Centro-Norte-Chile River Basin Information System (RBIS)

Franziska Zander[1], Nicole Kretschmer[2,] Alexandra Nauditt[3], Orlando Astudillo[2], Cristian Orrego[2] Rosa Godoy[2], Pablo Alvarez[4]

(1) *Friedrich-Schiller-University, Department of Geoinformatics, Hydrology and Modelling (DGHM), Germany, e-mail: franziska.zander@uni-jena.de*
(2) *CEAZA, Centro de Estudios Avanzados en Zonas Aridas, La Serena,Chile*
(3) *Institute for Technology and Resources Management in the Tropics and Subtropics at the Cologne University of Applied Sciences (ITT),Germany*
(4) *Faculty of Agriculture, Universidad de La Serena, Chile*

Abstract

Efficient and sustainable water resources management can only be granted if sufficient data and information are provided as a base for further planning. Especially the agricultural production has suffered a lot from the extreme drought during the last years in Northern-Central Chile. To provide meaningful as well as trustful information for decision makers and environmental scientists, relevant data and information (e.g. time series data or geospatial data) for the region should be managed, visualized, processed, presented and shared on a central place. Furthermore especially time series data should be accessible by modelers, and model results should be shared, managed and transformed in valuable information for all stakeholders as well decision makers. In addition to enable environmental modeling based on recent measurements (e.g. discharge or precipitation), time series data ought to be transferred and preprocessed automatically.

One example for such a system is the recently and still further developed web based North-Centro-Chile RBIS for data and information about the Limari and Petorca catchment in Northern-Central Chile. The North-Centro-Chile RBIS is based on the River Basin Information System (RBIS) developed at the Department of Geoinformatics, Hydrology and Modeling (DGHM) of the University of Jena and being used and further developed together with the ITT, Cologne and CEAZA, La Serena. RBIS focuses on the management of metadata and data (e.g. time series data, geospatial data) and the provisioning of standard compliant interfaces and services. For a cost-efficient operation and deployment the system is completely based on open source software. The modular structure allows a flexible adaptation and extension. Currently meteorological, hydrological and water quality time series data and basic geospatial data of the region are managed. For the automatic transfer and update of metrological time series data of the Limari catchment an interface to the CEAZA-Met web service provided by the CEAZA (Centro de Estudios Avanzados en Zonas Aridas) has been set up. Based on this, models can be applied to calculate for example meaningful indicator values or to run hydrological models.

The main features, interfaces and interaction with CEAZA-MET and how the system can support integrated natural resources and drought management will be presented.