Integrated water resource allocation in Harar People Regional State, Ethiopia

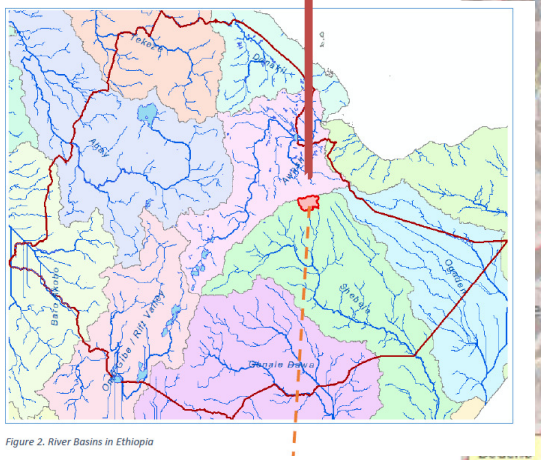

Figure 2. River Basins in Ethiopia

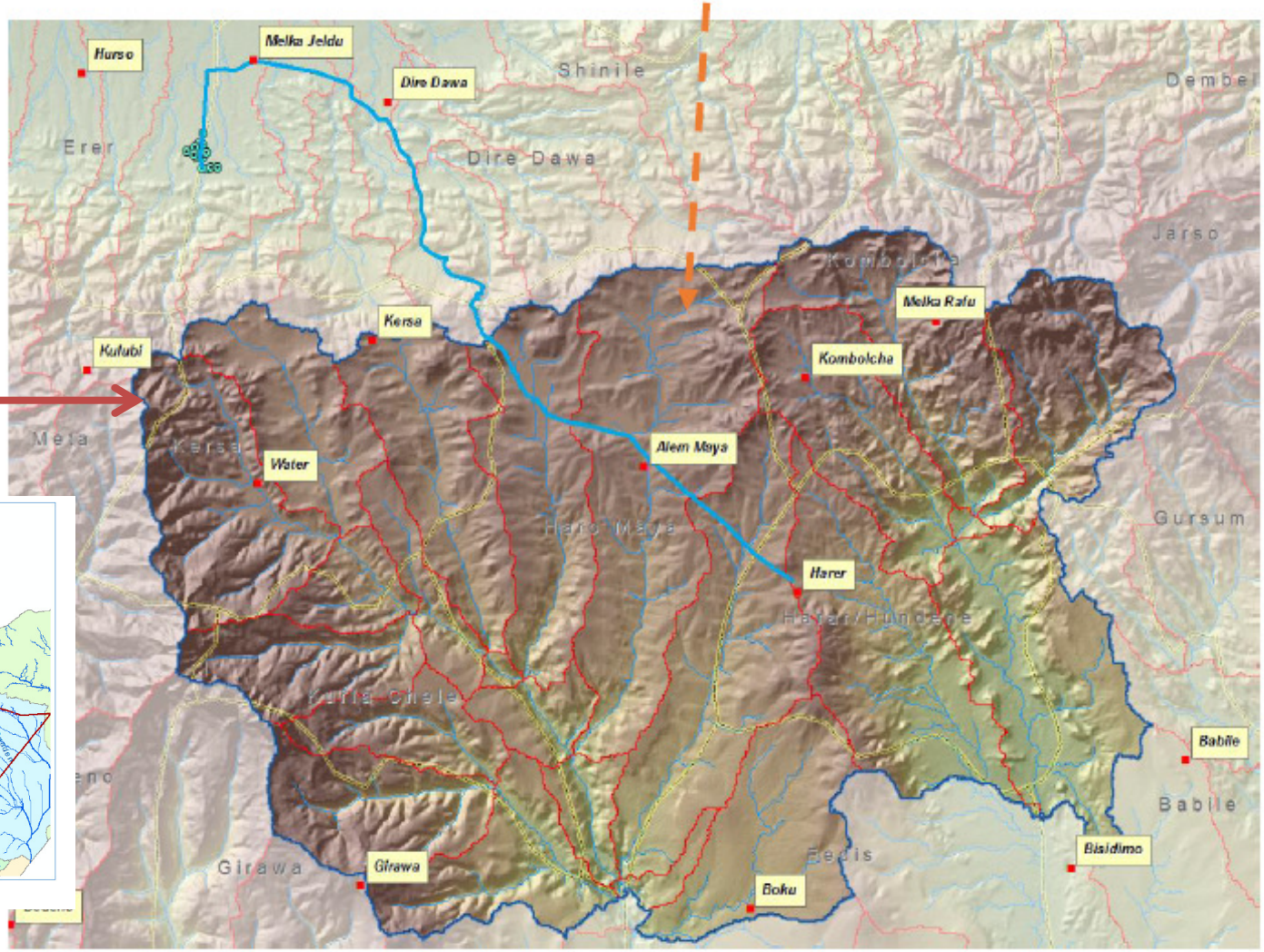

Figure 3. Wadi Gobele and Wadi Erer Sub Basinsktkt

Current status of the water resource allocation in Harar People Regional State

- The water demand in HPRS
  - 2016: 7 MCM/Y
  - 2030: 26 MCM/Y

- In 2030 the regional water supply in HPRS will not meet the water demand in the urban and rural areas of people, irrigation of farmers and industry

- The current water supply system is not sustainable and vulnerable to seasonable rainfall changes and first flush floods

- The current supply system is costly, energy consuming and the life span is short

- Water supply sources are polluted and urban water is contaminated

Green Intervention 1
Groundwater Development

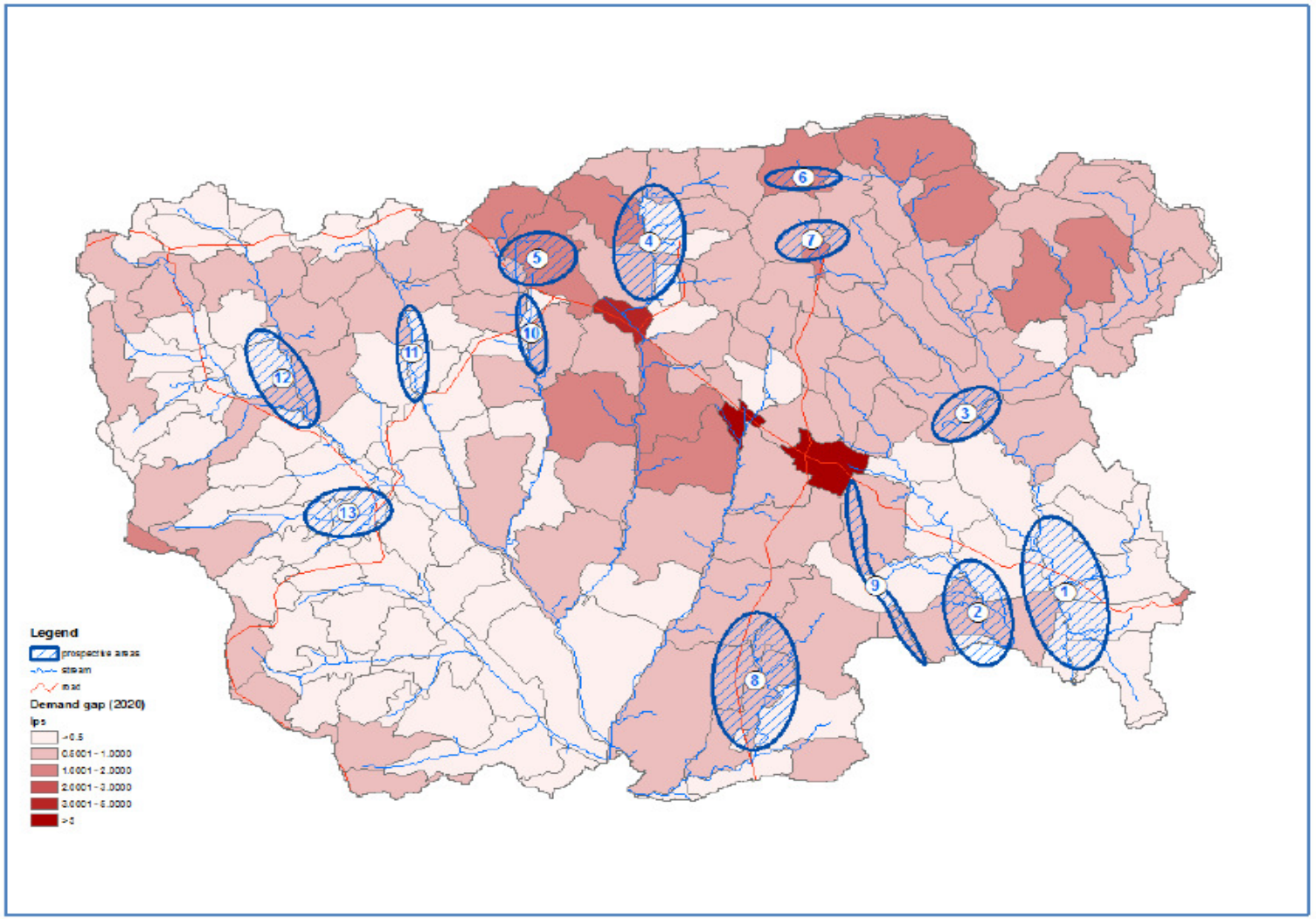

Figure 13 Increase in drinking water demand (2020) and prospective areas for water development

Green Intervention 1
Groundwater Development

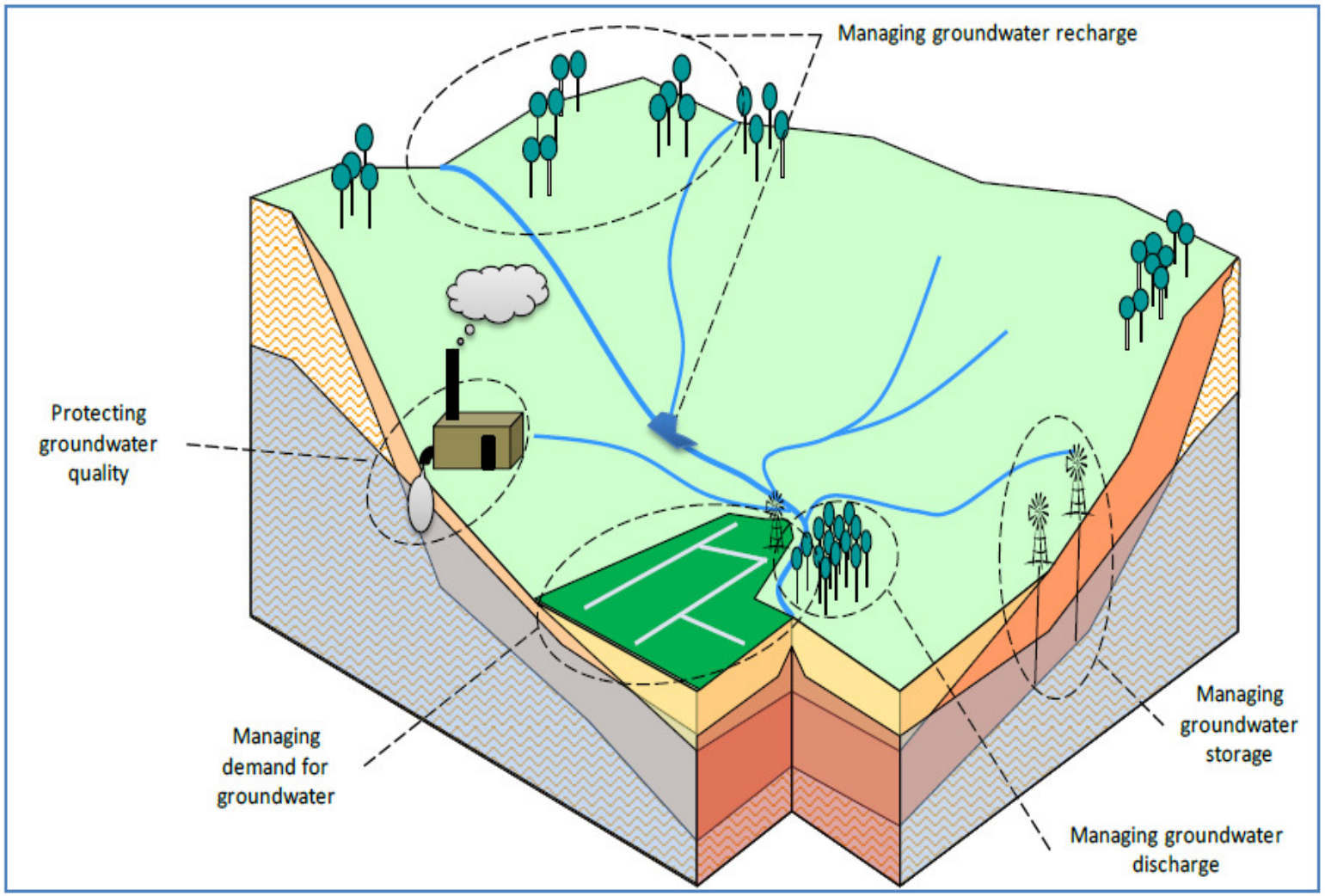

Figure 8. Management measures for adaptation of groundwater

Green Intervention 2
A Green Harar City

Water harvesting and natural fresh water storage

Water harvesting and storage capacity are improved within the Harar city, for example by constructing urban wadi's and green spaces, like a botanical gardens or city parks. The water bodies collect and store the rain water and recharge the ground water.

Constructed Wetland, Green water treatment plant

Local hotels, factories, people and hospitals increasingly produce waste water which is currently not treated. A green water treatment plant – a constructed wetland (CW) - offer a solution. The CW operates robust and do not produce sewage sludge, which eliminates need for sewage sludge treatment.

Drainage, Sewage system and waste collection

To collect solid and liquid waste an infrastructure in the city needs to be build and operated.

Hakim Gara reforestation and nature protection

By reforesting Hakim Gara and through nature protection and conservation activities the catchment area of Harar city and Harar Brewery can improve. At least six wells have been identified that supply water from 'Hakim Gara'.

Green Investment proposal in HPRS to the Green Climate Fund

Critical elements of an investment proposal:

- Theory of Change: investment – impact relation
- Deliver on core impact indicators
  - Mitigation: XXX reduction CO2 emission of investment
  - Adaptation: XXX beneficiaries / saved lives of investment
- Viable Business case:
  - Cost – Benefit analyses
  - Co finance (public/private)
  - Commercially not viable
- Ethiopian national government:
  - Lead promoter
  - Fit the national climate strategy

Next step: develop investment proposal to Green Climate Fund

- Ethiopian National Government promotes investment to Green Climate Fund;
- HRSP presidency office takes the lead in developing investment proposal;
- Multi Stakeholder Platforms of stakeholders around HPRS to design the investment;
- Green Utility Network Partners Vitens Evides International, World Resource Institute, IUCN provide technical support;