

**CONNECTING GRD AND ACC:
RESILIENT PRACTICES FOR
FAMILY AGRICULTURE**

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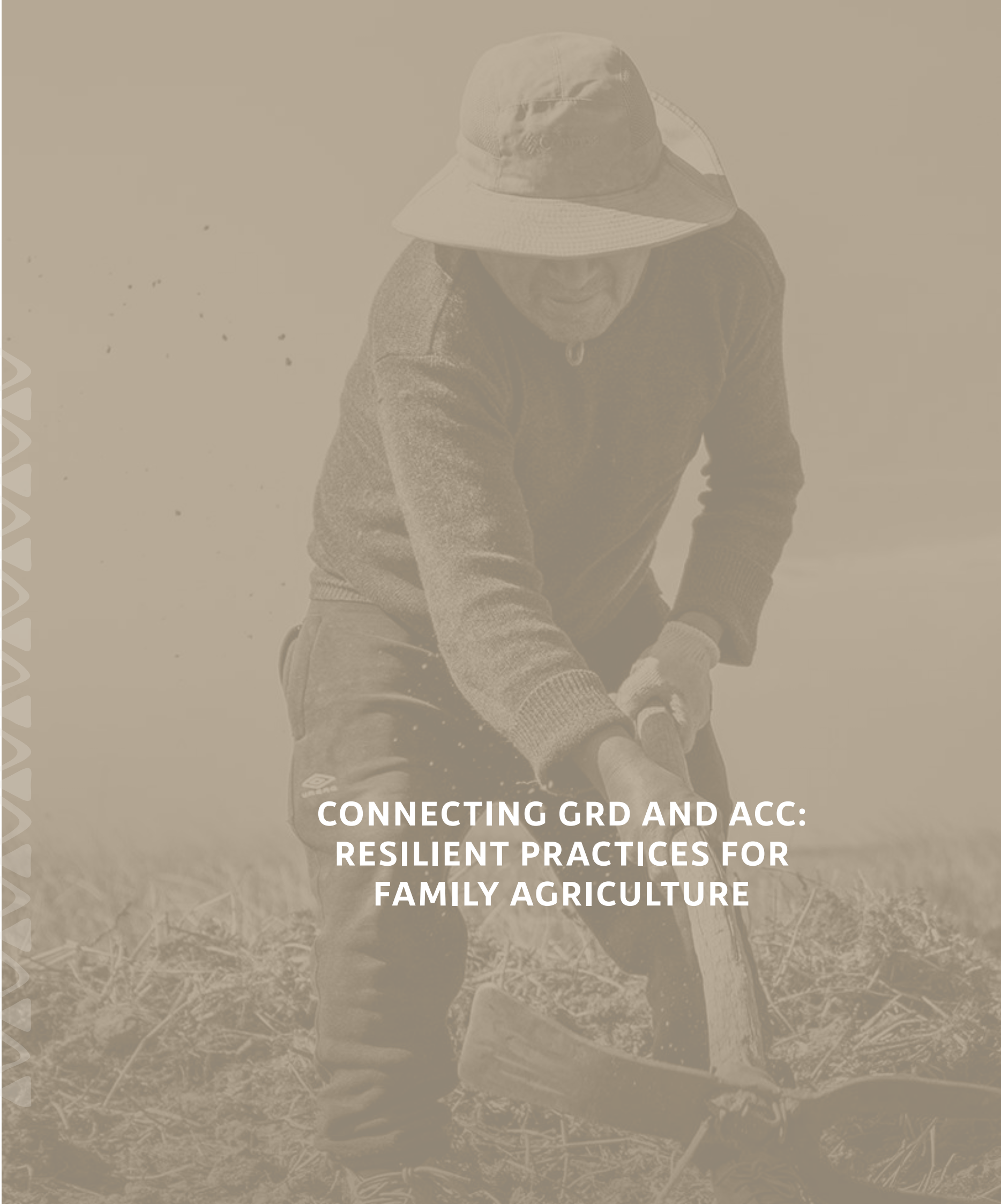
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The Andes Resilient to Climate Change project is a regional initiative promoted by the Climate, Disaster Risk Reduction and Environment Section of the Swiss Agency for Development and Cooperation (SDC), from the Lima Regional Hub, and implemented by the HELVETAS Swiss Intercooperation - Avina Foundation consortium in Peru, Ecuador and Bolivia.



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ABOUT CLIMATE CHANGE RESILIENT ANDES

It is a regional project that seeks to strengthen the resilience of family farming families, especially women and young people living in the Andes of Bolivia, Peru and Ecuador; so that they can adapt to the risks of an increasingly hostile climate context.

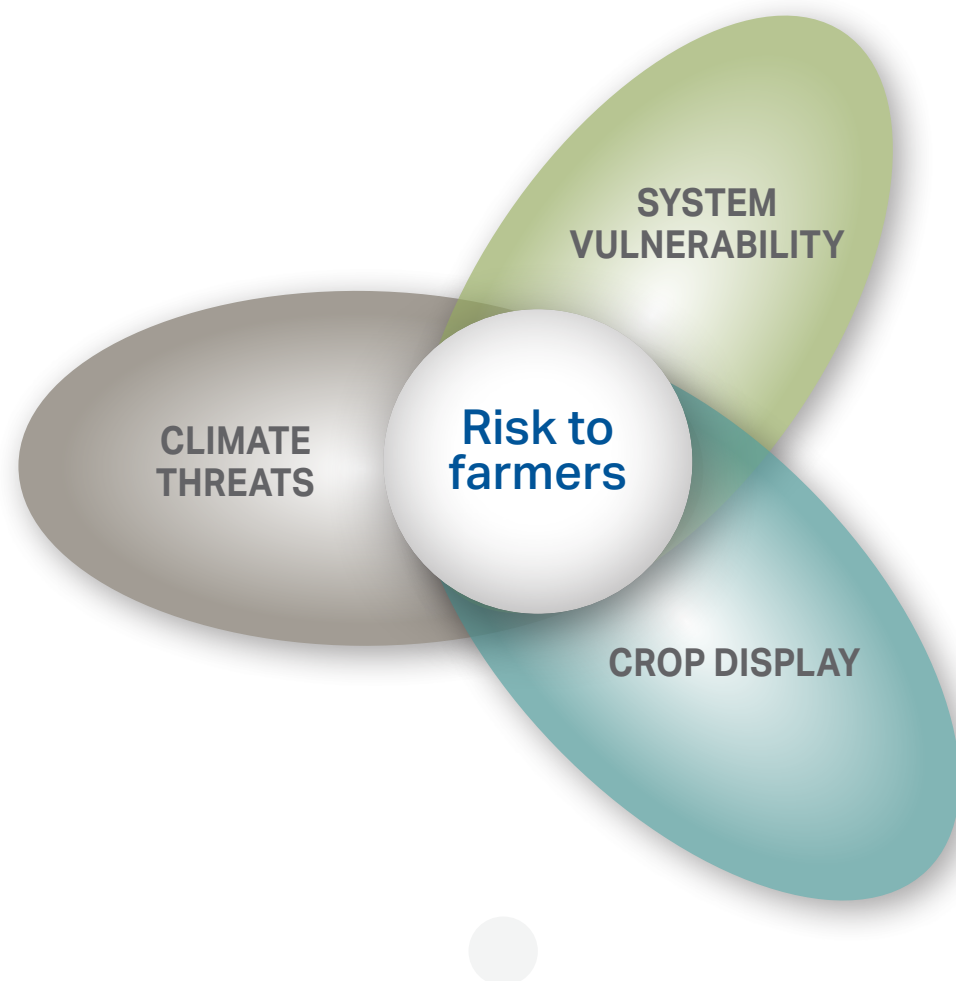
In 2024, it begins its second phase, based on the achievements and lessons learned previously. From support in the formulation of public policies, the recovery of ancestral knowledge, the scaling up of good adaptation practices and risk management in the perspective of resilient Andean family farming. With this, it contributes to improving production, entrepreneurship, water and food security, valuing the role of communities as guardians of the territory and the knowledge that sustains Andean life.

IN THE ANDES, SMALLHOLDER FAMILY FARMERS STRUGGLE TO GET BY AS DROUGHT, FLOODS AND LANDSLIDES THREATEN TO DESTROY THEIR HARD-EARNED BUILDS. IN THE FACE OF THESE CHALLENGES, ANDES RESILIENT TO CLIMATE CHANGE IS PROMOTING CONCRETE ACTIONS TO REDUCE CLIMATE RISK IN BOLIVIA, ECUADOR AND PERU. WITH A REGIONAL FOCUS, THE PROJECT STRENGTHENS LIVELIHOODS AND MULTIPLIES ITS IMPACT THROUGHOUT THE ANDEAN REGION.

HOW DO WE WORK?

The project has a systemic approach and a facilitating role. It cooperates with public entities responsible for climate, agricultural, economic and social inclusion, and development planning policies, to generate an enabling environment for public services that strengthen the climate resilience of Andean Family Farming (AFA). In addition, it promotes alliances with the private sector, microfinance and solidarity banking actors, to develop financial products with criteria for adaptation to climate change.

It contributes with technical assistance, knowledge generation, innovation in services and strengthening climate management and governance. It also supports the measurement and progress in adaptation, in accordance with the Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs).



REDUCING CLIMATE AND DISASTER RISKS IN THE ANDEAN REGION

The risk in Andean family farming is determined by its geographical exposure and its vulnerability strongly linked to the sensitivity of the crops to climatic hazards. Four threats have a high impact on Andean family farming: floods, droughts, as well as the occurrence of temperature drops (frost) and intense hailstorms, causing significant losses and productive insecurity.

Andean family farming, which produces mostly rainfed food, is and will be the most affected, since it depends on the rainfall cycle, to achieve harvests that satisfy the consumption of families and produce surpluses for the domestic market. Damage and loss have a direct impact on agricultural production, on the environmental functions of ecosystems and on household economies. Faced

with this problem, the regional project Andes Resilient to Climate Change, which contributes to the "Rural poor populations vulnerable to climate change who live in Andean ecosystems in Bolivia, Ecuador and Peru, to increase their resilience and adaptive capacity", implemented local initiatives in the line of action of "Disaster Risk Reduction" (DRR) addressed from different areas, which include the characterization of the vulnerability of producers, the associated risks, and the local knowledge and good practices to face them.

This paper presents a selection of three DRR initiatives, implemented by the project with the key participation of local, national and subnational actors and institutions. These experiences are exemplary and detail how, with a regional perspective, it was possible to contribute to the resilience of Andean family farmers at climate risk in three countries.

OUR APPROACH

Managing current climate risks and progressively anticipating future risks, aggravated by climate change conditions, requires a thorough understanding of the sensitivity of small family farmers in the Andean region.

The project, with the adaptation of international academic methodologies to the local context, implemented initiatives aimed at "understanding risk" at the community level, identifying those communities that require priority attention in policies, projects and initiatives aimed at reducing their vulnerability.

It also highlights the coordinated effort between Peru and Bolivia in the collection and systematization of the valuable heritage of ancestral practices and knowledge, which contribute to the prevention of risks associated with climate change from the action of the indigenous and native peoples themselves.

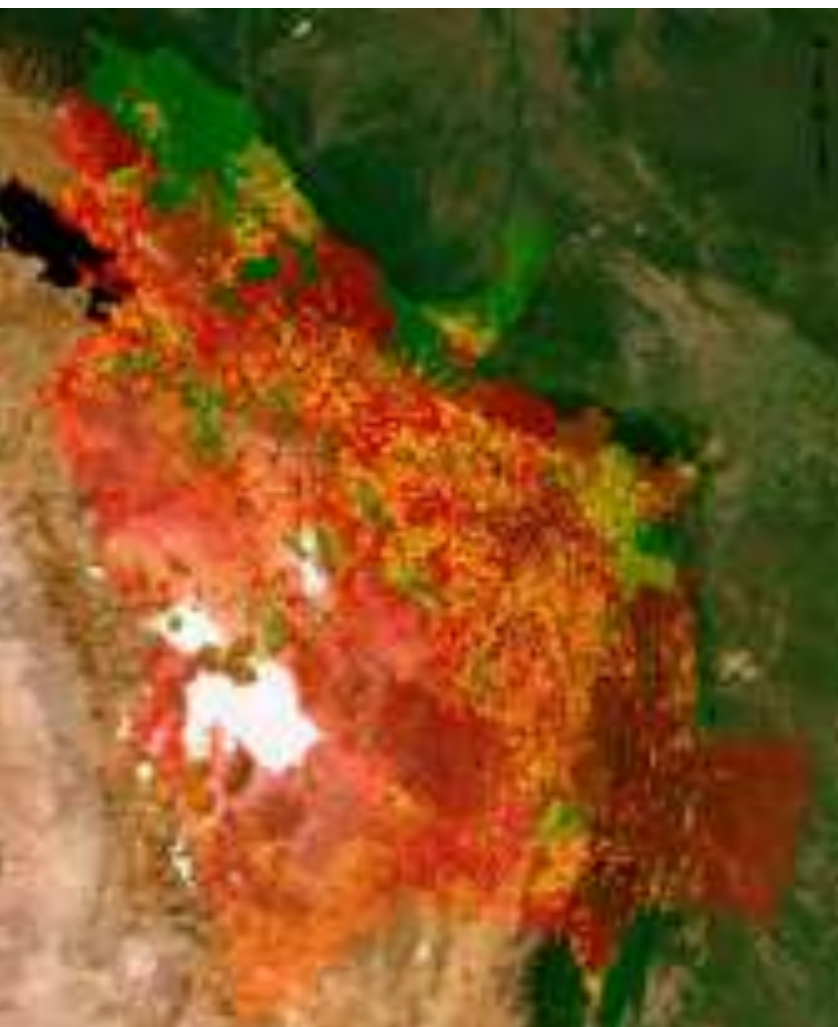
The Andes Resilient to Climate Change project has the capacity to develop initiatives such as those presented in this document, which address common problems for Bolivia, Ecuador and Peru, from local actions, with the potential for replication and regional scaling.

BOLIVIAN EXPERIENCES IN IDENTIFYING CLIMATE RISKS IN FAMILY FARMING

In recent decades, Bolivia has lost up to 50% of its glaciers. Changes in temperature, precipitation and frost patterns, coupled with the loss of water sources and increasingly strong drought seasons, show the negative impacts of Climate Change (CC) at a social, cultural and economic level. Affecting the livelihoods and productive activity, especially of the rural populations of small producers of Andean Family Agriculture (AFA). Bolivia recognizes that, by 2030, 27% of the national

territory could be affected by persistent drought and 24% by recurrent floods.

The characterization contributes to address this problem, analyzing indicators and variables of secondary information of 259 municipalities and 15,213 communities in the Andean region of Bolivia. Thus, it provides information regarding the sectors that need to reduce their vulnerabilities and strengthen their preparedness capacities.



THREAT OF DROUGHT IN THE ANDES OF BOLIVIA

Through this experience, the following were carried out:

- The diagnosis and characterization of the typologies of the AFA and its socioeconomic, environmental and productive vulnerabilities.
- The analysis of the climatic risks caused by droughts, frosts, hailstorms and floods.
- The adaptation of the ND-GAIN methodology of the University of Notre Dame to characterize the level of vulnerability.

RESULTS

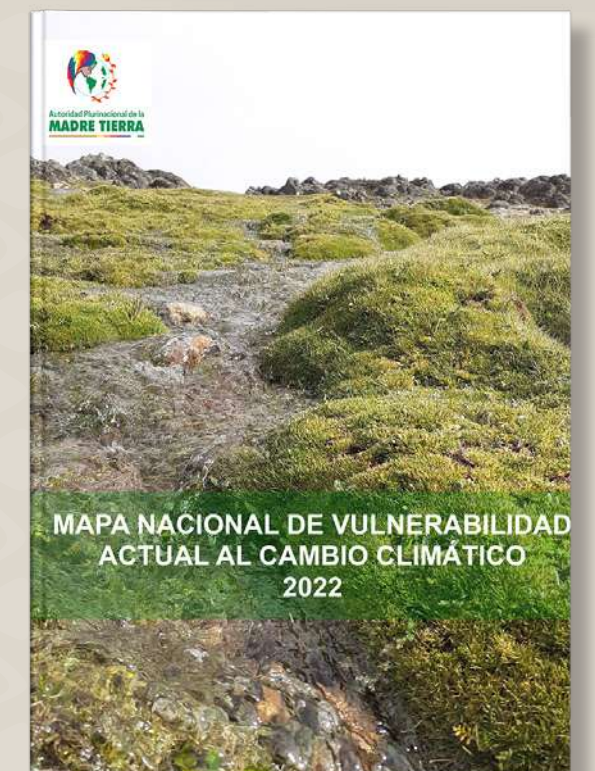
Considering six strategic sectors: food, water, health, ecosystems, human habitat and infrastructure, municipalities with high vulnerability to CC were identified, the characterization and level of preparedness capacity based on three components (economic, governance and social) which allowed the construction of a matrix of adaptation capacities for 259 municipalities and the identification of those that concentrate a high vulnerability and low preparedness capacity, requiring priority attention to improve their Climate Change Adaptation (CCA) capacity, as well as issuing policy guidelines, based on the findings of the study.

This information, at the municipal level, did not exist before, and now it allows the design of programs and projects focused on CCA at the local level, prioritizing the areas that are at greatest climate risk.

REPLICABILITY AND SCALABILITY

In 2024, this study was extended to all municipalities in the country, with external financing to the project. This shows that the methodology used also has the potential to be applied to other countries in the region.

PUBLICATIONS



ECUADORIAN EXPERIENCES IN THE IDENTIFICATION OF CLIMATE RISKS IN FAMILY AGRICULTURE



STUDY TO CHARACTERIZE THE CLIMATE RISK OF PRODUCERS IN ANDEAN FAMILY AGRICULTURE (AFA)

Heavy rains and landslides, as well as prolonged droughts, have increased the vulnerability of agricultural production and food security in this area. Likewise, the accelerated reduction of Andean glaciers has had an impact on water availability, which aggravates the situation of water stress in several regions of the country.

This characterization study allows us to know the level of risk at the parish level, promoting the support of policies and investments that strengthen climate resilience and governance of AFA producer families in 27 parishes, with more than 177,000 inhabitants of 4 Andean provinces of Ecuador.

Through a multi-criteria analysis, with a subsequent visit to the producer families, the socio-economic and environmental diagnosis of the AFA was carried out based on its agro-productive matrix, the poverty map, soil fertility, access to the human development bonus and access to irrigation.

The exposure and vulnerability of the 6 types of AFA production (subsistence agriculture, self-consumption and sale of labor force, short-cycle crops, extensive dairy farming, soft corn and intensive agriculture under irrigation) were characterized, based on exposure indices, sensitivity and adaptive capacity.

Finally, the risk analysis was carried out based on the guidelines of the IPCC 5th Report against the four main threats (drought, intense rains, high temperatures and frosts), in consideration of current and future climate scenarios.

RESULTS

The four parishes, which are home to more than 20,000 inhabitants, were identified as having the highest level of vulnerability in the environmental, socioeconomic and governance spheres.

The level of risk of each production system in 27 parishes was characterized, by threat, under current and future climatic scenarios, which facilitates the optimization of investment planning, the generation of projects and programs, and the decision-making of the producers themselves.

The capacities of AFA producers and their opportunities for strengthening were also identified, finding that communities whose livelihoods are based on moorlands and forests need to be conserved and recovered. As a result, families have begun to implement agroecological production, soil improvement and diversification towards adapted crops.

An analysis of public policies on climate, water, agricultural sector, rural poverty reduction, economic and social inclusion was also carried out. It was possible to identify its strengths and gaps in relation to the needs and demands of the AFA producers.

BINATIONAL EXPERIENCES IN BOLIVIA AND PERU: ANCESTRAL PRACTICES IN THE FACE OF CLIMATE RISKS

BINATIONAL DIAGNOSIS OF ANCESTRAL PRACTICES AND KNOWLEDGE IN THE SET OF MEASURES FOR THE PREVENTION OF RISKS DUE TO CLIMATE CHANGE IMPACTS

Droughts, floods, frosts and hailstorms are affecting the well-being and quality of life of indigenous and native peoples, located in the TDPS system (territories between Lakes Titicaca, Desaguadero, Poopó and Salar de Coipasa), shared between Bolivia and Peru.

The Aymara, Quechua and Uro peoples have had, and still have, Traditional and Ancestral Knowledge (TK), which has allowed them to manage climate risks for many generations. They represent a socio-cultural heritage that can add to the set of practices to deal with the impacts of CC. However, this knowledge is at a turning point, as it resides in the minds of the latest generation of older adults and local scholars.

This experience recovers the CTAs, identifying the main challenges and proposals to revitalize them in the current context.

Through intercultural work based on the dialogue of knowledge, gender and intergenerational, and through the mapping of actors, interviews, participatory workshops and primary information gathering, the following was carried out:

RESULTS

The experience has made it possible to identify and systematize a set of 254 ATCs from both countries (for example: the observation of the mouse nest -*abrothrix andinus*- which allows predicting the intensity of frosts, or the observation of the flowering of the sewenka -*cortaderia jubata*- which allows predicting the behavior of rainfall; or also the observation of the behavior of the wind, that allows forecasting droughts), of which 35% are related to natural indicators of warning of trends and behaviors of rainfall, extreme events, which allow IOPs to make decisions and manage the risks of agricultural losses. Of the total, 93% are ancestral traditional knowledge

and 7% are adapted knowledge, almost all in line with the NDC targets of agriculture, water, fisheries, aquaculture, forest and/or health.

This initiative revalues the sociocultural heritage of ancestral knowledge, which increases and complements the knowledge capital of the AFA in two countries, to more effectively face the impacts of climate change and to concretize the approach of the Resilient Andes project with a regional scope.

PUBLICATIONS



- The identification of the original indigenous peoples of the TDPS system and the characterization of their climatic threats.
- The identification and systematization of traditional and ancestral knowledge, relating it to the corresponding climate risks, its need for conservation and its contribution to the NDCs of each country.

This initiative addresses the challenges of conserving, protecting and disseminating the CTAs and the proposals to revitalize, protect and disseminate them, from the reflective and critical approach of the indigenous peoples of the TDPS system themselves.

LAGO TITICACA PERÚ - BOLIVIA



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