

Canada's Forest Sector and the Role of Natural Resources Canada

Canadian Forest Service

April 2014



Natural Resources
Canada

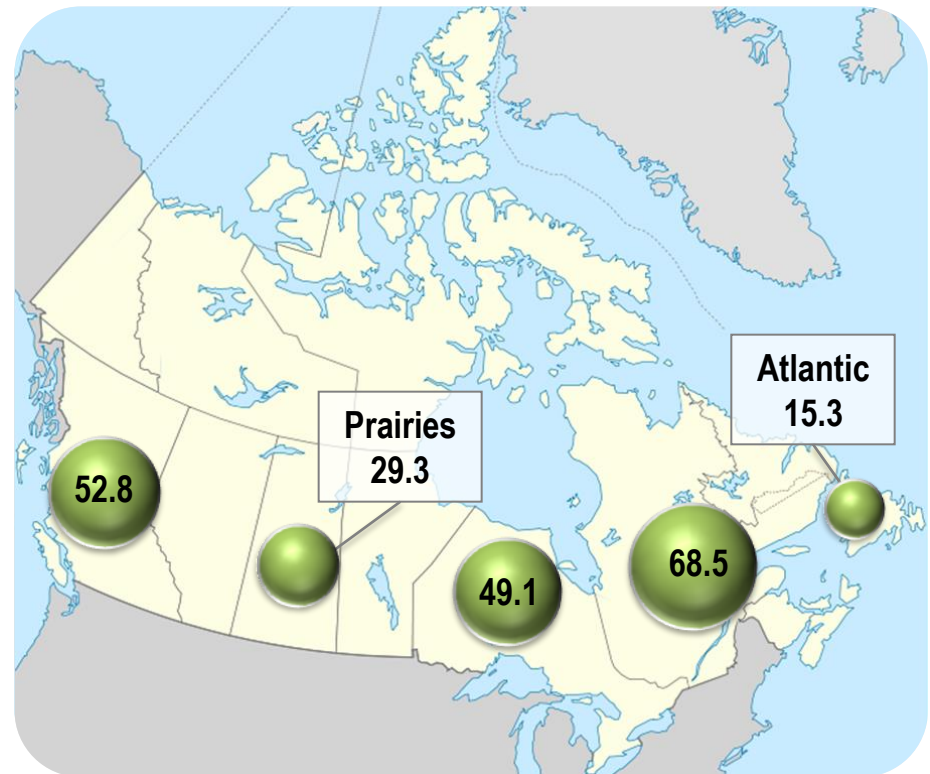
Ressources naturelles
Canada

Canada 

Canada – A Forest Nation

- 10% of the world's forest cover
- major economic contributor (\$19.7B to GDP or 1.25%)
- 215,000 jobs and 200 forest-dependent communities
- Significant Aboriginal employer (11,000)
- Global leader in sustainable forest management

Forest sector jobs across Canada in 2013 (thousands of jobs).



In recent years, the forest sector has faced significant pressures...

- Structural changes
 - Appreciating dollar
 - Collapsing newsprint demand
 - Heavy competition
- Cyclical forces
 - Collapse of US housing market
 - Global recession
 - Pests: mountain pine beetle, spruce budworm
- Softwood Lumber Agreement arbitrations

8 major Canadian forest companies filed for creditor protection

>150 mill closures in the past 4 years

>130,000 jobs lost since 2003 peak



...it responded to these pressures with:

- Aggressive consolidation and cost cutting
- Targeting emerging markets
- Attracting foreign capital
- Shift to non-traditional products

Today, conditions have improved:

>\$600 M in foreign investment has re-opened 7 closed paper mills

8/10 largest publicly traded companies had net profits in Q3-2013

Major softwood lumber companies showing strong profits

Canadian leadership in a number of technology areas

But further transformation is needed...



NRCan role in the forest sector

FEDERAL RESPONSIBILITIES

- International trade/relations
- Softwood Lumber Agreement
- National policy/regulatory framework
- Aboriginal affairs
- Management of federal lands
- National reporting

PROVINCES & TERRITORIES

- Own and manage 77% of Canada's forests
- Develop legislation, regulations and policies
- Allocate timber licenses
- Collect stumpage fees
- Collect data

SHARED RESPONSIBILITIES

- Science and technology
- Environmental regulation



Canadian Forest Service (CFS)...

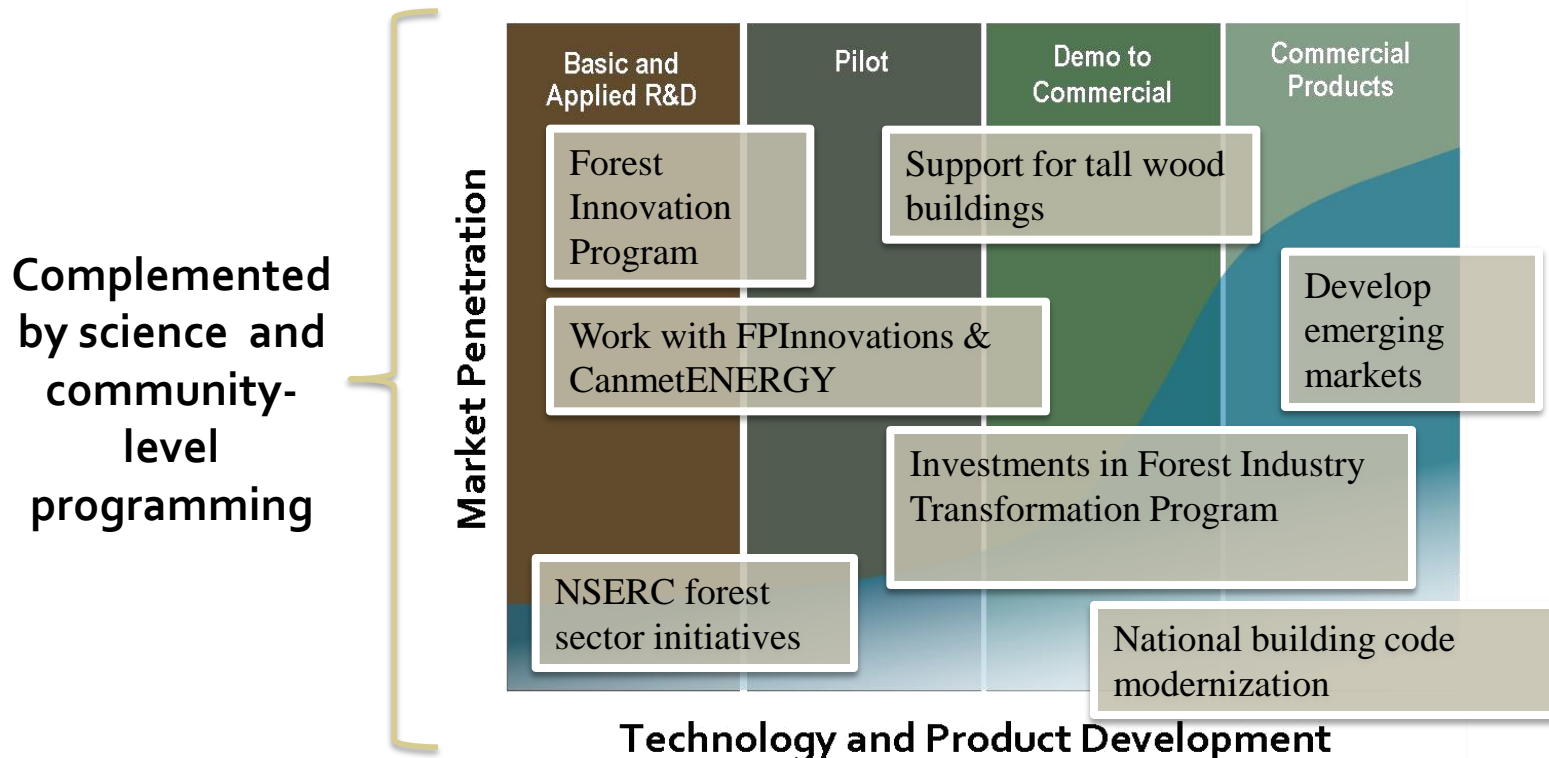
- Federal expert on forests/forest sector
- Strategic priorities:
 1. Enhancing forest sector competitiveness
 2. Optimizing forest value
 3. Advancing environmental leadership

Vision: An innovative, globally competitive forest sector rooted in sustainable forests creating prosperity for Canadians.



Provides thought leadership and delivers programs in support of the sector

Federal investments in support of transformation total \$1.8 billion since 2006



Supports innovation

Advances R&D and technology transfer activities along the forest sector value chain.

CFS' innovation program received an additional \$61 M in Budget 2013 (funding to 2016-2017).

Achievements:

- Pre-commercial R&D and demonstration
- Upstream, forest-level research in support of forest sector competitiveness
- Developing standards for emerging products
- Key partner: **FPI**innovations 



Transformative Technologies Program

- Transformative technology research: through partnership with FPInnovations
 - Next Generation Building Solutions
 - Bio-Products Development
 - Integrated Value Maximization
- Pilot scale demonstration plants



Next Generation Building Solutions

Applying new technologies, engineering and design to traditional and emerging wood-based materials to create sustainable building solutions for residential and non-residential uses.



Bioproduct development

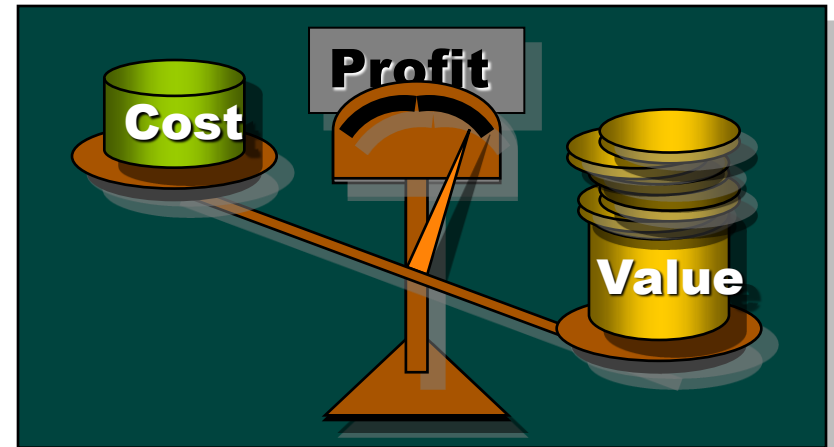
Exploring economically feasible methods of gathering forest biomass and converting it to new products such as fuels and chemicals.

- Development of new Bioproducts including forest-based biomaterials, biochemicals and biocomposites



Integrated Value Maximization

- Promoting the use of fibre for its greatest possible value and the lowest possible cost
 - Develop advanced capabilities to characterize the resource,
 - Apply advanced information techniques to precision forestry and transportation logistics
 - Implement emerging flexible manufacturing technologies which are all linked to new knowledge of markets and attributes



Pilot Scale Demonstrations

- Moving research from laboratory to pilot scale testing
 - Development of nanocrystalline cellulose (NCC) - first pilot plant facility
 - Extraction & conversion of lignin - pilot unit in operation



Helps commercializes promising technologies

IFIT supports first-in-kind implementations of emerging technologies in the forest sector

Budget 2014 renewed the Investments in Forest Industry Transformation program (IFIT) with \$90.4 M (2014-18).

Key achievements:

- Proposals worth more than \$2B received (\$100 M program envelope)
- 9 projects announced with program contributions totalling \$44 million



Expands market opportunities

Increases market opportunities for industry in offshore and North American markets.

CFS' markets program received an additional \$31 M in Budget 2013 (funding to 2016-2017).

Achievements:

- > 1000% increase in exports to China since 2007
- Chinese eco-cities
- Tall (>10 storey) wood buildings
- Changes to provincial building codes
- Market access/environmental reputation



Offshore Markets

- International Representation
- Technical support
- Branding
- Demonstration Projects
 - Cost-shared with Industry/Provinces
 - Delivery through wood product associations
 - Activities undertaken in Europe, China, South Korea, Japan, India Middle East and other markets



Canada Wood
Produits de bois canadien
カナダウッド



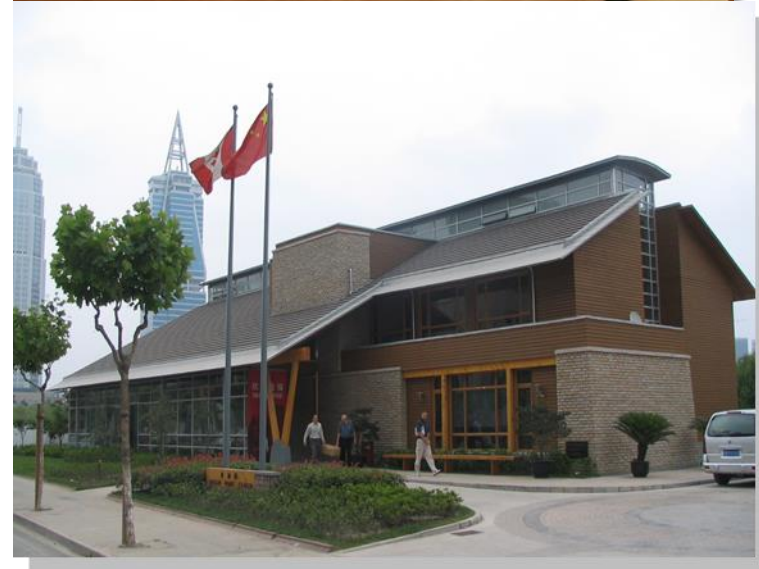
Natural Resources
Canada

Ressources naturelles
Canada

Canada

International Representation

- Network of Canada Wood offices in Asia (Beijing, Shanghai, Tokyo, Seoul), Europe (London, Toulouse) and joint Canada/B.C. office in Mumbai, India
- Staff of locally engaged and Canadian experts



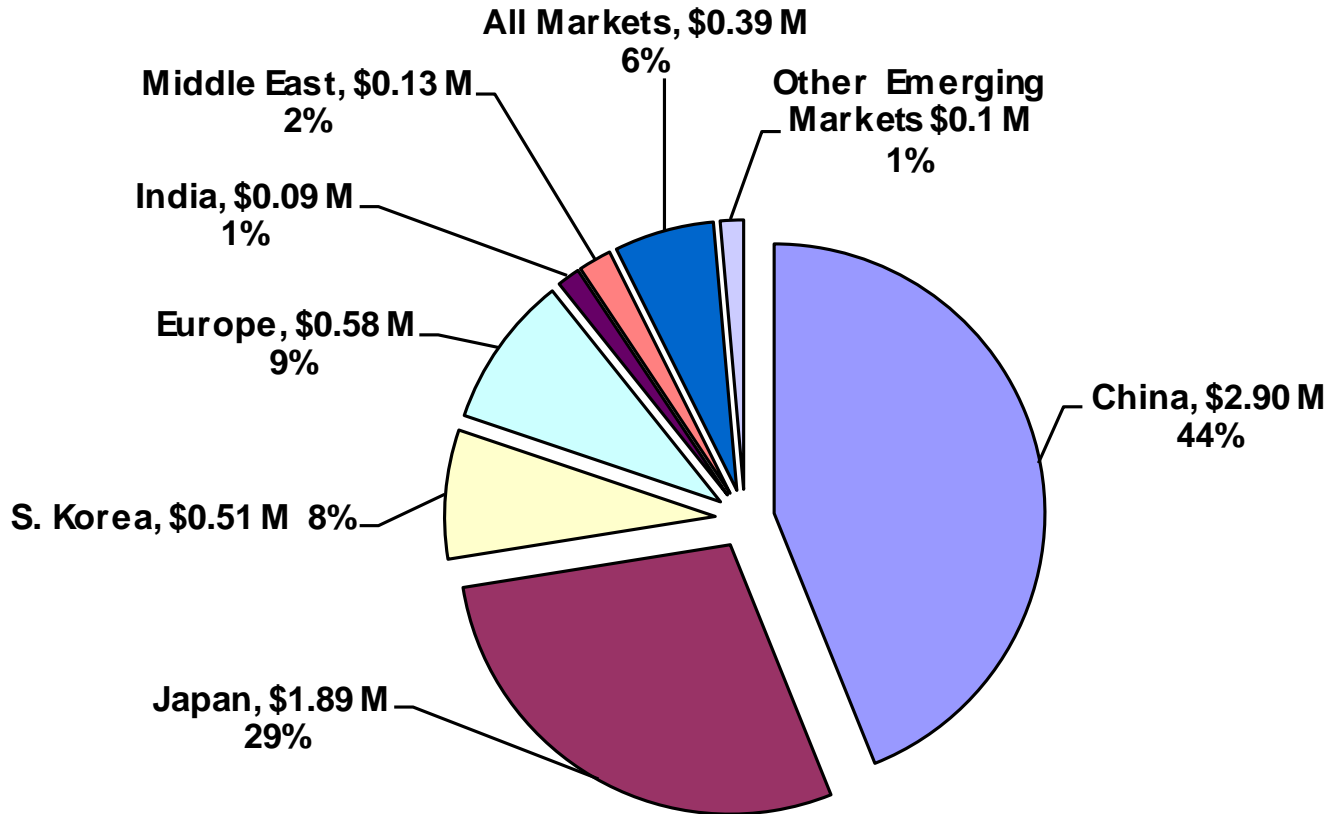
Branding

- Unified approach at promoting the advantages of Canadian wood species at trade shows, trade missions, brochures
- Support market studies – housing cost studies, potential for various products in various markets



Distribution of Funds

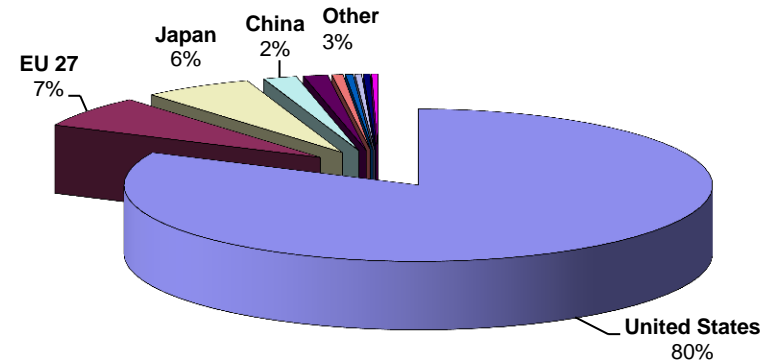
Funding by Market for 2014/15



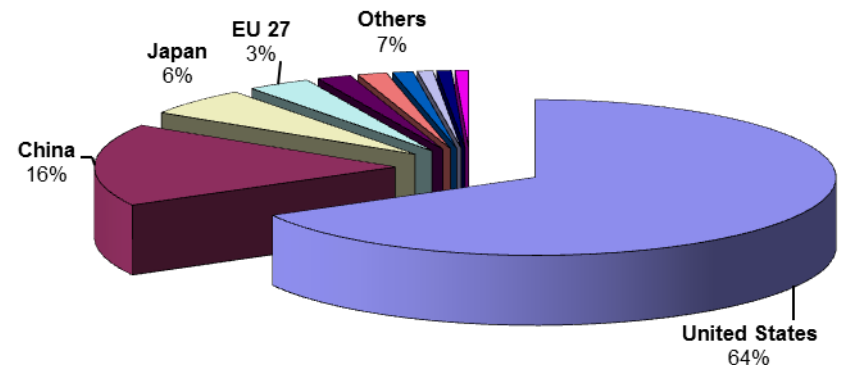
Diversification Results

- Expansion into foreign markets
 - Significant progress made in diversifying away from dependence on US market

Forest Product Exports - 2002



Forest Product Exports - 2013



Expanding Market Opportunities

North American Component

- Focus on non-residential / mid-rise opportunities for wood
 - Wood *WORKS!* Program in Canada and the U.S.
 - Changes to the National Building Code of Canada (2015)
- Tall Wood Buildings Initiative



North American Potential for Wood in Tall Wood, Wood in Mid-Rise Construction and Bridges

- Current use:
 - U.S. 1.2 billion board feet equivalent (bbfe)
 - Canada: 0.5 billion bbfe
- NA maximal potential for wood in tall, mid-rise, non-residential and bridges adds up to 12 bbf/year
 - Bridges: 2 – 5 bbfe/year
 - Tall Wood, mid-rise and non-residential: 3.9 – 7.3 bbfe/year
- NA Realistic goal: an additional 1.5 – 2.0 bbfe/year (assumes a very conservative 15 - 20% market penetration rate)



6 Storey CLT Condominium



Natural Resources
Canada

Ressources naturelles
Canada

Photo Credit: Nordic Structures Bois

Canada

Timber bridge



Greater Use of Wood – Non Residential and Mid-Rise

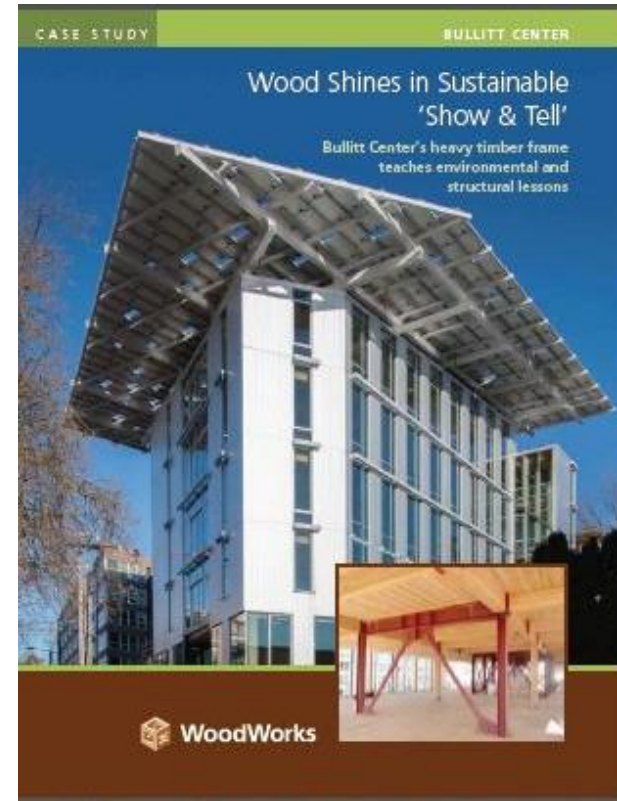
■ Activities:

- Network of 44 technical advisors providing assistance to builders, architects and engineers
- Educational and promotional events including Wood Solutions Fairs
- Technical guides and case studies
- Technical Field Tours



Key Achievements – Canada and U.S.

- Since 2007 more than 1,483 projects influenced - wood value of \$595 million
- Estimated ROI of 22:1 – US
32:1 - Can
- 2013/14 (first 8 months results)
 - 197 projects influenced for \$82 million wood value
 - Provided nearly 43,000 education hours to architects and engineers
 - 7 Wood Solutions Fairs – 3,544 participants
 - Webinars: nearly 7,000 participants



Building Codes Revisions

- British Columbia
 - April 2009, residential construction up to six storeys
 - 250 buildings built, under construction or at the design stage (40 buildings completed)
- Quebec
 - Wood Charter in April 2013 – Amendment to allow up to 6 storeys
- Ontario
 - March 20th 2014, announced early adoption of the 2015 NBCC
- Canada - 2015 NBCC up to six storeys buildings
 - Public consultations completed
 - Spring 2014: Standing Committee reviews and address public comments
 - Fall 2014: Review and approval by Canadian Commission on Building and Fire Codes



Guide for Tall Wood Buildings

- FPInnovations led technical document – World First
- Collaboration of 80 experts
- Intended for experience design and construction teams
- 400 + pages of technical drawings and details



Tall Wood Buildings Initiative

- Negotiations underway with the proponents
- Completion by 2017



Annexes

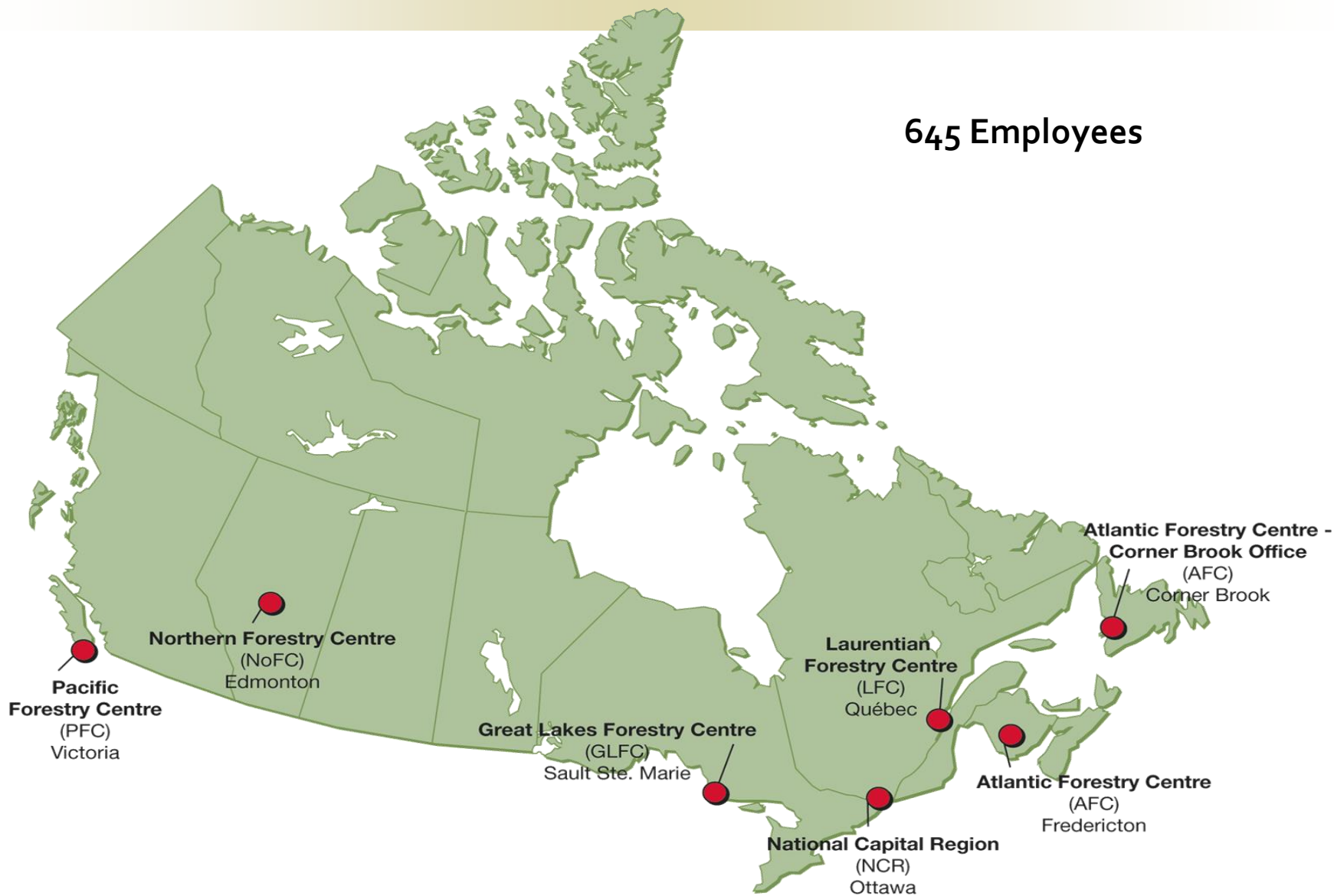


Natural Resources
Canada

Ressources naturelles
Canada

Canada

Annex 1: CFS across Canada



Annex 2: Key Canadian forest products:

(value of exports in 2013)

Softwood Lumber (\$7.4 billion - #1 in the World)

- Suffered severe slowdown due to US housing bust
- Prices are now high, industry is very profitable, outlook is strong

Newsprint and writing papers (\$5 billion)

- Rise of electronic media continues to devastate the sector

Northern Bleached Softwood Kraft Pulp (\$3.9 billion - #1 in the World)

- Near peak of pricing cycle
- Medium and long term outlooks are good

Bioenergy and Bioproducts (Emerging sector)

- Wood Pellets, largely to EU, are our largest bioenergy export (\$260 million)
- Other biochemicals/biomaterials currently in development (Canada world leader in forest-based biomethanol, cellulose filaments, nanocrystalline cellulose)

Other major products: packaging (\$1.6 billion), tissues (\$1.2 billion), structural panels (\$1.5 billion) and dissolving pulp (\$0.7 billion)

