

# Scientists predict Santiago de Chile will get drier and warmer

January 23 2013, by Kerstin Krellenberg & Tilo Arnhold

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Credit: André Künzelmann/UFZ

Today, 10% or more of the population in the Metropolitan Region of Santiago de Chile is affected by extreme heat or floods. And, these threats will likely increase due to the continuous expansion of the Chilean capital, the consequent changes in land use, and the influences of climate change. Because of that, the international research project ClimateAdaptationSantiago (CAS) has developed, during the last three years, an Adaptation Plan for climate change for the metropolitan region, and has handed it over to the Regional Government and the Regional Secretary of the Ministry of Environment. This Plan was developed by German and Chilean scientists working at the Helmholtz-Centre for Environmental Research (UFZ), the Karlsruhe Institute for Technology (KIT), and the Universidad de Chile and the Pontificia

Universidad Católica de Chile.

The adaptation plan is the answer to the climate changes to and impact on the [metropolitan region](#). The scientists of the CAS-Project expect significant changes till the year 2050. Researchers predict an increase of one to two degree Celsius in the yearly average maximum and minimum temperatures; with it, the days with temperatures above 30 degree Celsius will most likely also increase. In addition, precipitation could decrease up to a 20%. In fact, precipitation will be concentrated on fewer days than today and, as a consequence, the risk of floods will rise, according to the scenarios. Given the growing population and further expansion of the city, combined with the predicted climate changes, the scientists expect problems in the water and energy supply, as well as an increase in the population potentially exposed to [extreme heat](#) and floods.

The 14 measures, developed jointly by scientists and the involved stakeholders, include among others, the creation of a monitoring system, more green areas in the city, and the usage of existing irrigation canals in the Andean piedmont to reduce the risk of floods. Furthermore, measures are recommended to increase participation and information for the population, and a program to establish cooling roofs for lower-income households. The implementation of the Plan and its measures is supported by the GORE and the SEREMI MA. In accordance to that, a public consultancy of the Plan is scheduled for the next several months and further concrete steps towards implementation are also planned.

Furthermore, in the frame of the CAS-Project, a Regional Learning Network with scientists and decision-makers was built, in cooperation with the UN CEPAL. This network includes six Latin American megacities (Buenos Aires, Bogotá, Lima, México, Santiago de Chile and São Paulo). This Regional Learning Network of scientists and decision-makers was established with the aim of comprehending and discussing

the "practical status" of urban adaptation to [climate change](#), as well as of fostering the exchange between the cities in the region. Within the research project, three workshops were organized to reach these aims. "The first workshop addressed the scientific exchange, the second intended to strengthen the exchange between decision-makers in different administration levels in the cities and the third workshop brought the two groups together", informed Dr. Kerstin Krellenberg from UFZ, who has coordinated the CAS-Project.

The work in the frame of the CAS-Project was financially supported by the International Climate Protection Initiative of the Federal Ministry of Environment (BMU). The Adaptation Plan is a shared result of close cooperation between politics, practice and science. Ten round tables, which were organized by the Project over the three years of project duration in Santiago, constituted the core element of the cooperation.

The Chilean-German investigation group will concentrate, during the next three years, on additional options of climate change adaptation at local levels in Latin-American cities on the basis of urban vulnerability.

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