Tropentag, October 9-11, 2007, Witzenhausen

"Utilisation of diversity in land use systems:
Sustainable and organic approaches to meet human needs"

Water Resource Planning in the Piura River Basin

Magally Acuña Azarte

University National Agraria La Molina, Peru

Abstract

This article presents the results of a simulation of the Poechos reservoir and proposes a framework for water resource planning in the Piura river basin.

Peru, with the exception of the Amazon region, is a country with scarce water resources and conditions of extreme dryness. This implies that water has a high economic value and sometimes generates conflicts of interest and competition between different geographical areas and stakeholder groups. Its multiple competitive uses and importance for the agricultural and other sectors mean that the rational use of the water constitutes the basis of sustainable development.

The objective of this study is to develop a conceptual framework, which allows for suitable management of the water resource in the Piura river basin. The study follows four main steps. First, it reviews the information and data available in local and regional data bases. Second, it analyses water demand and supply, which is the precondition for the third step of developing the regional water balance. Finally, the AQUANET model is applied to optimise water flows in the area.

The ACQUANET model of flow networks is used to develop scenarios of sustainable development that account for the main water uses in the study area, i.e. population, the agricultural and energy sector, and protected areas among others.

The reservoir simulation shows that the available water resources in the Poechos reservoir do not represent a restriction for water demand during the studied period.

Recommendations are provided with regard to the optimisation of water flows in the study region.

Keywords: ACQUANET, Peru, simulation model

Contact Address: Magally Acuña Azarte, University National Agraria La Molina, San Juan de Miraflores, Peru, e-mail: magallyacuna@hotmail.com