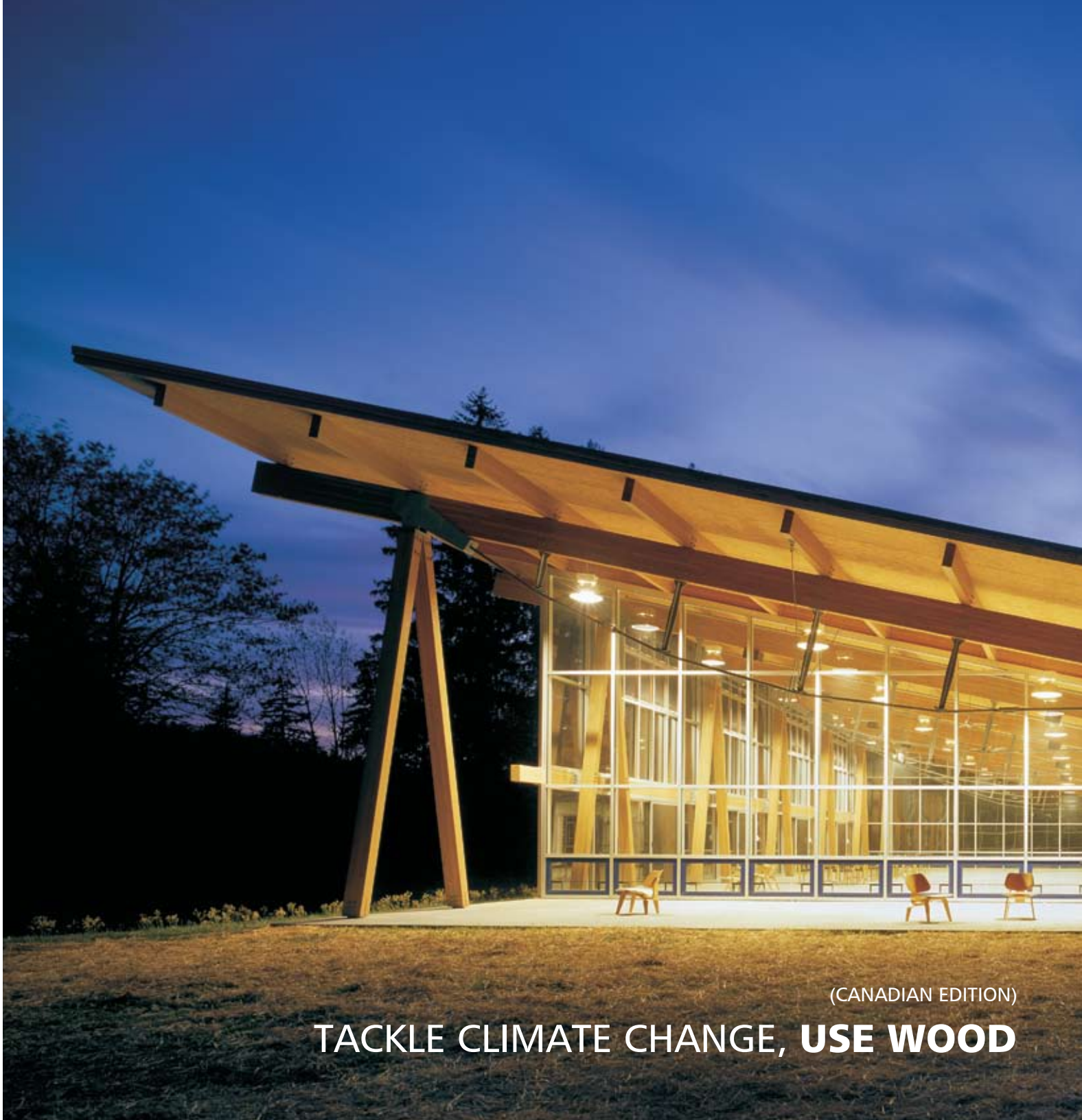
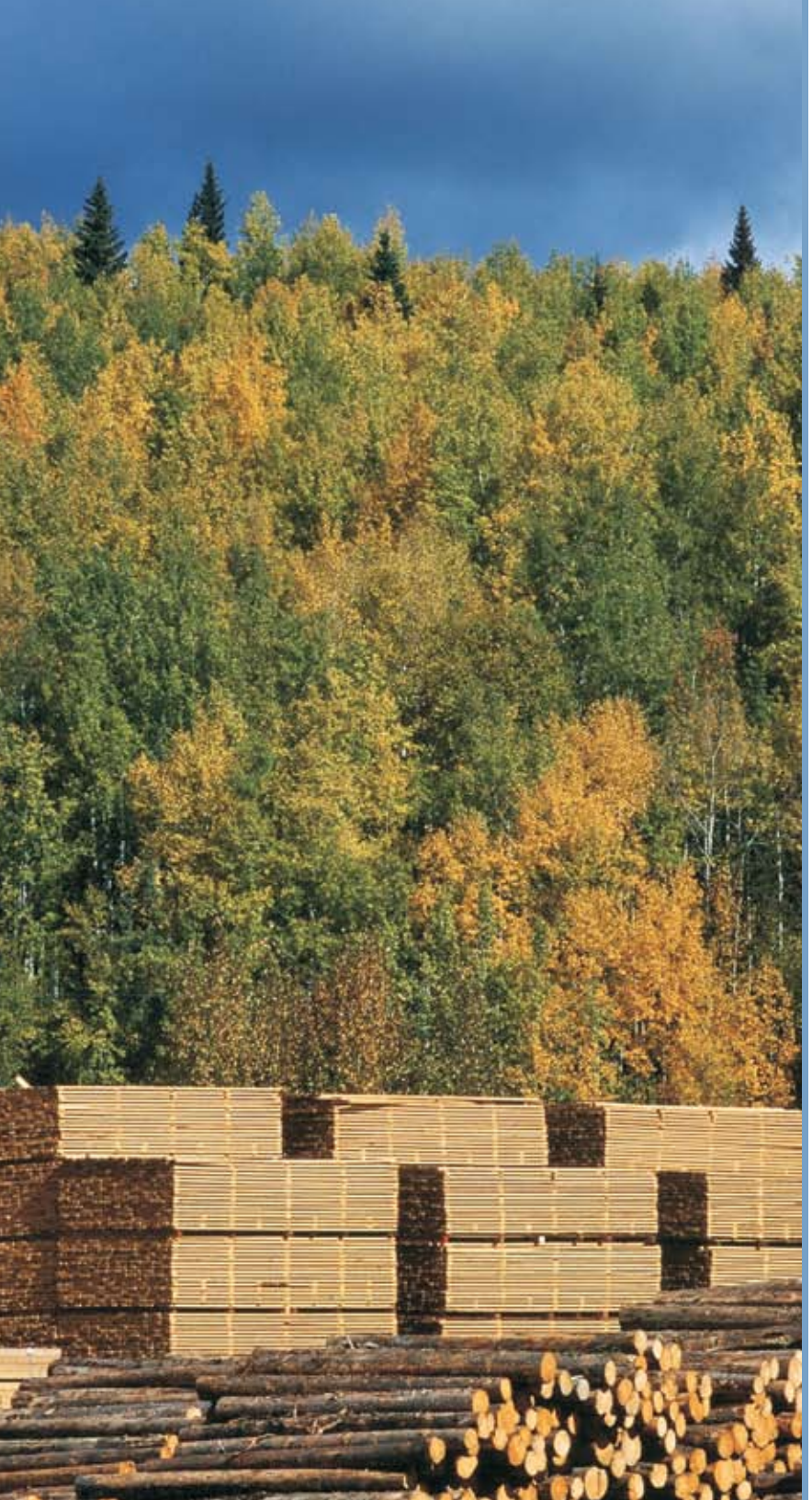


(CANADIAN EDITION)

TACKLE CLIMATE CHANGE, **USE WOOD**



FOREST PRODUCTS | A SOUND ENVIRONMENTAL CHOICE

Forests are a global treasure; and a source of beauty, inspiration, recreation and outstanding products. They also play a key role in mitigating climate change by absorbing and storing carbon in trees, soil and biomass. Just as there is no longer any doubt that the climate is changing, there can be no doubt that well-managed forests yield immense environmental and economic benefits.

Healthy growing forests recycle carbon naturally. When biomass is used instead of fossil fuels, it can reduce the build-up of carbon dioxide in the atmosphere. When trees are used for forest products, the carbon often remains stored in the products for decades, or longer.

This is recognized by the Intergovernmental Panel on Climate Change (IPCC), a scientific body set up by the World Meteorological Organization and United Nations Environment Program. A 2007 report by IPCC Working Group III says forests remove carbon from the atmosphere, and at the same time, provide products that meet society's needs for timber, fibre and energy. A stable market for forest products encourages landowners to manage forests sustainably rather than converting them to other uses such as agriculture or urban development.[i]

Canada's vast forests deliver diverse, high-quality products, backed by some of the toughest environmental laws on earth. Canadian wood products are an excellent environmental choice for construction. The country's pulp and paper industry continues to implement new and innovative ways to reduce its carbon footprint.

Governments and organizations can improve their corporate social responsibility and lighten their environmental footprint through policies and procurement processes that encourage the use of wood and paper products from well-managed forests.

We would like to thank CEI-Bois, the European Confederation of Woodworking Industries, for allowing us to take inspiration from the original “Tackle Climate Change, Use Wood”, www.cei-bois.org.

Impacts of Climate Change

"Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level."

Fourth Assessment Report released by the Intergovernmental Panel on Climate Change (IPCC) in November 2007

The Earth's climate is changing, and scientists agree this is largely due to increasing emissions of greenhouse gases, especially carbon dioxide from burning fossil fuels. Every year, 3.3 billion tonnes of carbon are added to the atmosphere.

While it is difficult to forecast specific effects of climate change because of the complexity of the interactions of the Earth's ecosystems, several significant trends are evident:

- **Changes in natural habitats will result in the loss of plant and animal species.**
- **Species that carry tropical diseases, such as mosquitoes (malaria), will spread and settle into new areas.**
- **Sea levels will continue to rise, with catastrophic results for those living in coastal or river delta areas or low-lying land.**

There will be an impact on the world's forests. They may become more vulnerable and face a greater risk from invasive species and natural disturbances such as disease, fire and insect infestations.[ii]

GREENHOUSE GASES, CARBON, AND FORESTS | HOW THEY FIT TOGETHER

- Human activities are releasing too much CO_2
- This has upset the Earth's natural carbon balance
- Forests can help to restore the carbon balance

THE GREENHOUSE EFFECT

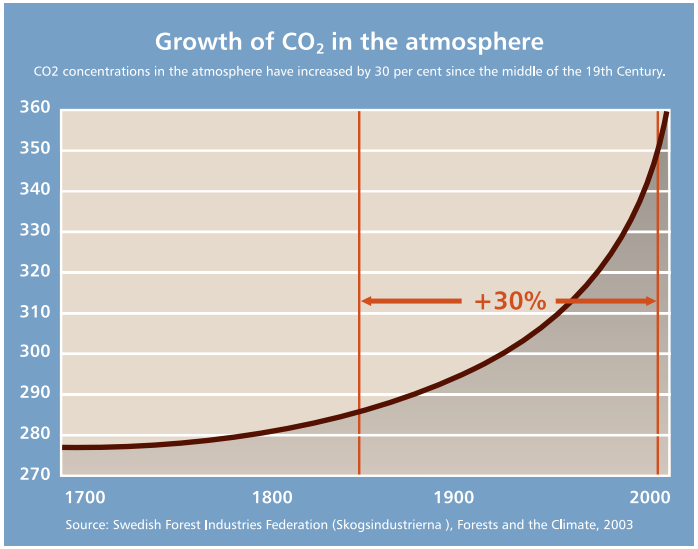
The glass panels of a greenhouse let in light and keep heat from escaping, providing warmth for the plants growing in them. A similar process occurs when the sun's energy reaches the Earth – some is absorbed by the Earth's surface, some radiates back into space, and some is trapped in the Earth's atmosphere, which keeps our planet warm enough for life to flourish. This is called the greenhouse effect.

The carbon cycle affects the amount of energy trapped in the atmosphere. Plants absorb carbon dioxide and emit oxygen during photosynthesis; oceans also absorb carbon dioxide. Humans and other animals inhale oxygen and exhale carbon dioxide. Carbon dioxide is emitted when substances decompose or burn.

Scientists agree this natural balance has been upset. The biggest human-related cause is the amount of carbon dioxide being released into the atmosphere through the burning of non-renewable fossil fuels, such as oil, natural gas or coal. Carbon dioxide accounts for more than 75 per cent of total greenhouse gas emissions annually.

Close to eight billion tonnes of carbon dioxide are emitted every year – most of this through fossil fuel combustion and deforestation in tropical regions. Some is absorbed by water bodies, some is absorbed by forests and biomass – and some is emitted into the atmosphere.

If too much carbon is emitted, it causes the atmosphere to trap more heat, warming the planet. Rising temperatures may, in turn, produce changes in weather, sea levels, and land use patterns, commonly referred to as climate change.

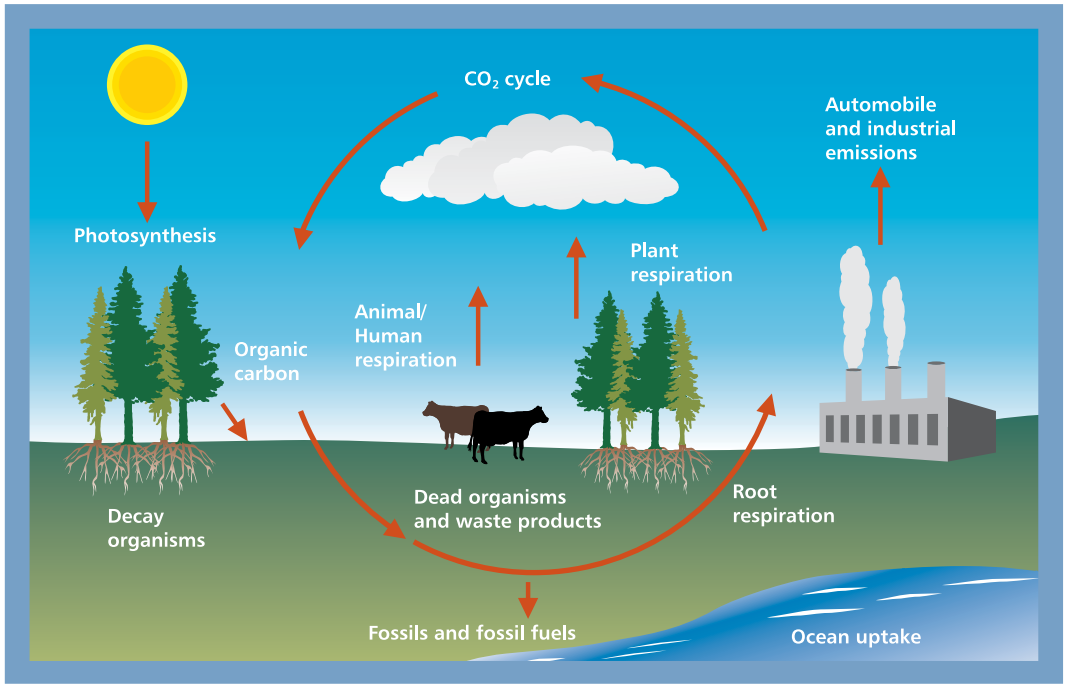


FORESTS AND THE CARBON CYCLE

Quantifying the substantial role of forests as carbon stores, as sources of carbon emissions and as carbon sinks has become one of the keys to understanding and modifying the global carbon cycle.

As trees grow, they absorb carbon dioxide and store it. When they decompose or burn, much of the stored carbon is released back into the atmosphere, mainly as carbon dioxide, and some of the carbon remains in the forest debris and soils.

In its Global Forest Resources Assessment 2005[iii], the United Nations Food and Agriculture Organization says the total carbon content of forest ecosystems for the year 2005 was more than the amount of carbon in the entire atmosphere. Roughly half of total carbon is found in forest biomass and dead wood combined, and half in soils and forest debris combined.



Carbon in Wood and Paper

Photosynthesis is a chemical process that takes place in the green leaves and needles of trees and plants. During the day, trees take in carbon dioxide and release oxygen.

A chemical reaction converts the carbon into glucose, which is a sugar the tree uses to grow. Growing trees add a new ring of wood every year made up of cellulose, hemicellulose and lignin. Wood is a complex chemical compound that is about half carbon by dry mass.

This carbon remains in the wood, even after the tree is harvested. It is released only if the tree or wood or paper product produced from that tree burns or decomposes.

Forest Adaptation | A Response to Climate Change

A general trend towards warmer conditions, combined with increasing levels of carbon dioxide, could increase forest distribution and growth in Canada. However, it could take decades, or even centuries, before forests adjust to new climatic conditions. During this period of adjustment, the forests could be more vulnerable to insects and diseases, forest fires, and competition from unwanted species.[v]

Due to uncertainties in climate models and the incomplete understanding of ecosystem processes, precise predictions of climate change impacts are not likely. This emphasizes the need to maintain or increase forest resiliency.

Long-term forest planning that considers climate change can minimize potential mismatches between species and future climatic and disturbance regimes. A strong case can be made for planned adaptation, in which future changes are anticipated and forestry practices (e.g., silviculture, harvesting, fire protection) are adjusted accordingly.

Although many of the impacts of climate change are decades away, Canada's resource managers are exploring possible adaptation strategies to reduce the vulnerability of forests.

HOW FORESTS CAN MITIGATE CLIMATE CHANGE

- Forests absorb and store carbon
- Reforestation maintains this carbon reservoir
- Carbon remains stored in wood and some paper products

To mitigate climate change, it is necessary to reduce greenhouse gas emissions and store more carbon. A healthy forest can do both.

Canada's forests represent a significant carbon reservoir, and the country's leadership in sustainable forest management ensures these forests will continue to play an important role in responding to climate change.

Managed forests are efficient carbon sinks as long as they are regenerated. Deforestation is the permanent conversion of forested land to other uses, such as agriculture or urban development. Harvesting is not considered deforestation if the area is replanted or allowed to regenerate naturally.

Half a billion seedlings are planted annually in Canada, a key reason why the country has virtually no deforestation even after more than 100 years as one of the world's leading forestry nations. Canadian law requires prompt reforestation after public lands are harvested. Across the country, organizations are also engaged in special activities to help address climate change. For example, in British Columbia, the Forests for Tomorrow program is re-establishing young forests in key areas affected by catastrophic wildfires and a mountain pine beetle infestation that have not been harvested.

Forest products such as structural lumber, furniture and some paper products store carbon for decades. A typical 2,400-square-foot wood-frame house contains 29 metric tonnes of carbon, or the equivalent of offsetting the greenhouse gas emissions produced by driving a passenger car over five years (about 12,500 litres of gasoline).[iv]

The Intergovernmental Panel on Climate Change says many climate change impacts can be reduced, delayed or avoided through mitigation, and that efforts and investments in the next 20 to 30 years will have a large impact. If action is delayed, it increases the risk of more severe climate change impacts.

Many forest-related activities can help to mitigate climate change. They include reducing deforestation globally and converting non-forested areas to forest; replacing fossil fuels with bioenergy; using more wood products instead of energy-intensive building materials; and managing forests so they absorb and store more carbon.

MANAGING FORESTS TO MITIGATE CLIMATE CHANGE

- Sustainable forest management lowers CO_2 emissions
- Harvesting in Canada releases less CO_2 than natural disturbances
- Deforestation increases greenhouse gas emissions

"Over the long term, active and sustainable management of forests, including their use as a source of wood products and biofuels, allows the greatest potential for reducing net carbon emissions."
Integrated Carbon Analysis of Forest Management Practices and Wood Substitution 2007

When a tree is cut down, 40 to 60 per cent of the carbon stays in the forest, and the rest is removed in the logs, which are converted into forest products. Some carbon is released when the forest soil is disturbed during harvesting, and the roots, branches and leaves left behind release carbon as they decompose.[vi]

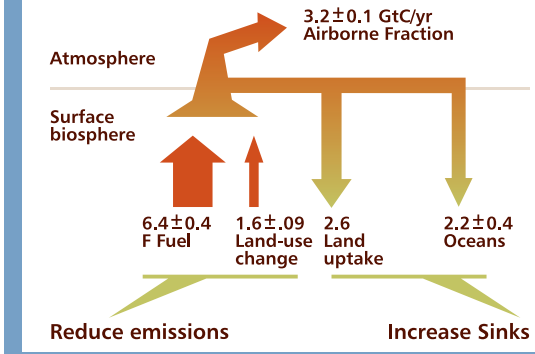
The amount of carbon dioxide released through harvesting is small compared to what is typically experienced through forest fires and other natural disturbances such as insect infestations or disease. In extreme fire years, emissions from wildfires have represented up to 45 per cent of Canada's total greenhouse gas emissions.[vii]

Once the harvested area is regenerated, either naturally or by planting seedlings, the forest begins to store carbon again. This combination of harvest and regrowth, along with the fact that most wood products have a lighter environmental footprint and store carbon for long periods of time, means that sustainable forest management practices can lower greenhouse gas emissions.

It is far better for the environment if the world's growing demand for building and paper products relies on fibre from sustainably managed forests rather than turning to products that require more fossil fuels or are from less reliable sources.

Mitigation Opportunities:

Fuel consumption and land use changes emit about 8 Gt of carbon a year, and about 3.2 Gt of this remains in the atmosphere. Forestry activities can reduce emissions and increase sinks.

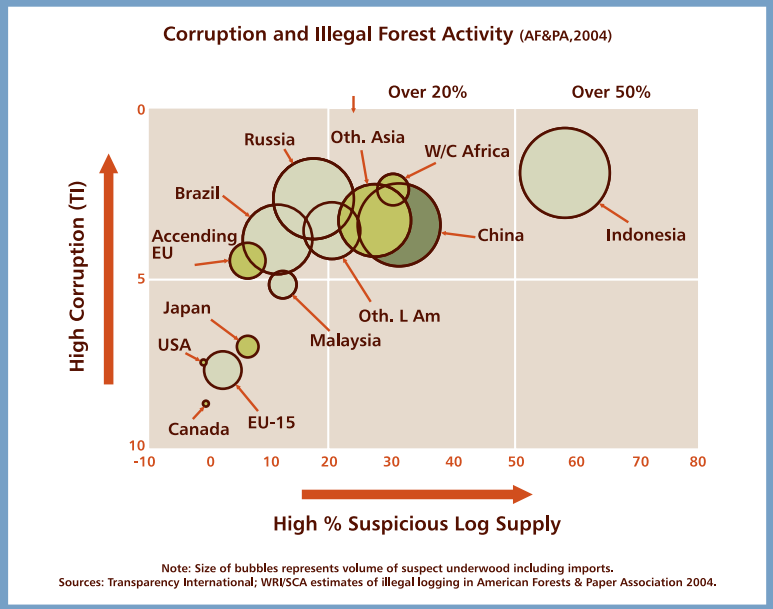


Looking for Legal Sources of Wood Fibre

Deforestation (mostly in the tropics) currently accounts for about 18 per cent of greenhouse gas emissions worldwide.[viii]

Illegal logging contributes to deforestation and habitat destruction, undermines the viability of legally harvested and traded forest products, and is a serious detriment to forest sustainability. Root causes of illegal logging include poverty, weak governance and corruption.

Illegal logging is not an issue in Canada because of its multi-faceted governance structure for sustainable forest management, which includes well-developed public policies, legislation and regulations, enforcement, regular monitoring, and public reporting. Canada is also committed to working with international organizations to find solutions to the critical international problem of illegal logging and associated trade.



SOLID WOOD AND CLIMATE CHANGE

- Wood building products are an excellent environmental choice
- Life cycle assessment confirms the benefits of wood
- Wood buildings are energy efficient, durable, adaptable

Using wood products that store carbon instead of building materials that require more fossil fuel to manufacture can help slow climate change. Trees grow with solar energy, and the little waste generated during processing is often used to meet the energy needs of the mill. At the end of their first life, forest products can be easily reused, recycled or used as a carbon neutral source of energy.

As environmental awareness grows, building professionals are finding wood is an excellent choice for green construction designs, which minimize the use of energy, water and materials, and reduce impacts on human health and the environment. Wood is a high-performance and versatile choice for any new construction or renovation.

Wood is light in weight, yet strong. It has excellent load-bearing and thermal properties, is easy to work with, and is well suited for large or small projects. Wood adds warmth and beauty to any building, enhancing the well being of occupants.

LIGHTER FOOTPRINT

Studies show wood products are associated with far less greenhouse gas emissions over their lifetime than building materials such as steel, concrete, aluminum or plastic. For example, substituting a cubic metre of wood for concrete blocks or bricks results in a significant saving of 0.75 to 1 tonne of carbon dioxide.[ix]

Numerous international scientific studies demonstrate the environmental benefits of wood.[x] A recent life cycle assessment compared the environmental impacts of homes framed with wood, steel and concrete, and found that the production of steel and concrete-framed homes generated 26 per cent and 31 per cent more greenhouse gas emissions, respectively, than their wood-framed counterparts.

The same study found that the production of the steel and concrete homes consumed 17 per cent and 16 per cent more embodied energy and released 14 per cent and 23 per cent more air pollutants respectively than a wood-framed home.[xi]

ENERGY EFFICIENT

Wood products require less energy to extract, process and transport, and wood buildings can require less energy to construct and operate over time. If less fossil fuel energy is consumed, fewer greenhouse gases are emitted.

Wood's cellular structure, with lots of tiny air pockets, improves its natural thermal efficiency, making it 400 times better than steel and 10 times better than concrete in resisting the flow of heat.[xii] Steel and concrete structures need more insulation to achieve the same thermal performance as wood framing.

In Canada, it has been calculated that the wood industry has one-three thousandth the energy intensity of the cement or steel industries per unit of gross domestic product.[xiii]

DURABLE AND ADAPTABLE

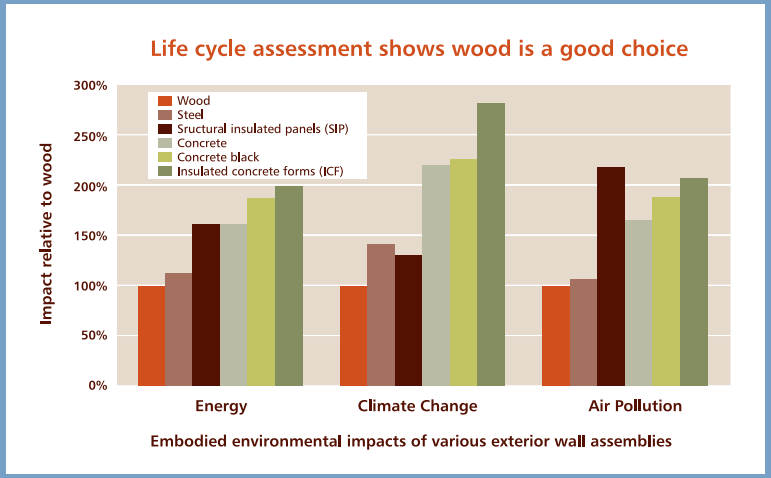
Products that last longer reduce environmental demands. Wood is durable, and wood-frame buildings can be easily adapted to meet new needs and extend their life. After decades or even centuries of use, wood can be re-used in new buildings – and this requires little or no energy.

Wood residue from the production of lumber can be re-manufactured into high-value composite products like medium density fibreboard (MDF), finger-jointed lumber and other wood-hybrid composite lumber. Wood residue is also chipped into mulch for landscaping and agricultural uses.

Life Cycle Assessment | Looking at the Complete Picture

Life cycle assessment is an internationally accepted, science-based method of quantifying a product's environmental input and output from cradle to grave. It delivers a scientific measure of the environmental impact from resource extraction and processing of the raw materials through production, distribution, and use of the product to reuse or recycling, and eventual disposal.

Life cycle assessment studies show that wood building products have a lighter environmental footprint compared with alternative materials and offer clear environmental advantages at every stage.



Source: Data complied using the Athena EcoCalculator www.athenasmi.ca

PAPER | EFFICIENT USE OF FIBRE AND ENERGY

- Today, Canada's paper industry uses less fossil fuel, emits fewer greenhouse gases, and uses fibre more efficiently
- New paper is primarily recovered fibre and sawmill residues
- The paper cycle needs recycled and fresh fibre

Paper manufacturing has long played an important role in national emission reductions by using fibre left over from the sawmilling process that once was burned or sent to landfills. Today, Canada's pulp and paper industry has improved its environmental performance by shifting its energy needs away from fossil fuels to wood chips and residues (biomass), and by using wood fibre more efficiently.

Using biomass fuels instead of fossil fuels recycles carbon rather than introducing geologic carbon to the atmosphere – helping to reduce the build-up of carbon dioxide.[xiv]

As a result, 60 per cent of the industry's energy requirements are met by renewable resources. The industry emits 45 per cent fewer greenhouse gases now than it did 15 years ago. It also reduced its landfill wastes by nearly 40 per cent between 1996 and 2001.

The industry's $8-billion investment in environmental improvements since 1990 has resulted in a 93 per cent reduction in harmful toxins and a 62 per cent reduction in particulate emissions from mills.

RECYCLED CONTENT

Used paper and paperboard products make up the largest single category of material disposed of in North American municipal landfills, and when these materials decay they can release methane, an even more potent greenhouse gas than carbon dioxide. Canada's paper industry has invested significantly in paper recovery, diverting used paper from landfills.

In 2003, members of the Forest Products Association of Canada announced their support for an increase in recovery rates in Canada to 55 per cent by 2010. This target has been surpassed, and the 2007 recovery rate is estimated to be 58 per cent.[xv]

Today, almost one third of Canada's fibre supply for new paper comes from recovered paper, and about 85 per cent of the fibre used to make new paper and paperboard comes from a combination of sawmill residues and recycled paper.[xvi] Many Canadian companies deliver new paper to customers in the United States, and bring back waste paper in the same trucks.

THE NEED FOR FRESH FIBRE

North America's paper fibre cycle depends on fresh fibre from well-managed forests and a strong recovery network that values and collects discarded paper products for reuse.

A project conducted by Metafore[xvii], a non-profit group that works with business, government and other leaders to advance environmental goals, found that without fresh fibre from sawmill residues and harvesting, paper supplies for magazines would disappear in weeks, and supplies for newspapers and cardboard boxes would disappear in months.

In part, that's because recycled fibre breaks down with each use and 15 per cent of paper products, such as tissues and books or documents stored for extended periods, simply cannot be recycled. On top of this, some paper that could be recycled still escapes recovery.[xviii]

While recycled paper is generally an excellent environmental choice, buyers need to consider how far the waste paper was transported and the type of processing needed – and compare this with requirements to harvest and process fresh fibre.

Recovered paper used for products such as newsprint and kraft bags that do not need to be bright has a lower environmental impact because it requires less processing and cleaning. With brighter paper grades, there is a point where using more recovered fibre can actually diminish environmental returns because of the additional processing required.

LIGHTER-WEIGHT PAPERS

A new trend in "light-weighted" paper is helping to reduce production and delivery costs, transportation emissions and the amount of fibre needed. If paper for products such as newspapers weighs less without losing any printing quality, the result is an end product that costs less to ship and takes less space to transport and store – which in turn lightens its environmental impact.

Innovations in paper and cardboard production have resulted in creative, flexible and environmentally sensitive options for everything from furniture to consumer packaging.

NON-WOOD FIBRES

It is technically possible to make paper from almost any kind of fibre. In some cases, especially when fibre comes from dedicated fibre crops, the environmental impacts are often greater than harvesting trees. Research results from around the world show products such as kenaf and hemp require regular application of fertilizer and various chemicals, and sometimes irrigation, similar to other forms of high-yield agriculture.[xix]

Non-wood fibres are not commonly used to make paper in Canada because wood is plentiful and agricultural residues have higher-value uses such as livestock fodder. There are environmental issues related to the use of straw pulps, and they are inferior to wood pulps for strength.

BIOENERGY AND CLIMATE CHANGE

- Bioenergy has no net greenhouse gas emissions
- Wood is a clean, renewable energy source
- Canada's forest sector uses biomass energy

Wood was the world's main source of energy until the mid-1800s, and continues to be a major source of energy in much of the developing world. More recently, industrialized nations are again viewing wood as a source of bioenergy.

Bioenergy is clean renewable energy derived from biomass that can include forest harvesting and sawmill residues, agricultural residues, urban and industrial organic waste, or dedicated energy crops. It is an environmentally friendly and sustainable alternative to traditional energy. Bioenergy has no net greenhouse gas emission because the carbon dioxide produced is recycled by plants, which absorb it for photosynthesis and cellular respiration.[xx]

Biomass can be used to produce heat and electricity, liquid and gaseous fuels (such as ethanol from grain and cellulose, biodiesel from oilseed and waste greases and biogas from anaerobic digestion), solid fuels (pellets and briquettes), and other products.

Cellulose fibres are an excellent choice for heat and electricity because they have higher energy efficiency than conventional agricultural feedstocks. The advantages of wood over other sources of biomass include a longer storage life and lower storage costs; higher bulk density (lower transport costs); less intensive use of water and fertilizers; and an established collection system.

Using biomass from wood and forest residues is a better choice for biomass than using agricultural crops for fuel. A declaration issued after the United Nations Food and Agriculture Organization summit on soaring food prices in 2008[xxi] said it is essential to address the challenges and opportunities posed by biofuels, in view of the world's food security, energy and sustainable development needs.

Canada's pulp and paper sector currently meets 60 per cent of its energy demands with biomass derived from forest industry byproducts such as bark, wood shavings and sawdust. The Canadian forest sector has cut its reliance on fossil fuels by more than half through the reuse of wood chips and residues as biomass energy and is a leader in the reduction of greenhouse gas emissions.

CANADA'S FORESTS AND CLIMATE CHANGE

- Canada enforces its tough forest laws
- Canada is a world leader in third-party forest certification
- Canada has 91% of its original forest area

Canada has 10 per cent of the world's total forest cover, which means the country plays an important role in mitigating climate change.

The Canadian forest industry operates under some of the toughest environmental laws and regulations in the world, backed by comprehensive compliance and enforcement. An independent study by an associate professor from Yale University in 2004 found that Canada's forest practice regulations are among the most stringent in the world.[xxii]

Canada has more forestland protected from harvesting than any other country. Less than one per cent of Canada's managed forest is harvested each year, and areas that are logged must be promptly regenerated.

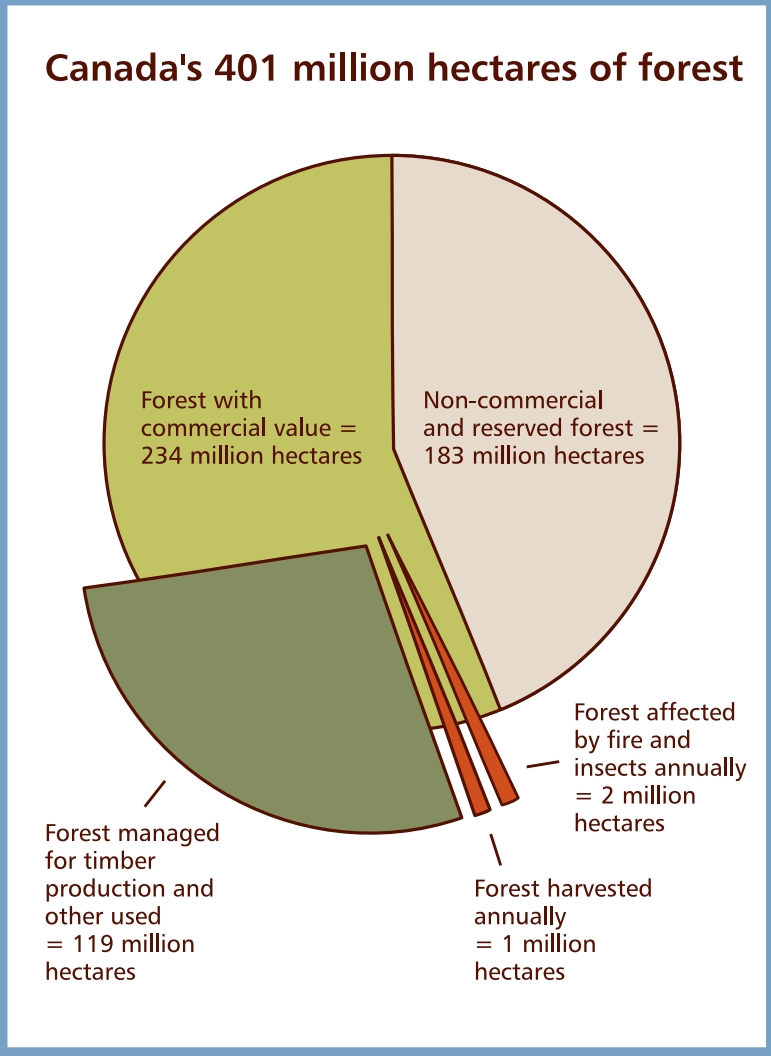
Deforestation in developing countries accounts for about 18 per cent of annual global greenhouse gas emissions, or almost eight billion tonnes of carbon dioxide a year.[xxiii] Canada has 91 per cent of its original forest cover, more than any other country, and its rate of deforestation has been virtually zero for more than 20 years.[xxiv]

Third-party forest certification is an excellent tool to verify that forest products are from legal, sustainable sources. Canada is a world leader in the independent certification of forest management and practices, and has more certified lands than any other country. At a time when just 10 per cent of the world's forests are certified, Canada is home to more than 40 per cent of all certified lands.

The three independent forest certification programs used in Canada – the Canadian Standards Association's (CSA) Sustainable Forest Management Standard, the Forest Stewardship Council (FSC) and the Sustainable Forestry Initiative (SFI) – all offer assurance that harvested areas are reforested, that laws are obeyed and that there is no unauthorized or illegal logging.

In Canada, 97 per cent of the fibre removed from the forest is used for the highest-value products possible. The first choice is lumber and other wood products, however, fibre is also used as chips to make composite products and paper, and as sawdust for bioenergy.[xxv]

Canada's forest products sector invests in research and development to improve forest management practices, production and processing technology, paper manufacturing, and construction techniques. It has reduced energy consumption in harvesting and transportation through more efficient material handling and fuel reduction measures.



A Carbon-neutral Canadian Forest Industry by 2015

Canada's forest products industry aims to be carbon neutral by 2015, without having to buy carbon offset credits. To achieve this commitment, it will:

1. **Reduce direct and indirect emissions through activities such as switching to a renewable energy source (e.g. biomass) increasing cogeneration opportunities, adopting energy-efficient technologies and finding ways to divert forest products from landfills.**
2. **Increase sequestration in forests through landscape planning and innovative silvicultural practices.**
3. **Increase the pool of carbon stored in the value chain and minimize emissions from end-of-life disposal through recovery and recycling of paper and wood products.**
4. **Promote an understanding of the carbon implications of wood-based materials in relation to available substitutes.**[xxvi]

HOW TO BE PART OF THE SOLUTION

"Forestry practices can make a significant contribution by reducing greenhouse gas emissions through increasing the amount of carbon removed from the atmosphere by the national forest estate, by burning wood for fuel, and by using wood as a substitute for energy-intensive materials such as concrete and steel." Securing the Future – United Kingdom government strategy for sustainable development 2005

When it comes to mitigating climate change, the world's forests are part of the solution. Government and business leaders can help by developing policies and procurement processes that encourage the use of more forest products from well-managed forests.

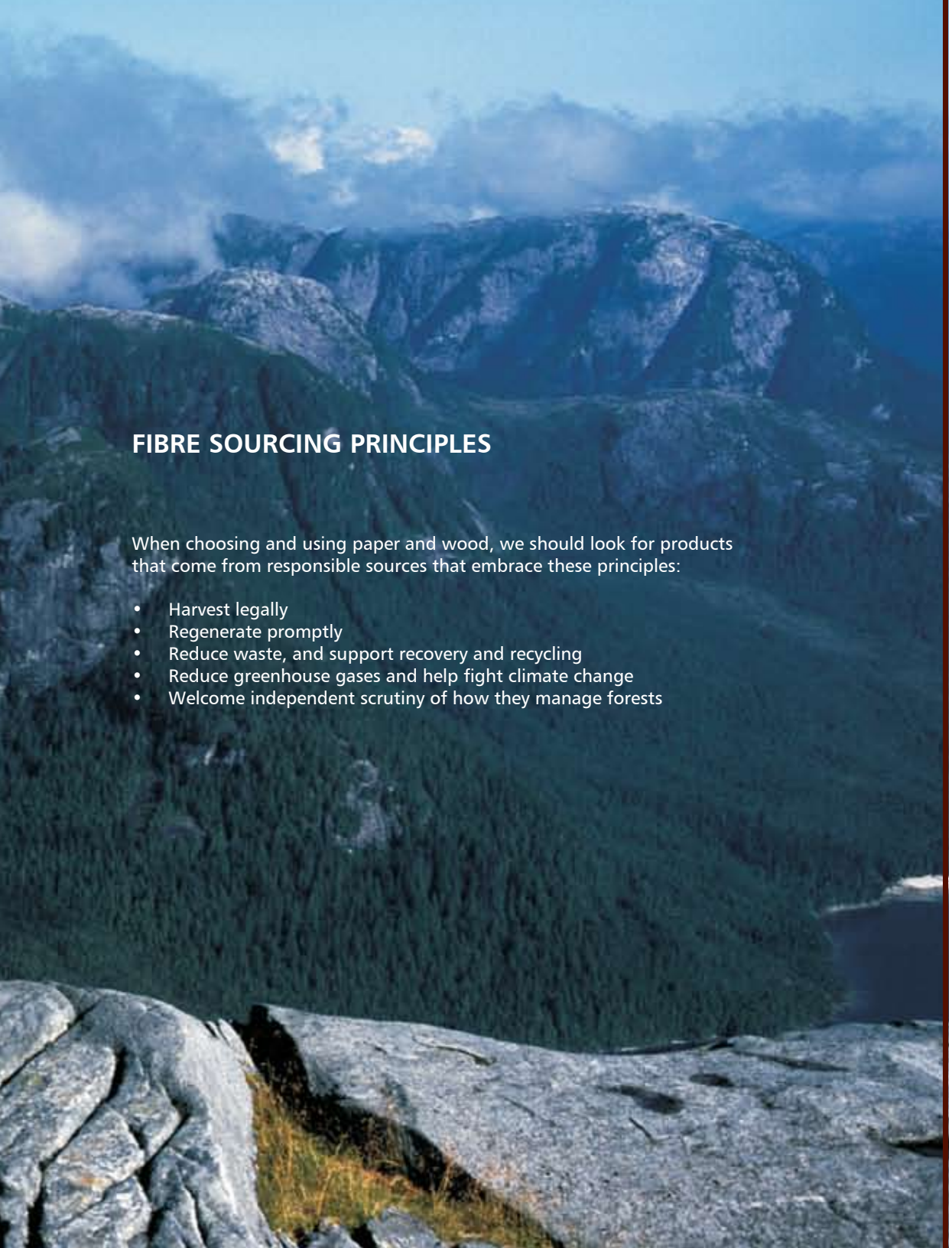
Many jurisdictions are taking action already:

- In many European countries, legislation aimed at reducing greenhouse gas emissions often leads to increased use of wood, or consideration of wood as a preferred building material. Changes in national building regulations are encouraging multi-storey wood buildings – a nine-storey all-wood apartment building currently under construction in England will be the world's tallest wood residential structure.
- In France, the government requires that new public buildings must have at least 0.2 cubic metres of wood for every one square metre of floor area. This encourages designers to identify opportunities to use wood as a structural material as well as for floors, doors, moulding or other design features.
- As part of its promotion of a carbon-neutral public service, the government of New Zealand is requiring that wood or wood-based products be considered as the main structural materials for new government-funded buildings up to four storeys.
- In Canada, the governments of British Columbia and Quebec are moving to policies that will encourage the use of wood in public buildings.
- Members of the European Union have agreed on a binding target to reach a 20 per cent share of renewable energy sources (i.e., biomass, biogas, wind, solar, hydro and geothermal energy) in their total energy output by 2020.

How companies respond to issues related to climate change is an indication of their commitment to corporate social responsibility. Many major companies have procurement policies with a preference for forest products certified to the three independent certification programs used in Canada. Increasing consumer demand for certified wood and paper products is being addressed by growth in chain-of-custody certification, which tracks fibre from a certified forest to the end user.

The Chicago Climate Exchange has endorsed independent certification as evidence of sustainable forest management. The exchange integrates voluntary, legally binding emissions reductions with emissions trading and offset projects for greenhouse gases, including carbon dioxide. Projects eligible for forest carbon sequestration include afforestation and forest enrichment, urban tree planting, and in specified regions, combined afforestation and forest conservation projects.

Resource managers are taking climate change into account in their forest planning activities, selecting species that increase the resilience of the forest and are more likely to survive in future climates.



FIBRE SOURCING PRINCIPLES

When choosing and using paper and wood, we should look for products that come from responsible sources that embrace these principles:

- Harvest legally
- Regenerate promptly
- Reduce waste, and support recovery and recycling
- Reduce greenhouse gases and help fight climate change
- Welcome independent scrutiny of how they manage forests

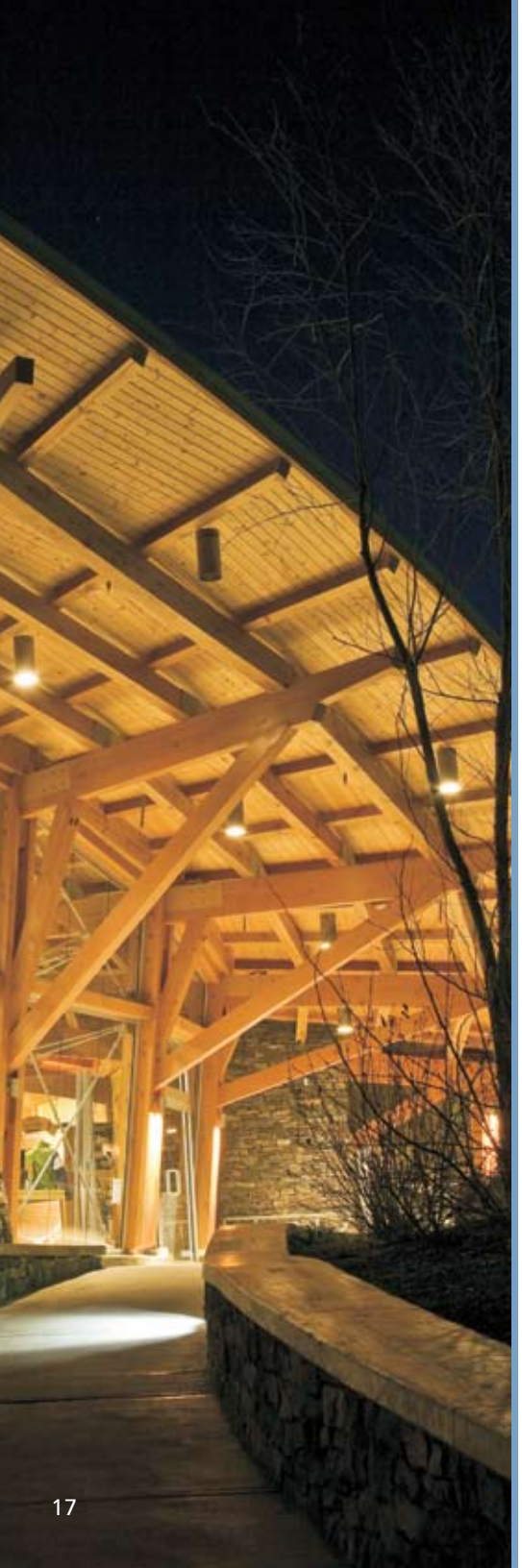
SUMMARY

Today more than ever before, we must find ways to reduce the pressure on our planet's environment and finite resources. By choosing products with a light carbon footprint and by reducing waste, we can have a real impact on climate change now, and into the future.

The need for action is especially urgent as the world's population grows and the standard of living rises in many regions. We must act before the concentration of carbon dioxide in the atmosphere causes irreversible climate-related changes that lead to water shortages, reduced crop yields and extinction of more plant and animal species.

While many of the solutions are difficult, an easy one is to find more ways to use wood and paper products we know come from legal, responsible sources.

Canada is uniquely positioned to meet the world's demand for products from sustainably managed forests. Our forest industry regenerates harvested areas, it is committed to legal logging, it invites outside scrutiny of its practices and it is committed to carbon neutrality across the value chain. Canada's forest sector has already reduced its climate change footprint substantially over the last 15 years, surpassing its Kyoto target by five times.



GLOSSARY

ADAPTATION Adjustment in natural or human systems to a new or changing environment. Adaptation to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

BIOENERGY Useful, renewable energy produced from organic matter. The conversion of the complex carbohydrates in organic matter to energy. Organic matter may either be used directly as a fuel or processed into liquids and gases.

BIOFUEL A fuel produced from dry organic matter or combustible oils produced by plants. Examples include wood, black liquor from the paper manufacturing process, alcohol (from fermented sugar), and soybean oil.

BIOMASS Organic matter available on a renewable basis, including forest and mill residues, wood and wood wastes, agricultural crops and wastes, and municipal and industrial wastes.

CARBON CYCLE The term used to describe the exchange of carbon (in various forms e.g. as carbon dioxide) between the atmosphere, ocean, terrestrial biosphere and geological deposits.

CARBON NEUTRAL Being carbon neutral means calculating a total carbon footprint, and balancing emissions with sequestration to achieve a zero net carbon impact.

CARBON SINKS Elements in the carbon cycle able to capture carbon dioxide and reduce its concentration in the atmosphere. Forests are a carbon sink – they take in carbon dioxide and convert it to wood, leaves and roots. They are also a carbon source – they release stored carbon into the atmosphere when they decompose or burn.

CARBON SEQUESTRATION The ability of forests or other natural systems to store carbon, thereby preventing it from collecting in the atmosphere as carbon dioxide. Forests absorb carbon when they break down carbon dioxide during photosynthesis.

CLIMATE CHANGE A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.

DEFORESTATION Permanent conversion to non-forest uses such as agriculture or urban development.

EMBODIED ENERGY All of the energy, direct and indirect, required through the life of a product, from extraction to disposal.

ENERGY EFFICIENCY Ratio of energy output of a conversion process or of a system to its energy input.

GREEN BUILDING Choosing products and building designs that make structures more resource efficient and reduce their impact on human health and the environment through location, construction, operation, repair and maintenance, renovation and final deconstruction, demolition or removal.

LIFE CYCLE ASSESSMENT (LCA) A science-based process that examines the potential environmental impact throughout the life of a given product or service from resource extraction through to product manufacturing, operation and use, and eventual reuse or disposal. It is frequently used to assess building products and assemblies.

MITIGATION An anthropogenic intervention to reduce the sources or enhance the sinks of greenhouse gases.

RESERVOIR A component of the climate system, other than the atmosphere, which has the capacity to store, accumulate or release a substance of concern, e.g., carbon dioxide or other greenhouse gases. Oceans, soils, and forests are examples of reservoirs of carbon.

SUSTAINABLE FOREST MANAGEMENT Management that maintains and enhances the long-term health of forest ecosystems for the benefit of all living things while providing environmental, economic, social and cultural opportunities for present and future generations.

END NOTES

[i] Climate Change 2007: Mitigation of Climate Change (Chapter 9). Intergovernmental Panel on Climate Change, Fourth Assessment Report Working Group III www.ipcc.ch/ipccreports/ar4-wg3.htm

[ii] Climate Change 2007. Intergovernmental Panel on Climate Change, Fourth Assessment Report www.ipcc.ch/

[iii] Global Forest Resources Assessment 2005 (FRA 2005). Food and Agriculture Organization of the United Nations. www.fao.org/forestry/fra2005

[iv] Wood and Climate Change. FPInnovations, 2008

[v] Climate Change Overview. Environment Canada www.ec.gc.ca/climate/overview_science-e.html

[vi] Does harvesting in Canada's forests contribute to climate change? Canadian Forest Service 2007 http://cfs.nrcan.gc.ca/news/473

[vii] Does harvesting in Canada's forests contribute to climate change? Canadian Forest Service 2007 http://cfs.nrcan.gc.ca/news/473

[viii] Navigating the numbers: Greenhouse gas data and international climate policy - Part II. K. Baumert, T. Herzog and J. Persing, World Resources Institute, 2005; and Carbon dioxide emissions by source 2005, World Resources Institute.

[ix] Using Wood Products to Mitigate Climate Change, 2004. International Institute for Environment and Development.

[x] A Synthesis of Research on Wood Products and Greenhouse Gas Impacts, FPInnovations, 2008

[xi] Life Cycle Environmental Performance of Renewable Materials in the Context of Residential Building Construction. Bowyer, J., Briggs, D., Lippke, B., Perez-Garcia, J., and Wilson, J. Consortium for Research on Renewable Industrial Materials (CORRIM) 2005

[xii] Embodied Energy of Wood Products. Canadian Wood Council. http://www.cwc.ca/NR/rdonlyres/FD8693D4-C735-44CA-959C-178D43FE092A/0/Quickfacts_Sustainable_Building_Series_05.pdf

[xiii] Natural Resources Canada. Office of Energy Efficiency. http://oee.rncan.gc.ca/industrial/opportunities/sectors/wood.cfm?attr=12

[xiv] Clearing the Air About Biomass Carbon Neutrality. Reid Miner. Paper 360°. March 2007 http://findarticles.com/p/articles/mi_m1AHU/is_3_2/ai_n25003935?tag=artBody;col1

[xv] Pulp and Paper Products Council

[xvi] Forest Products Association of Canada.

[xvii] Metafore. Paper Fiber Life Cycle Project. 2006 http://www.metafore.org/index.php?p=Metafore_Paper_Fiber_Life_Cycle&s=570

[xviii] Metafore. Paper Fiber Cycle Life Project. 2006 http://www.metafore.org/index.php?p=Metafore_Paper_Fiber_Life_Cycle&s=570

[xix] Tree-Free Paper: When is it Good for the Environment? Dr. Jim Bowyer. Dovetail Partners. 2004 www.dovetailinc.org/DovetailTreeFreePaper.html

[xx] BioBasics. Natural Resources Canada. 2006 http://biobasics.gc.ca/english/View.asp?x=796

[xxi] A Food Summit. Food and Agriculture Organization of the United Nations. www.fao.org/newsroom/en/news/2008/1000856/index.html

[xxii] Comparing British Columbia with the World. Forestry Innovation Investment Market Outreach Network. 2004. www.bcforestinformation.com/publications/documents/FSA-037-E.pdf

[xxiii] Navigating the numbers: Greenhouse gas data and international climate policy - Part II. K. Baumert, T. Herzog and J. Persing, World Resources Institute, 2005; and Carbon dioxide emissions by source 2005, World Resources Institute.

[xxiv] UN Food and Agriculture Organization. Advisory Committee on Wood and Paper Products. 2003. www.fao.org/docrep/006/Y4829E/y4829e00.htm#TopOfPage

[xxv] Metafore Paper Fibre Life Cycle Project. The Fibre Cycle in Canada and the U.S. 2006. http://www.metafore.org/downloads/fiber_cycle_communications_deck.pdf

[xxvi] Canadian Forest Products Industry Aims to be First Carbon-Neutral Sector. Forest Products Association of Canada. 2007 www.fpac.ca/en/media_centre/press_releases/2007/2007-10-30_carbonNeutral.php

BC Forestry Climate Change Working Group

Canada Wood
Produits de bois canadien

Forest Products Association of Canada
fpac.ca

Association des produits forestiers du Canada
fpac.ca

naturallywood.com

Published: October 2009