

L.O.: To explore water resources in South America

South America is arguably the most diverse continent in terms of water resources. It hosts the largest river on earth (the Amazon), the driest place on earth (the Atacama Desert), and the longest mountain chain (the Andes). The geographical diversity results in extreme gradients in water availability and quality.

From the vast *Amazon Basin* to the extensive *Guaraní aquifer*, to the frozen glaciers high in the Andes, Latin America is rich in water - a key resource in the region's development.

Enormous progress has been made in the last two decades in extending water access across the region, with 70 million more people served in the urban centers than at the turn of the millennium. Furthermore, many countries within the region, and especially Brazil, have become examples for managing water resources.

Droughts and floods

A water-rich region, Latin America is home to nearly 31% of the world's freshwater resources, but it also has large arid and semi-arid areas with recurring droughts common from Mexico to Chile. Water scarcity is expected to increase in several areas due to climate change, including in the Andes, where the melting glaciers will have a great effect on the water supply.

The full impact of these changes is still unknown, but experts agree that changes in water supply will be one of the first, and most dramatic, effects.

Consequently, preventing the region's poorest and most vulnerable populations from falling back into poverty will need a regional yearly investment. *Ede Ijjasz-Vasquez*, World Bank Regional Director for Sustainable Development, estimates that climate change adapting measures have a cost of US\$15 billion to US\$20 billion a year for Latin America and the Caribbean.

Water waste treatment

In Latin America, the wastewater treatment market is expected to offer the most opportunities in the coming years. The efforts to increase the coverage of wastewater treatment are driven by population growth and the requirements of environmental regulations. The most interesting opportunities in the region are as follows:

- Currently, only 50% of municipalities have wastewater treatment plants. New wastewater treatment plants are expected in the main cities in the country, including Bucaramanga, Cali, Neiva, Pereira, Manizales, Tunja and Bogotá.
- The growth of the mining market depends on the prices of copper, which are beginning to recover. Desalination projects that were suspended during the commodity crisis were coming back to life in 2018. In addition, the long-lasting drought in Chile is leading to desalination opportunities for public utility companies.
- The priority for the wastewater treatment sector has shifted to improving the plants which currently are not operating (40% of the sewage treatment plants), something that will require the participation of the private sector. Currently, the authorities are structuring new programmes to incorporate the experience of the private sector in order to improve the performance and the technological and financial capacity of public utility companies.

The truth is that water scarcity and its uneven distribution in Latin America is limiting the development of agriculture, industry, mining, hydropower generation, and even causing conflicts among sectors due to competition for the resource.

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Task

1. Research and circle true/false for the following statements:
 - a) Latin America is home to nearly 27% of the world's freshwater resources. **True/False**
 - b) South America is a water-rich region. **True/False**
 - c) Currently, 100 million people still lack access to any sanitation, with rural access at just 60%. **True/False**
 - d) While inequalities remain, 50% of Latin American's now have access to a clean, safe water source. **True/False**

2. *"The poorest are most affected by droughts and floods, they are the least able to organize themselves against such occurrences, and have little access to financial tools, such as savings and insurance,"*

Explain how South America can improve their water supply system and help places be safe from droughts and floods.

3. Why is South America regarded as the **most** diverse continent in terms of water resources?

4. Research and explain the heavy rain disaster which affected different regions in South America between December 2016 and 2017.