



BOLIVIA

CLIMATE CHANGE ADAPTATION FOR SMALLHOLDER AGRICULTURE PROAGRO 1 - COMPONENT RAINWATER HARVESTING



Client GTZ / German
 Technical Co-operation

Financing GTZ / German
 Technical Co-operation

Duration of Services 01/2008 – 12/2010

Cost of Implementation 3 Mio. EURO

Scope of Services

- Technical assistance
- Planning, final design and works supervision
- Capacity building of smallholder farmers and municipalities
- Hydrology, irrigation and hydraulic engineering
- Climate change adaptation
- Administration of funds, sectorial budgetary support, coordination support to other donors
- Administration of the GTZ funds
- Institutional Strengthening of the farmers organization and of the Municipalities in the North of Potosí
- Support and organization of the works developed by direct administration
- Tender Assistance
- Marketing support of the products
- Assistance in the basin management in order to protect the water resources

Context and Challenge

The project is located in the poorest areas of Bolivia: The north of Potosí and south of Cochabamba. The beneficiaries - smallholder farmers in rural areas - are one of the population groups most vulnerable to climate change impacts. Farming activities are essentially based on the availability of sufficient water for rain fed micro-irrigation schemes. The livelihoods of the smallholders are characterized by a high vulnerability to climate change impacts and limited adaptation capacities due to a low food security level, water shortages or inefficient irrigation methods. Many farmers report having observed gradual climatic changes such as increased numbers of shorter summers and changes in the precipitation regime (more extreme rainfall events, hailstorms or frost days). Climate change impacts may aggravate water shortages, erosion processes (landslides) or longer drought periods.

Project Description and Results

The objective of PROAGRO 1 is to support the irrigation sector and the national rural development programmes for improved living conditions and food security of the beneficiary population.

The Consultant implemented during the 1st phase the Rainwater Harvesting component “Unidad Regional Norte Potosí y Sur de Cochabamba”. Innovative climate change services strengthened the climate change resilience of the stakeholders. The combined approach of improved micro-irrigation (“more crop per drop”) and rainwater harvesting proved to be a cost-efficient adaptation option. Especially during drought periods additional water resources and increased water storage capacities help to avoid losses of crop production and livestock farming. Further, in distress situations water supply for domestic use is assured.



The Consultant provided the following services:

- Capacity building and institutional strengthening of local stakeholders (user groups, municipalities, NGOs)
- Hydrology and Hydraulic Engineering: Planning, final design, works supervision of irrigation infrastructure and ponds for rainwater capture (average storage capacity of 1000 m³; excavation size of ponds of approx. 25 x 20 x 2 m, construction with caterpillars).
- Climate proofing of micro-retention basins: Analysis of potential climate change impacts (including climate data analysis) and adaptation of design (e.g. reduction of surface area of ponds for reduced evaporation).
- Capacity building and training measures to use scarce water resources more efficiently and to increase crop production: Introduction of modern and efficient micro-irrigation methods (sprinkler irrigation, improved soil conservation); improved product marketing.
- Improved management techniques of catchment areas (3-5 ha micro-retention basins), hydrological control of degraded areas and reforestation measures.
- Strengthening the resilience of farmers in order to cope with the increasing climatic change related risks: Improvement of risk management of natural disasters and awareness rising measures.
- Participation in/ provision of specific climate change services: Regional climate change adaptation workshops for development planning; publication of didactical climate change manuals and of studies.
- Coordination of the donor funds and acquisition of additional funds.

Approx. 1.700 families were provided with structural and non-structural micro-irrigation works for improved water storage and agricultural production. A total of more than 800 systems constructed and put into operation.

PROAGRO 1 is considered as a successful best practice model for climate change adaptation in Bolivia. An up-scaling of the project activities is the objective of the second phase (PROAGRO 2) which CES is implementing with additional co-financing of SIDA since 2011.