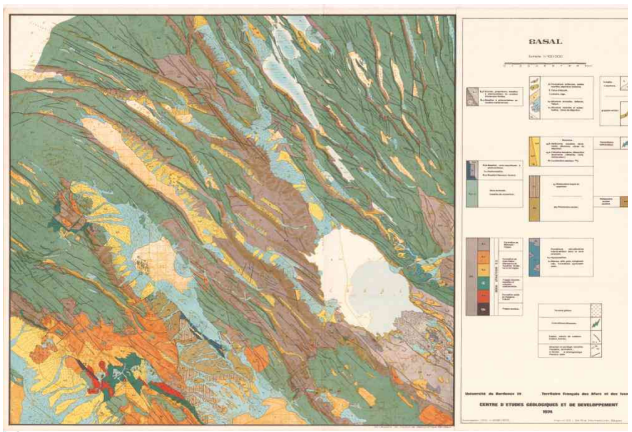
Water Resources Management & Capacity Building in Ethiopia



Background

Ethiopia has set an ambitious target to increase drinking water coverage as reflected in the Universal Access Plan (UAP) and the Growth and Transformation Plan (GTP). These strategic plans have been used as background against which the government and development partners are investing resources to contribute to the achievement of the set goals. The plans have been used to galvanize financial and technical support. Currently up to 80% of domestic water supply in Ethiopia is sourced from groundwater. Groundwater has been proven resources to support emergency water supply, urban water supply, livestock watering, and more recently shallow groundwater is identified as potential target for developing small holder or household irrigation.

Nevertheless Ethiopia's groundwater drilling program, particularly in arid areas of Afar, Somali, Oromia etc, is characterized by a remarkable failure. The main sources of failure are a) negative wells up on drilling following poor site selection; b) yield reduction of BH after few years of service (generally less than 3 years) due to variety of factors (recharge decline, environmental degradation, clogging of wells due to poor maintenance, etc) c) poor design and construction of wells after drilling (lack of human capacity) and d) return of poor quality water in drilled wells. It is documented that in an arid setting of Afar and Somali up to 50% of drilled wells return negative results. Salinity is often in excess of WHO drinking water quality standard. The Government of Ethiopia as well as the Development Partners has very well recognized this challenge. As a result, the post 2015 MDG has significant component of enhancing water resources sustainability.

The challenges of drilling programs are much pronounced in arid and semi arid region. Hydrogeological information is available for the Afar Region, but this is limited and fragmented. Failure rates in planning water development schemes are high. The costs of drilling in the Afar region are particularly high (reaching $1000/m due to the greater depth of the aquifers, remoteness and security issues). In addition, there are challenges relating to groundwater quality such as salinity in some areas that make it inappropriate for use.
On the other hand, it is proven also in cases where adequate geological information is available success rate of wells could be enhanced to 70%. UNESCO has undertaken and is undertaking multiple projects that gears towards improving groundwater drilling success through technology transfer in mapping, capacity building and investing in groundwater data acquisition, monitoring and storage.

Milestones

- ✓ Expand groundwater related capacity building and information base building to all Developing Regional States in Ethiopia.
- ✓ Link knowledge gained through UNESCO activity to assist Ethiopia's WASH program.
- ✓ Support the Regional Center for Eco-Hydrology as a future platform for capacity building and water resources management
- ✓ Convergence between hydrology and ecology programs in the UNESCO ADI activities via common research undertaking and support

Expected products

- ✓ Maps and CD ROMs containing all available information on groundwater resources of investigated regions.
- ✓ Groundwater Drilling targets maps for arid regions of Ethiopia (Afar and Somali regional state in particular).
- ✓ Short-term training of 200 early and mid career professionals.

Expected outcome

- ✓ Increased drilling success rate and increased gain on investment
- ✓ Increase water supply coverage
- ✓ Enhanced capacity of the young professional to expert level

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