



Harnessing floods to enhance livelihoods and ecosystems services in Gash Area

WLE Research Project



**Research
Program on
Water, Land and
Ecosystems**



Launch Workshop: Harnessing Floods for Enhanced Livelihoods and Ecosystem Services



**Harnessing floods to enhance
livelihoods and ecosystems**

Vision



The management of land and water is optimized

- It is sustainable, productive and equitable
- Supported by discussion and cooperation and by scientific understanding
- Look at all the flood water related (ecosystem) services
- Special attention gender perspectives

What



- Explore how to optimize the **use of floods for agriculture and ecosystem services** to support livelihoods in different landscapes and also socio-economic settings in Sudan (and Ethiopia).

Why flood based farming systems



- Flood-based Farming Systems (FBFS) use floods to grow crops, fodder & recharge shallow groundwater.
- Contribute to local food security and economic development, poor beneficiaries
- Only source of water in semi-arid areas
- Total of 30 million ha in Afirca, often serving poor farmers.
- Estimated at 550,000 ha in Blue Nile Area
- Higher risks (unpredictable floods, high sediment loads and frequent changes of riverbeds).

Problem statement



- Sudanese government and farmers investing in the improvement of spate irrigation.
- Not known how all these interventions interact with other functions provided by floods at the local and landscape level
- Not known how these interventions affect population groups, particularly rural poor women – but also farmers/ pastoralists and rich-poor persons

Eco-system services

- Water for direct agriculture
- Water for direct drinking water
- Water for recharge of groundwater
- Water for livestock
- Soil moisture for fertilitiy
- Positive effects of sediment
- Negative effects of sediment
- Useful 'wild' crops and plants
- Mesquite
- Effect of water on climate
- Others?

Distribution of water for agriculture and rangeland



Water for recharging wells



Sediments – good and bad



Wild vegetation



Controlling degradation of land



Upstream downstream approach



- FBFS are affected by development elsewhere outside and within the systems.
 - For example, upstream watershed improvement can smoothen peak flows and reduce sediment loads.
 - **Sudan: interventions in upstream system affect downstream “Gash die”**

Include stakeholders



- From start to finish
- From farmers to decision makers at all relevant levels
- Male, female, youth
- Those who benefit, and those who may loose

How



- Research for development
- Improving decision making
- Inform ongoing or planned interventions with science based insights
- Basin perspective: impact of local intervention on larger landscapes
- Incorporate gender and ecosystems approach

Research



Question 1:

- What is the impact of current investment plans of upstream agricultural development on downstream flood based farming systems and livelihoods, in particular for women?

Question 2:

- What is the added value of incorporation of gender and ecosystems perspective in investment plans in flood based farming?

Question 3:

- What is the most 'efficient' use of floods (from different angles) in the Raya watershed and valley and Gash basin? And what interventions and set of intervention support this?

3 steps



- 1) assessment of the baseline situation, separate for men, women and youth;
- 2) Impact proposed interventions; and
- 3) alternative scenarios and trade-offs and synergies between benefits, costs and their distribution over stakeholder groups and the environment.

Outputs



- Importance of gender and ecosystem approach in FBFS development is endorsed
- Identification, discussion (and acceptance) of improvements
- approach into educational curriculum of UNESCO-IHE, and Sudan Gezira University/Hydraulic Research Centre

Who

Consortium partners

- Spate Irrigation Network Foundation/
MetaMeta
- The Hydraulic Research Centre of the Ministry
of Water and Electricity, Sudan.
- UNESCO-IHE Institute for Water Education, the
Netherlands

and all of you