



BOLIVIA

IRRIGATION COMARAPA – SAIPINA – SAN RAFAEL



Client	Prefectura del Departamento de Santa Cruz, Dirección de Desarrollo Económico	Description of Services
Financing	Kreditanstalt für Wiederaufbau (KfW) / Prefectura de Sta. Cruz	<ul style="list-style-type: none"> • Definition of final project criteria • Detailed and final design • Preparation of Tender Documents • Advice to client on contract awarding for project implementation • Supervision of construction works • Support to farmers in setting up autonomous irrigation organisations
Duration of Services	04/1997 - 06/2006	
Cost of Implementation	11.5 Mio. Euro	

Brief Project Description

Project Background: The region Comarapa - Saipina - San Rafael is located in the province Manuel María Caballero in the extreme western part of the administrative district Santa Cruz de la Sierra of Bolivia.

Irrigation practice has been developed since centuries without considering the shortage of water along the Comarapa river. At the end of the 1980s a Feasibility Study was elaborated, followed by a so called preparation phase, emphasising community participation in general socio-economic aspects as well as in matters of appropriate irrigation management. The main objectives of the project are, beside the improvement of water availability and extension of irrigation areas, the reduction of social conflicts, the improvement of extension services and the development of self governing local irrigation associations.

Measures taken: The irrigation project Comarapa - Saipina - San Rafael includes the construction of the La Cañada Dam with a storage capacity of 10 hm³. Its objective is to prolong the operation time of the irrigation season by storing water in the reservoir during rainy seasons and to release the stored water during the drought periods. Furthermore the irrigation systems will be improved efficiently by construction and rehabilitation of the irrigation infrastructure and weirs, intakes, canals, siphons, aqueducts, etc. The project also assists in the development of self governing structures of local irrigation associations, hence improving the sustainable economic situation of the farmers. The entire irrigation infrastructure will be handed over to the collective irrigation associations at the end of the construction period. These organisations have to take on the task of optimising the use of water in accordance with their own process of autonomous development.

Objectives and Measures - Contribution to rural development within the project area, and the surrounding areas affected, based on the following criteria:

- Construction of a storage dam to ensure the availability of retained water for irrigation purposes
- Incentives to increase agricultural production on the basis of the availability of larger amounts of water
- Improvement of the water distribution by constructing canals of higher and lower priorities and the appurtenant distribution structures
- Support to the farmers in setting up autonomous irrigation organisations
- Support to the rural associations so that they are in a position to operate and use the canal system
- Securing maintenance works required for the new infrastructure, to be carried out by user-organisations
- Support for increased agricultural diversification and produced quantities by means of specialised technical assistance
- Adaptation of the irrigation infrastructure to the rural communities which are subject to different local and social conditions

Essential Data on Project

La Cañada Dam		La Palca Conveyance Canal	
- Storage capacity	10 x 10 ⁶ m ³	- Length	6300 m
- Height	52 m	- Discharge	1700 - 850 l/s
- Length of crown	160 m	Chilón-Saipina Right Bank Main	
- Dam volume RCC	70 x 10 ³ m ³	- Length	14700 m
La Pista Intake Structure		-Discharge	700 l/s
- Lateral intake	500 l/s	Chilón-Saipina Left Bank Main	
- Spillway capacity	163 m ³ /s	- Length	11100 m
La Palca Intake Structure		- Discharge	350 l/s
- Lateral intake	1700 l/s	Chilón-Saipina Main for Extension area	
- Spillway capacity	354 m ³ /s	- Length	12100 m
Toro Muerto Intake Structure		- Discharge	470 l/s
- Lateral intake	500 l/s	Cultivated Area	
- Spillway capacity	0 m ³ /s	- Rio Arriba / Comarapa	174 ha
La Pista Conveyance Canal		- La Pista	288 ha
- Length	5180 m	- Los Bañados	244 ha
- Discharge	350 l/s	- Chilón-Saipina	1243 ha
La Pista Main Canal		- San Rafael	420 ha
- Length	4360 m	- Area total	2369 ha
- Siphon	1140 m		
- Discharge	350 l/s		