Geophysical Research Abstracts,
Vol. 10, EGU2008-A-12074, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-12074
EGU General Assembly 2008

Decision Support System for Lake Tana Basin, Blue Nile, Ethiopia

Y. Aynekulu (1), Y. Mohammed (2,3), P.Van Der Zaag (3), F. FekAhmed (4)

Tigray Water Resources, Energy and Mines Development Bureau, Ethiopia, (yarekulu@yahoo.com), (2) IWMI NBEA, Addis Ababa, Ethiopia, (3) UNESCO-IHE Institute for Water Education, Delft, Netherlands, (4) Ministry of Water Resources Development, Addis Ababa, Ethiopia

The Lake Tana basin (source of Blue Nile) is located in the North-eastern part of Ethiopia. The basin is characterized by a huge potential to satisfy associated water needs not only within the basin, but for the whole country as well, this includes: irrigated and recession agriculture, hydropower, tourism, fishery, navigation, and biodiversity. At present, substantial development efforts are on-going to tap in this potential resource. These development activities are not planned/managed in an integrated approach to ensure sustainability of the resource for all stakeholders. The principle of Integrated Water Resources Management (IWRM) is weekly defined for the Lake Tana Basin case, i.e., poorly addressing the socio-economic needs in association with the ecosystem requirements. In this study we localized and adapted the principles of IWRM to the development of Lake Tana Basin. This is to understand and reconcile the conflicting interests among different stakeholders (agriculture, hydropower, wetlands), as well as upstream downstream interactions even across the border into Sudan and Egypt. The outflow from Lake Tana is very precious to downstream users since it forms the major part of the base flow.

The study is composed of three main components: (i) Collection of the existing water resource supply and demand data within the Lake Tana Basin and consultation with different stake holders to provide boundary condition for (ii) The Simulation of the Lake basin as a core component of the Decision Support System DSS, (iii) Testing different water allocation scenarios and assessing impacts in search of the optimal

development options.

The river basin simulation model is based on RIBASIM software (Delft Hydraulics, The Netherlands). The DSS serves not only to identify the optimal development scenario, but similarly important for the verification of the Ethiopia water policy currently under development. It shall also assist the provision of guidelines for the development of the Abbay River Basin authority and assess impacts to downstream users.