Natural Resources Canada | Ressources naturelles Canada

The Global Need for Adaptation Goods and Services

Spotlight on Coastal Infrastructure

Coastal infrastructure including homes, commercial assets, and public works, will be increasingly exposed to gradual climate change-related coastal hazards and sudden events

Impacts of climate change and variability are increasingly impairing coastal infrastructure function and operation and will do so in different ways.[1]

RISING TEMPERATURE
Affecting marine ecosystems, natural resources, and local climate patterns.

EXTREME WEATHER
More intense high winds and increased wave heights affect ocean activities offshore.

SEA LEVEL RISE
Causing saltwater intrusion, coastal flooding, storm surge, dam failure.

COASTAL EROSION
Causing damage to coastal ecosystems and infrastructure.

INTRUSION
Saltwater intrusion into groundwater compromising ecosystems and drinking water.

There is a significant international need to supply adaptation solutions

Adaptation Goods & Services In This Sector

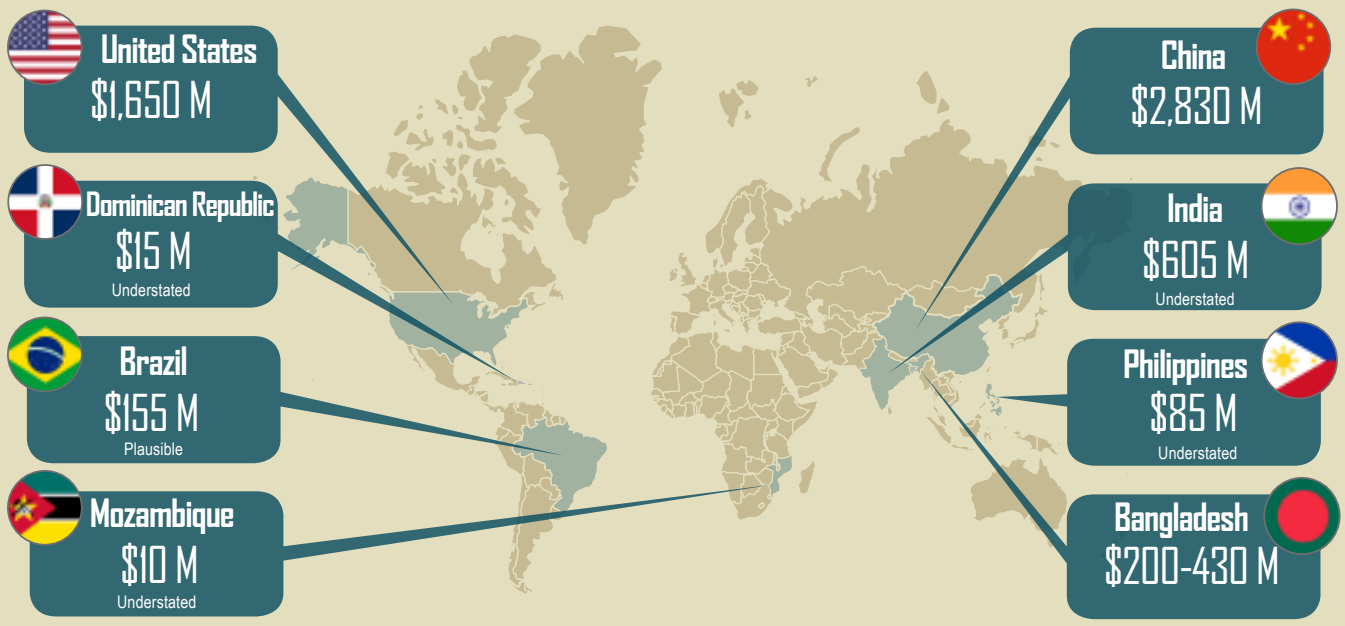
- Construction & Engineering
- Flood-Prevention Specialty Contractors
- Management, Scientific, & Technical Consulting
- Coastal Zone Management Planning
- Architectural Engineering

Today's customers for coastal infrastructure are tomorrow's customers for coastal adaptation solutions

The Coasts at Risk Index developed by the Nature Conservancy and Coastal Resources Centre (2014), points to Bangladesh, Philippines, Vietnam, Madagascar, Denmark, Guyana, Suriname, Belize, Jamaica and The Bahamas as among the most at-risk countries. Primary customers for coastal infrastructure include public and private owners and operators of major physical assets, such as port authorities, as well as businesses commonly located in coastal areas (e.g., tourism, aquaculture, real estate and construction, manufacturing plants).

Adaptation Outlook

The global market for adaptation goods and services is growing. The UNFCCC forecasts that the additional investment required for beach nourishment and protective structures could reach CAD 14 billion by 2030.[2] In addition, as much as CAD 5.5 - 85.5 billion of new infrastructure investments could relate to coastal infrastructure adaptation. New research by Deloitte and ESSA, focused on eight target countries, estimates that total spending on adapting coastal infrastructure could reach CAD 5.8 billion by 2035.



Forecasted adaptation spending in coastal infrastructure adaptation 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?

Countries with strong engineering and technical capabilities combined with exposure to coastal climate hazards have an advantage. This includes Canada. Canada has several strengths in exports related to coastal infrastructure that position us well to help supply adaptation goods and services:

1 World-class expertise in engineering services

Canada is the 4th largest exporter of engineering services and our engineers are well positioned to embed climate change into their current practices. A study for Engineers Canada revealed that 74% [of engineers sampled] consider climate change impacts in their engineering decisions.[3]

2 High activity in construction and management services

Major industry players and small firms with specific climate change adaptation services already operate internationally. Canadian companies in management services may also contribute to coastal adaptation through climate change risk and opportunity assessments.

3 Strong relationship with one of the most in need markets for coastal infrastructure – the Caribbean

Canadian and Caribbean communities in the coastal adaptation field are linked through the International Community-University Research Alliance, a space allowing Canadian and Caribbean communities to share their good practices.[4]

> **"Engineers do not market a particular technology – they offer a service, it is client dependent. Climate adaptation does not happen if the client is not on board. It's too high risk to give them something that they are not looking for."**
>
> **– 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**

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ESSA Deloitte.