

Why are we here?

- Our understanding on Andes hydroclimatology has substantially advanced in the last decades along with an increase in the number of researchers. Nonetheless, the research has mostly focused in specific regions and suffered from a substantial lack of coherent regional integral perspective and a lack of relevant *in-situ* observations.
- New research topics have also emerged (high impact events, precipitation hotspots, climate change impacts, among others) as well as the urgent need to link our physical scientific understanding with an ample array of societal needs (e.g., water, food security, human health and disasters).
- In this context, ANDEX is proposed as a GEWEX Regional Hydroclimate Project (RHP) aiming at understanding, modelling and predicting the dynamics of the water and energy cycles over the Andes cordillera, at a wide range of temporal and spatial scales, and their linkages with the surrounding oceans, land surface and major river basins.
- Four science themes: (a) climate patterns and drivers, (b) climate and environmental changes, (c) high impact events, and (d) Andean cryosphere. We also considered two cross-cutting themes: (i) observations, data and modeling, and (ii) Science underpinning sustainable development.

Why are we here?

* Also, the proposed agenda will further the scientific development in South America through:

- (i) fostering **regional cooperation** among researchers and research programs
- (ii) establishing a **focused research agenda** on fundamental issues of the Andes region main interests
- (iii) creating the **scientific framework to** help decision making processes for the **sustainable development** of a highly environmentally and biogeophysically threatened region
- (iv) connecting the Andean region with global and regional initiatives.

* A “white paper” addressing these issues will be prepared during the first semester of 2018, emphasizing in each case actions and challenges to bridge the current gaps in knowledge and applications. The ANDEX white paper will serve a basis for a Science and Implementation Plan that should be developed after a second ANDEX meeting to be held **in Santiago, Chile, in October 2018**.

ANDES White Book

Chapter 0. Geographical context

Lead author: René Garreaud

Chapter 1. The hydroclimate of the Andes

Lead author: René Garreaud

Contributing authors: Paola Arias, Jhan Carlo Espinoza, Germán Poveda, Jorge Molina-Carpio. Someone else?

Chapter 2: Climate and environmental change

Lead author: José Daniel Pabón

Contributing authors: Silvina Solman, Paola Arias, and Marcos Andrade (was he confirmed?), Someone else?

Chapter 3: High impact events

Lead author: Germán Poveda

Contributing authors: Jhan Carlo Espinoza, Silvina Solman, Rolando Célleri, Manuel Zuluaga

Chapter 4: Cryosphere of the Andes

Lead author: Mariano Masiokas

Contributing authors: Antoine Rabatel, Ricardo Villalba (TBC), Andrés Rivera (TBC) (René, could you please contact Andrés?), Someone else?

Chapter 5. Observations and data

Lead author: Rodney Martínez,

Contributing authors: José D. Pabón, Someone else?

Chapter 6. Science underpinning sustainable development

Lead author: Germán Poveda

Confirmed contributors: Wouter Buytaert, Peter van Oevelen, Joan Cuxart, Laura Gallardo (TBC) (René, could you please contact Laura?), Someone else?

Chapter 7. Actions and challenges

Contributors: TBC

GEWEX

(CR)²



fcfm

Geofísica

FACULTAD DE CIENCIAS
FÍSICAS Y MATEMÁTICAS
UNIVERSIDAD DE CHILE