



## Water-Saving Measures to Adapt to Impacts of Climate Change in Bolivia

### Scenario

Bolivia is one of the countries most affected by climate change in Latin America. Climate seasons present strong variability aggravated in the last decades by the phenomena of El Niño and La Niña.

This has caused an increase in extreme rain events and rising river flows during the rainy season, resulting in regular floods and damaging population, agriculture, livestock, and generally affecting natural resource management. Additionally, the deforestation of Bolivia's Amazon rainforest and other ecosystems for the production of soya, cattle and timber has increased the devastation caused by floods. During the dry season, Bolivia experiences recurring and extended drought events, with serious implications for agricultural production and drinking water supplies.

In the last decades, some Andean glaciers have begun to melt due to temperature raises in the mountain chain which is likely to negatively affect water supply of cities like La Paz and El Alto in the future. Growing populations put additional pressure on drinking-water supplies.

In reaction to climate change, the Government of Bolivia has begun to take on the role of representing the voices of vulnerable countries, indigenous groups and social organizations at the United Nations Assembly and other international meetings with the objective of reframing the global climate debate in terms of climate justice. Moreover, the Government of Bolivia established the National Climate Change Programme (PNCC) in 1995 and has since carried out an important number of re-

search projects. In 2007 the PNCC published a study illustrating the range of expected climate change impacts in different ecological regions of Bolivia including:

- More frequent and intense extreme climate events,
- Scarcity of water due to climate variability with extended drought periods,
- More intense rain and humidity during the summer, and stronger droughts during the winter in the Amazon flatlands.

### Climate change adaptation in the Bolivian-German water programme

In response to the climate change risks identified by the Bolivian government, the "Drinking Water Supply and Sanitation in Small and Medium-sized Cities Programme" (GIZ/PROAPAC) has included the topic of climate change in a global strategy of Integrated Water Resources Management (IWRM). GIZ on behalf of BMZ (German Federal Ministry for Economic Cooperation and Development) supports the Government of Bolivia in implementing reforms of the urban water sector. The overall programme objective is to increase cooperation between different government levels, the population and the water system operators to improve drinking water supply and waste water disposal services in selected towns and cities in Bolivia.

The climate change adaptation strategy supported by PROAPAC involves the following fields of cooperation



with the Bolivian Ministry of the Environment and Water:

- Contribute to national policy and strategy development in order to increase water use efficiency and adaptation to climate change, including monitoring of water losses in the urban water systems and water-pricing,
- Promotion of water-saving programmes as well as sanitation education campaigns in schools,
- Promote projects of water-efficient sanitation technologies,
- Encourage waste water treatment and reuse in agricultural production in rural areas,
- Consultation of water utilities in water loss reduction.

### Expected results

GIZ/PROAPAC has been supporting the Bolivian Ministry for Environment and Water for the last 10 years. The programme supports the Ministry, its Vice-Ministries and the country's regulation authority in their efforts to strengthen institutional development, and regulatory frameworks in order to improve water services in the country. Areas of focus include a sustainability-oriented policy for sector investment, improvement of water supply operator's efficiency and promoting the integrated management of water resources. Aside from improving water and sanitation services, the common goal is to deal with scenarios of climate change and its negative impacts in the water sector, especially in regard to decreasing water availability.

The climate change adaptation component is expected to contribute to a more efficient use of water, reducing water demands in industries and household consumption by at least 3%.



Bolivian woman fetching water at a public water tap.

In order to raise awareness of increasing water shortages and to promote water-saving behaviour among the population, environmental and hygiene education campaigns have been implemented. These campaigns have educated children about personal hygiene and the prevention of infectious diseases, encouraging them to use water more efficiently and to be aware of its quality. The campaigns have so far reached roughly 260,000 primary school children.

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International Water Policy and Infrastructure  
Programme

Dag-Hammarskjöld-Weg 1-5  
65760 Eschborn, Germany  
T: +49 61 96 79-0  
F: +49 61 96 79-11 15  
E: [info@giz.de](mailto:info@giz.de)  
I: [www.giz.de](http://www.giz.de)

**For further information please contact:**  
Dr. Detlef Klein  
Head of Programme PROAPAC  
[detlef.klein@giz.de](mailto:detlef.klein@giz.de)

Michael Klingler  
International Water Policy and Infrastructure  
Programme  
E: [Michael.Klingler@giz.de](mailto:Michael.Klingler@giz.de)

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**Authors:**  
Dr. Detlef Klein, Sabine Schulze,  
Dr. Michael Klingler, Dr. Philipp  
Magiera