate Change (IPCC) has established benchmarks for accurately measuring the carbon stored in forest products.

### **Renewable energy reduces reliance on fossil fuels**

There are significant opportunities to use wood residues currently not used from harvesting of forests and wood processing residues, to produce greenhouse gas neutral energy (electricity and fuels).

Wood and wood processing residues, being a renewable resource, would eliminate greenhouse gas emissions from the use of fossil fuels (e.g. coal and oil) to produce an equivalent amount of energy.

Every megawatt hour of electricity (greenhouse gas neutral energy) produced from wood and wood processing residues would result in approximately one tonne less of carbon dioxide (CO<sub>2</sub>) emissions from the burning of fossil fuels.

### **International opportunities for the forest, wood, paper and timber industry**

Globally there is significant potential for forests and forest products to reduce greenhouse gas emissions, particularly in the Asia Pacific region. The Intergovernmental Panel on Climate Change has estimated that approximately 20 per cent (or 1,700 million tonnes) of annual, global greenhouse gas emissions is released by unsustainable forest management practices in tropical forests in countries such as Indonesia and Papua New Guinea, our nearest neighbours.

As outlined in Information Sheet 2, unsustainable forest management practices arise due to excessive deforestation, primarily for agricultural purposes, degradation through unsustainable logging practices (including illegal logging), inappropriate use of fire, over-grazing and excessive conversion of native forests to plantation forests for wood, fibre and energy (e.g. palm oil plantations).

Ongoing implementation of comprehensive sustainable forest management practices conducted within a framework that also supports the livelihoods of people who directly depend on forests – providing them with access to food, income, energy and other social benefits – provides an equitable, meaningful, practical and results-based system that will reduce global greenhouse gas emissions.

Sustainable forest management practices challenge and expose unsustainable practices such as illegal logging.

There is confidence that a collaborative regime between governments, corporate investors, international parties and the forest, wood, paper and timber industry will generate additional investments to reduce global greenhouse gas emissions arising from deforestation.

As outlined above, future international agreements are likely to amend the provisions of the Kyoto Protocol that currently exclude the benefits of retaining carbon in existing forests. This change will further assist additional investment in sustainable forest management practices.

### **Preparations for carbon trading**

Carbon trading is the preferred policy option being used by governments to reduce greenhouse gas emissions.

Carbon or emissions trading refers to systems where governments set a limit on the level of emissions and then auction permits for industries to emit. In total, the permits auctioned will equal the pre-set emissions limits. If a business does not purchase permits, it cannot emit and may cease to operate.

The intention of carbon trading is for the price of permits to drive energy efficiency and cause some energy intensive industries to cease to operate. If carbon trading is not introduced carefully, it could result in job losses and the loss of industries from countries that have carbon trading,

### **Further information on climate, climate change and forestry**

The following sources provide more detailed information on the topics covered in this Information Sheet. Most are readily available on the internet, from libraries and/or journals:

- IPCC Climate Change 2001: Mitigation. [Click here to view.](#)
- The Draft Garnaut Review Report on Climate Change. July 2008. [Click here to view.](#)
- Garnaut Review Issues Paper on Emissions Trading Scheme'. April 2008. [Click here to view.](#)
- Australian Government, July 2008, Carbon Pollution Reduction Scheme Green Paper. [Click here to view.](#)
- Australian Government, Australian Department of Agriculture, Fisheries and Forestry, Bureau of Rural Sciences, 'State of the Forests Report' 2008. [Click here to view.](#)



to countries that do not. For further information on carbon trading, see Information Sheet 4.

The Kyoto Protocol establishes the principles for generating carbon benefits for forests between 2008–2012. However, the Kyoto Protocol does not allow countries to include the carbon benefits associated with avoided deforestation or the continued storage of carbon in forest products.

As part of the process of negotiating a new international agreement to replace the Kyoto Protocol which expires in 2012, the global community continues to meet through the United Nations.

There is ongoing consideration of options to incorporate deforestation and degradation programs (REDD Programs) into post-Kyoto Protocol agreements for the global management of greenhouse gas emissions. Similar discussions are expected around accounting for the carbon stored in forest products and renewable energy.

Australia is working with the United Nations Framework Convention on Climate Change to strengthen REDD methodologies to account for carbon flows on a life cycle basis for forests and forest products, in support of market-based mechanisms for implementing REDD Programs in developing countries.

Australia is in a strong position to account for changes in carbon levels in forests and forest products. The National Carbon Accounting System (NCAS) uses components of the Australian National Accounting Toolbox (NCAT) to track greenhouse gas emissions and carbon stock changes

associated with forest management systems (Full CAM) and forest products (Timber CAM).

Both NCAS and NCAT are being refined for detailed use by forest owners and managers. For further information on carbon trading, and the Australian and global response to climate change, refer to Information Sheet 4.

### Voluntary carbon trading schemes

While regulated carbon trading schemes require Kyoto compliant carbon credits for forestry activities, many companies, governments and private individuals use voluntary schemes to purchase carbon credits (including credits generated from avoided deforestation in developing countries) to reduce or completely offset their carbon emissions.

The forest, wood, paper and timber industry is uniquely placed to participate in these voluntary schemes. Forests are natural carbon sinks that can assist other industries to manage their industry's impact on climate change.

Environmental services such as catchment management, water quality improvement, biodiversity environments and tourism will assist in the overall management of carbon at the regional and local scale.

Trading in sequestered carbon will also assist in this overall management of carbon and therefore will be critical in ensuring that the forest, wood, paper and timber industry's role in emissions control is recognised and demonstrable.

### About this series

The ForestWorks Climate Change Information Series has been developed to assist Australia's forest, wood, paper and timber industry to make a significant contribution to Australia's efforts to reduce the impact of climate change.

The series includes Information Sheets and other relevant materials.

### Information Sheets

Information Sheet 1

Climate change – causes and impacts

Information Sheet 2

Climate change – forestry's influence on greenhouse gases

Information Sheet 3

Climate change – forestry's opportunity to reduce greenhouse gas emissions

Information Sheet 4

Climate change – how the world is responding

### Other materials

- Defining Climate Change – a Glossary of Terms
- Education and Training Guidance Notes for Training Providers and Workplace Trainers

The complete ForestWorks Climate Change Information Series is available at:

[www.forestworks.com.au](http://www.forestworks.com.au)