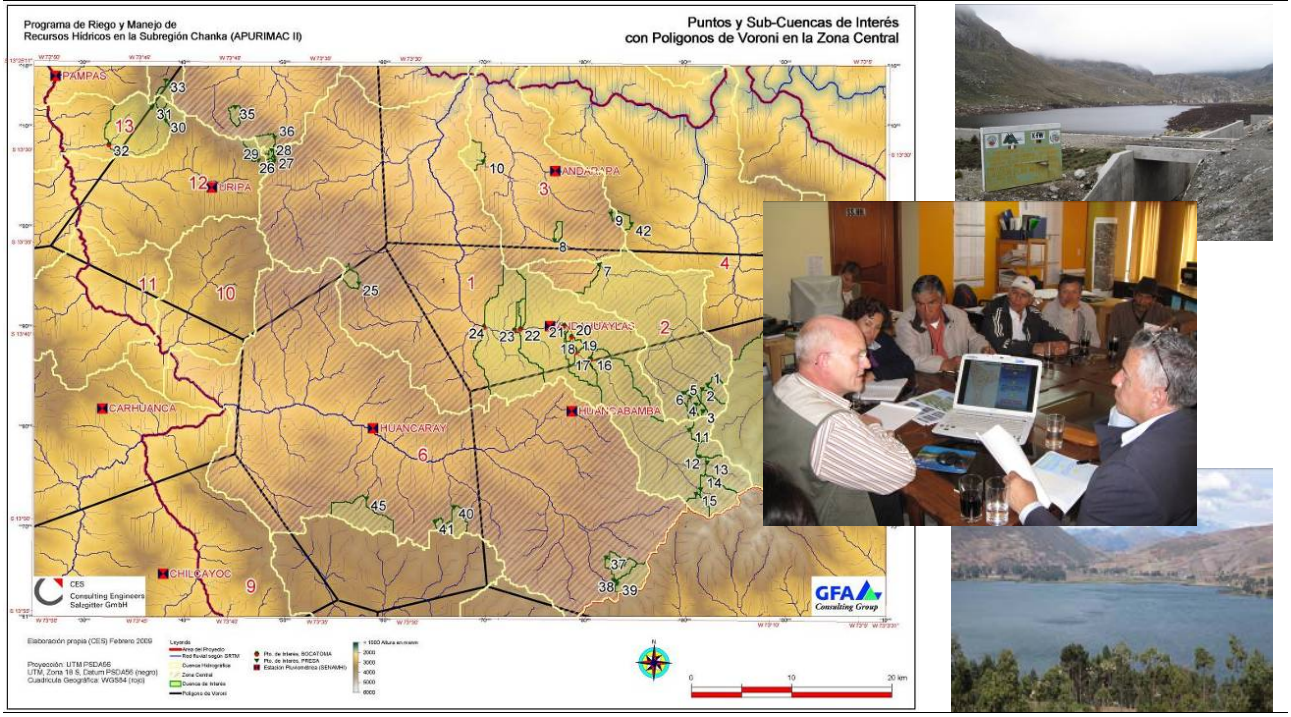
CES
Consulting Engineers
Salzgitter GmbH

PERU

IRRIGATION PROGRAMME APURIMAC II
CHANKA SUBREGION



Client	Regional Government of Apurimac
Financing	Kreditanstalt für Wiederaufbau, KfW
Duration of Services	09/2008 – 2009
Cost of Implementation	26.3 Mio. EUR
Cost of Study	0.53 Mio. Euro

Scope of Services

- Setup of hydro meteorological database and preparation of long term monthly time series
- Statistical analysis of hydro meteorological time series regarding their homogenity and reliability
- Trend analysis and evaluation of extreme events as basis for outlining of possible climate change effects
- Preparation of a hydrographic GIS incl. digital elevation models to support the water resources assessment
- Water resources modelling of 19 catchments that form the Chanka Region and for 45 points of interest
- Estimation of water demands (irrigation and human consumption) for the entire Subregion
- Elaboration of Water Balances for the 19 catchments
- Inventory of 600 irrigation schemes with 432 farmer committees and 19 irrigation commissions
- Preparation of 32 Feasibility Studies for short- and medium term projects
- Elaboration of Integrated Water Resources Management Plan

Brief Project Description

The Apurimac II Project Area is located in the Peruvian provinces of Andahuaylas and Chincheros which together form the Chanka Subregion, the Programme Zone includes the micro-catchments of the Rio Chumbao Irrigation System and of its neighbours. A Masterplan is to be developed at two levels, a) at recognisance level for the entire Subregion (5 200 km²) and b) at (semi)-detailed level for the Programme Zone (2 000 km²).

The Apurimac II Programme for Irrigation and Water Resources Management in the Chanka Subregion emerges from an agreement between the Regional Government of Apurimac and the KfW (German Development Bank giving a credit to the Republic of Peru), to establish long term oriented measures that promote rational water use under participation of all social actors in the provinces of Andahuaylas and Chincheros. In view of this objective the present Project includes the following studies:

- Study 1: Hydrological Study and Integrated Water Resources Management Plan;
- Study 2: Mid- and longterm Investment Programme; and
- Study 3: Package of Concrete Investment Measures

These Studies include various investigations which expose:

- Lack of maintenance of the main irrigation infrastructure;
- Disorganized water distribution; lack of measuring devices at intakes;
- Deficiencies within the irrigation organisations;
- Projects unfinished because of numerous budget or other problems;
- Conversion of agricultural lands to settlement areas; and
- Water losses in the conveyor system due to lack of maintenance of channel reaches.

These deficits generate low productivity, conflicts about water sharing and in consequence low incomes.

Apart from these problems there are a various projects, mostly developed by the municipalities, which are economically and technically not viable because of insufficient water resources. The bigger part of these projects focuses on the construction of infrastructure rather than on training and capacity building of user organisations or on water distribution. Therefore the present Project embraces:

- Reorganisation of actual Water Management on catchment level;
- Promotion of efficient water use, protection of natural water sources, and the convenient and adequate maintenance of irrigation infrastructure;

Well-ordered planning of water use by means of a Water Management Plan that focuses on a just distribution of resources, aiming at integrated and multi-sector management, sustainable use, and the conservation and increase of water yields from the catchments and from groundwater sources.