

Integrated River Basin Management –Potentials, Current Uses and apprehensions of water and land resources in eastern escarpment of Abaya-Chamo sub-basin

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Executive summary

Together with the adequate rainfall in the tropical highlands, naturally fertile volcanic materials derived soils are productive for agriculture under careful handling. Nevertheless, the varied country's agro-ecological zones and landscapes from fragile lowlands to high plateaus with a diverse rugged terrain, climatic variability characterized by erratic but erosive rainfall, outdated farming practices, population pressure and limited incentives for farmers inhibit productivity. Notwithstanding exemplary traditional efforts in some localities in Ethiopia, annual crop and animal husbandry are generally exploitative. Thus, together with large-scale agricultural land acquisition and investment, agroecological and topographic setup, mis-management of land uses in Ethiopia have caused continued land use/cover dynamics leading to land and water resources degradation. Restoration efforts were also seems less effective, as they were poorly integrative of various aspects.

Lack of institutional/sectoral, professional as well as information integration has been scrutinized the success of large number of research and development project out puts. Many international and national efforts have been contributing to capitalize infant integration efforts in developing countries. Like many developing nations, Ethiopia is facing several challenges in relation to Integrated River Basin Management (IRBM) activities. This is among the presumed underlying causes which has resulted food insecurity, land and water resources degradation and poor human well-being. Similarly problems related to IRBM are conspicuously observed in eastern escarpment of Abaya-Chamo Sub-Basin (ACSB). In line with this, it is hypothesized that (a) rapid up- and midstream sub-basin degradation induced wetland deprivation and water quality

deterioration are becoming serious problems in the basin since the 1950s which in turn worsen the water and other ecosystem provision and the livelihood of inhabitants by affecting water resource potentials and hydraulic infrastructures, (b) lack of knowledge and detailed database about resource potentials of the sub-basin made integrated and coordinated planning difficult in the basin, and (c) population increase, sector-based water and land resources management and top-down planning approaches are the underlying framework conditions contributing for unsustainable resource utilization observed today in the basin.

In order to investigate the aforementioned issues, the research, right from the proposal development and problem identification to the implementation, will employ and adhere to participatory, inter- and trans-disciplinary approaches. Gender issues will be the particular concern of the research.

Box 1: Summary of research components (Sub-thematic areas) and their respective objectives;

Sub-theme I: Land resources potentials, challenges and prospects

(Habtamu T. & Gebremedin T.)*

- ✓ Sub-basin watershed degradation and interconnection in upper and lower catchments;
- ✓ Wetland degradation: shrinkage, collapses, and/or expansion
- ✓ Sedimentation challenges of Gedawo Dam and the entire watershed

Sub-theme II: Water resources potentials, challenges and prospects

(Fekadu W., Tenaw E. & Betelihem B.)*

- ✓ Hydrological and Hydrogeological system analysis
- ✓ Surface and groundwater water potential assessment
- ✓ Water quality assessment

Sub-theme III: Socioeconomic impacts of basin resources development and degradation

(Habtamu T., Fekadu W., & Biniyam E.)*

- ✓ Status and trend of dam reservoir-induced socioeconomic challenges and coping strategies;
- ✓ Socioeconomic impacts of basin resources degradation
- ✓ Ecosystem service value trend analysis of water and other ecosystems

Sub-theme IV: Integrated sub-basin wide planning of water & land resources

(Fekadu W., Tenaw E. Gebremedin T. & Betelihem B.)*

- ✓ Integrated water and land resources planning

**sub-theme leaders*