Natural Resources Canada | Ressources naturelles Canada

The Global Need for Adaptation Goods and Services

Spotlight on Forestry and Related Products and Services

As climate change intensifies, forests and the sectors and communities that rely on them will increasingly be affected

Because of the many ecological services provided by forests, including their role as global carbon sinks, climate action in this sector offers many co-benefits.

FOREST FIRES
Increased frequency of forest fires.

PESTS AND DISEASE
Increased frequency, range, and severity of pests and disease outbreaks.

RANGE SHIFTS
Inability of trees to keep pace with their climate niche leading to range shifts.

COMPOSITION
Range shifts lead to related shifts in forest composition.

DROUGHT
Increased tree mortality and destruction of forest lands.

There is a significant international need for climate adaptation solutions

Adaptation Goods & Services In This Sector

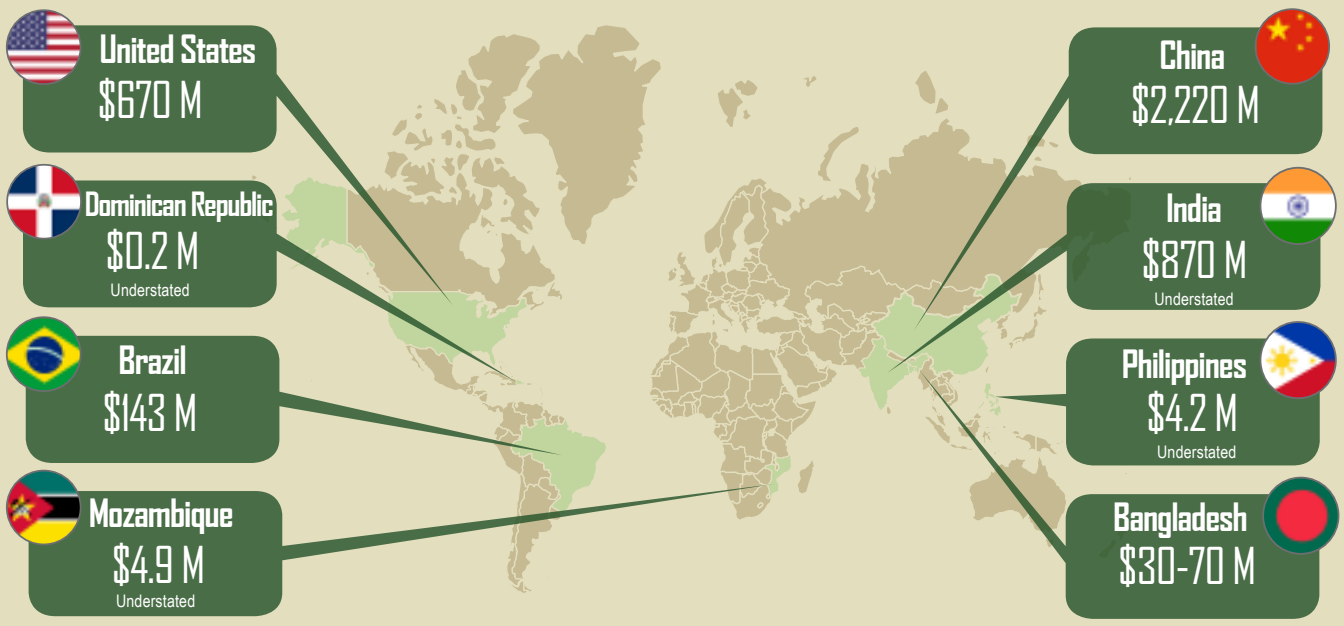
Forestry and Logging | Electric Power Generation | Chemical Manufacturing | Architectural Engineering | Management, Scientific, & Technical Consulting | Waste Management & Remediation

Investment is flowing to adapt the forestry sector to climate impacts

Spending on climate change adaptation in forestry, agriculture and the natural environment is among ten of the world's largest cities already comprises 4 - 8 % of total spending on adaptation.[1] Goods or services to help manage risks from more frequent and/or intense forest disturbances and shifting climate envelopes, build climate resilience of forest ecosystems and take advantage of new, sustainable uses of forest resources with adaptation co-benefits all support climate adaptation.[2,3]

Adaptation Outlook

This market is nascent, however, the UNFCCC forecasts that the additional investment required for adaptation in forestry, both primary extraction and manufacturing, could reach CAD 6 billion globally by 2030. This figure is an understatement as it excludes investments in forest ecosystem protection, which could comprise an additional CAD 13-23 billion in protected areas.[4] New research by Deloitte and ESSA focused on eight target countries estimates that, on the low end, total spending on adaptation in forestry could reach CAD 4 billion by 2035.



Forecasted adaptation spending by the forestry and related services sector for 2035 (CAD million, based on current estimates of % of GDP by sector, rounded to two significant figures) by Deloitte and ESSA (2016)

How is Canada Positioned to Help?

Because adaptation is often bundled into other activities, Canadian output of adaptation goods and services from this sector is unclear, as is our share of the global market. Canadian forest companies are just starting to assess climate change risk and integrate adaptation into planning and operations, internal demand is nascent. Views differ on our domestic expertise in forest adaptation but the perception is that companies in the US and Europe are more prominent than Canadian companies in serving international needs. Canadian firms help to supply adaptation services in this sector by:

1. **Nurturing science-forest manager partnerships to take a structured and evidence-based approach to climate adaptation**
2. **Bringing technology (e.g., tree genomics) and process (e.g., seed transfer practices, assisted migration) innovations to market**
3. **Exporting expertise in sustainable forest management and forest stewardship, and**
4. **Promoting forestry activities (e.g., forest regeneration) with potential benefits in climate resilience across other sectors (agriculture, reclamation in extractive industries).**

> **"Currently, a very low proportion of international projects in the sector are specifically adaptation driven, even though they might provide local benefits in climate resilience."**
>
> **– Interview respondent**

For more information

Information in this infographic stems from a 2016 report commissioned by Natural Resources Canada that scopes the need for adaptation goods and services to international markets. The research combines analysis of trade and economic data, literature reviews and the perspectives of sixteen subject-matter experts. The full report is available at **http://www.adaptationlibrary.ca/#/option/482#top**

REFERENCES: (1) Georgeson, L., Maslin, M., Poessinouw, M. and Howard, S. 2016. "Adaptation responses to climate change differ between global megacities." Nature Climate Change. (2) IPCC. 2014. "IPCC Fifth Assessment Synthesis Report, Chapter 26: North America Regional Aspects. Contribution of Working Group II to the First Assessment Report of the Intergovernmental Panel On Climate Change (Page 1445)." Geneva. (3) UNFCCC. 2006. "Technologies for Adapting to Climate Change." (4) UNFCCC. 2007. Investment and financial flows to address climate change. New York City, US: United Nations Framework Convention on Climate Change (UNFCCC). Infographic produced by Natascia Tamburello at ESSA Technologies Ltd.

ESSA Deloitte.