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# The Global Need for Adaptation Goods and Services

## Spotlight on Water and Wastewater

## Water and wastewater infrastructure is particularly vulnerable to climate change, but many adaptation options exist

Impacts of climate change and variability are increasingly impairing water infrastructure function and operation in different ways.

**DROUGHT** Increases water stress, demand, and competition.

**RISING TEMPERATURE** Increases water demand, diminishing freshwater reservoirs.

**RAINFALL EVENTS** Changing rainfall causing flooding and overtaxing water infrastructure.

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

**PERMAFROST THAW** Causing soil instability, rupture of drinking and wastewater lines.

## There is a significant international need for climate adaptation solutions

**Adaptation Goods & Services In This Sector**

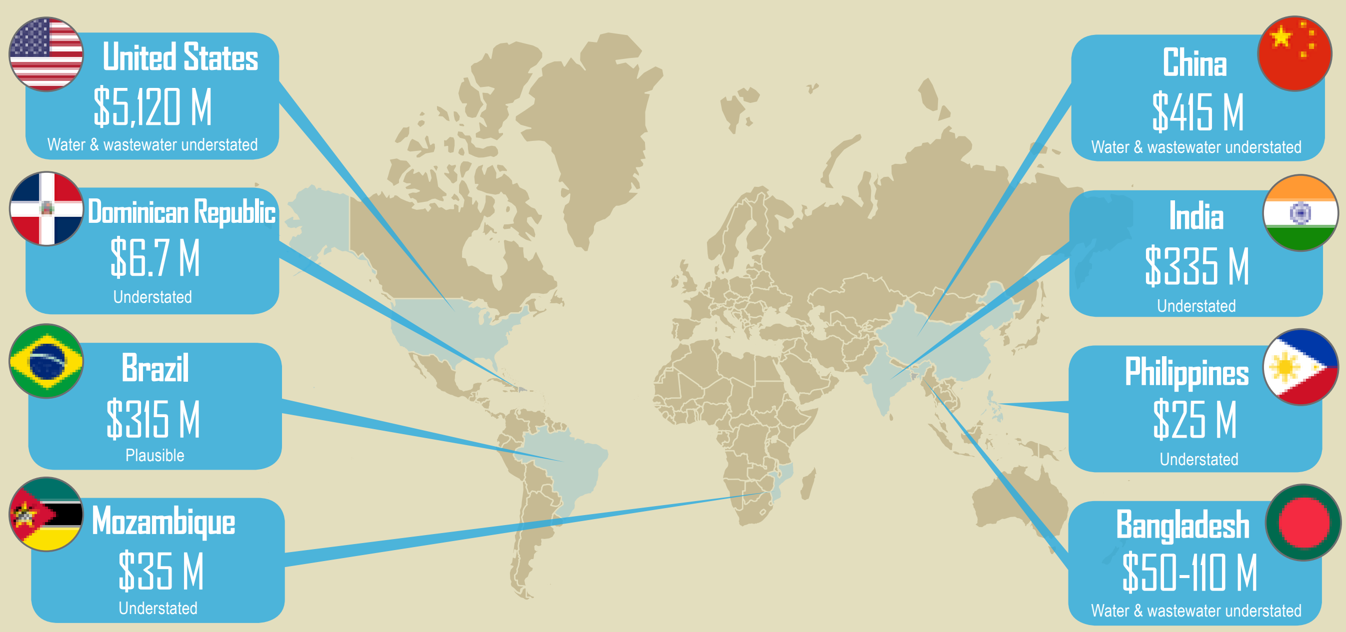
- Water Supply & Irrigation Systems
- Sewage Treatment Facilities
- Utility System Construction
- Architectural Engineering
- Management, Scientific, & Technical Consulting

**Investment is flowing to adapt the water sector to climate impacts**

Spending on climate change adaptation of the water sector among ten of the world's largest cities already makes up 11-18 % of total adaptation spending.[1] There is great opportunity for early movers to supply adaptation solutions to fill critical needs.

## Adaptation Outlook

The global market for adaptation goods and services is growing. The UNFCCC forecasts that the additional investment required for water supply infrastructure alone could reach CAD 14 billion by 2030[2]. New research by Deloitte and ESSA, focused on eight target countries, estimates that total spending on adaptation in the water and wastewater sector could reach CAD 6.3 billion by 2035.




Forecasted adaptation spending by the water and wastewater 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?

Canada's share of the CAD 634.1 billion (USD 482.9 billion) global water market stands at 1% [3]. Canada has several strengths in the water and wastewater sector that position us well to compete in the global marketplace for adaptation goods and services:

1. **Recognized as global experts in technologies with adaptive applications**
   Evidenced by the sale of Canadian membrane and UV technology companies for many millions of dollars.[4]
2. **Strong public policy & government investment in water research**
   Significant provincial and federal government investments and support through a relatively high level of government regulation.
3. **Proximity to the US, one of the largest markets**
   Proximity and familiarity provides a competitive advantage over other global water hubs, and can serve as a testing ground.
4. **Promotion through other Canadian industries**
   Mining, oil and gas, pulp and paper, and other industries have all helped drive forward our expertise in water treatment technologies.

> "More water-related patents have been issued in Ontario over the past 30 years than in any other comparable jurisdiction in the world.
> – 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) UNFCCC. 2007. Investment and financial flows to address climate change. New York City, US: United Nations Framework Convention on Climate Change (UNFCCC). (3) WaterTAP. 2016. "Ontario Water Tech: 2015-16." http://www.watertapontario.com/a/brochures/watertap-ontario-water-tech-company-directory-2015.pdf. (4) Environmental Business International Inc., Industry Canada. 2006. "The Canadian Water Industry." Environmental Business Journal.



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