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Assessing and upscaling water harvesting potentials: A case study in the Central Rift Valley, Ethiopia

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Introduction

- Agriculture is the mainstay of the Ethiopian economy.
- The agricultural sector in Ethiopia heavily depends on rainfed agriculture.
- The amount of rainfall and the duration of the rainy season are very variable.
- Crops yields and incomes are low, food shortages and famines occur frequently.
- The potential for (perennial) irrigated agriculture is often limited.
- Global climate change may aggravate the situation.

⇒Adaptive strategies should focus on increasing the resilience of rain-fed farming systems

Better management of the rainwater needed

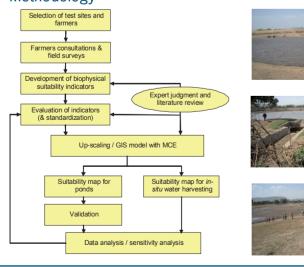
Assess seasonal water harvesting potentials

Regional planning of water harvesting

- Integrate biophysical suitability indicators and indigenous knowledge.
- Use GIS functionalities (a.o. upscaling to large spatial units).
- Conduct multi-objective multi-criteria evaluations of suitability indicators.

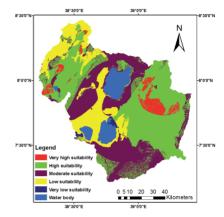
Methodology

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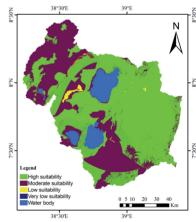


Example

Assess the potential of macro- (ex-situ) and micro- (in-situ) catchment water harvesting techniques in the Central Rift Valley.



Suitability map macro-catchment water harvesting



Suitability map of micro-catchment (in-situ) water harvesting.

Conclusions

- > 50% of the CRV is suitable for micro-catchment (in-situ) water harvesting (from a biophysical perspective).
- ± 50% is suitable for macro-catchment (ex-situ) water harvesting.
- The potential for water harvesting in the CRV is still largely unexploited.
- The methodology can assist planners and policy makers in regional land and water management (quick-scans).

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