Sand dams in Ethiopia– Wateroogst 4

Laren – 9th May 2016

Content of the presentation

- Who we are
- Southern Nations, Nationalities and Peoples' Region – Ethiopia
- The situation on the ground
- Water harvesting and sand dams for development
- Existing projects
- The new project

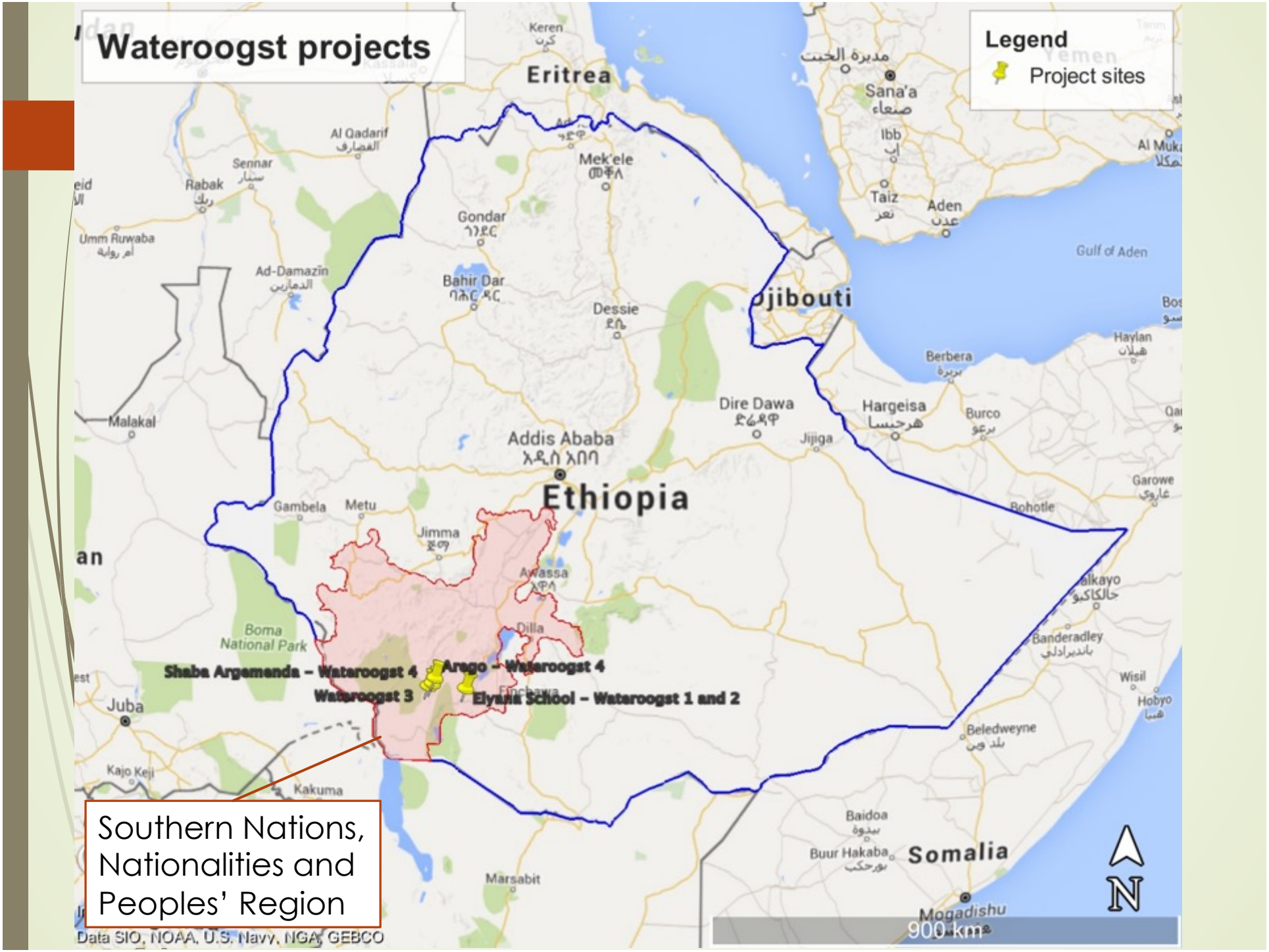
Who are we?

International (Dutch) organization with branches in Ethiopia, Kenya, Nepal, Turkey.

- Technical assistance, research and project management (PME) – over 10 years of experience
- Water development is our core focus
- Skilled staff near the project sites

(Southern Ethiopia People Development Association) is a non for profit, Ethiopian organization.

- Grassroots Members and branches spread over SNNPR
- Focus on health, HIV/AIDS and water
- Always work with community and local government


Wateroogst projects
Legend
Project sites
Eritrea
Yemen
Ethiopia
Somalia
Djibouti
Addis Ababa
Gulf of Aden
Shaba Argemenda – Wateroogst 4
Arego – Wateroogst 4
Wateroogst 3
Elyana School – Wateroogst 1 and 2
Southern Nations, Nationalities and Peoples' Region
Boma National Park
Mek'ele
Gondar
Bahir Dar
Dessie
Dire Dawa
Hargeisa
Jimma
Awassa
Dilla
Juba
Kakuma
Kajo Keji
Marsabit
Baidoa
Buur Hakaba
Mogadishu
Berbera
Burco
Jijiga
Bohotle
Garowe
Beledweyne
Banderadley
Wisil
Hobyo
Haylan
Taiz
Aden
Sana'a
Ibb
Al Qadarif
Sennar
Rabak
Umm Ruwaba
Ad-Damazin
Malakal
Gambela
Metu
Keren
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
900 km
N

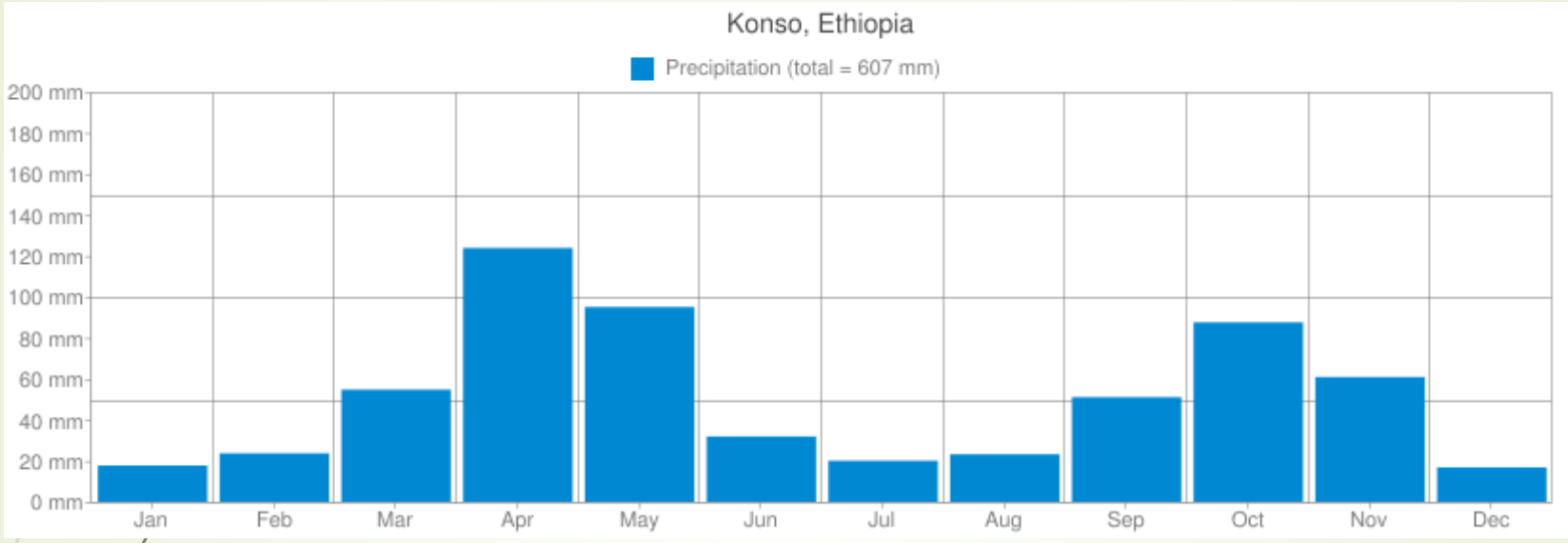
The situation on the ground

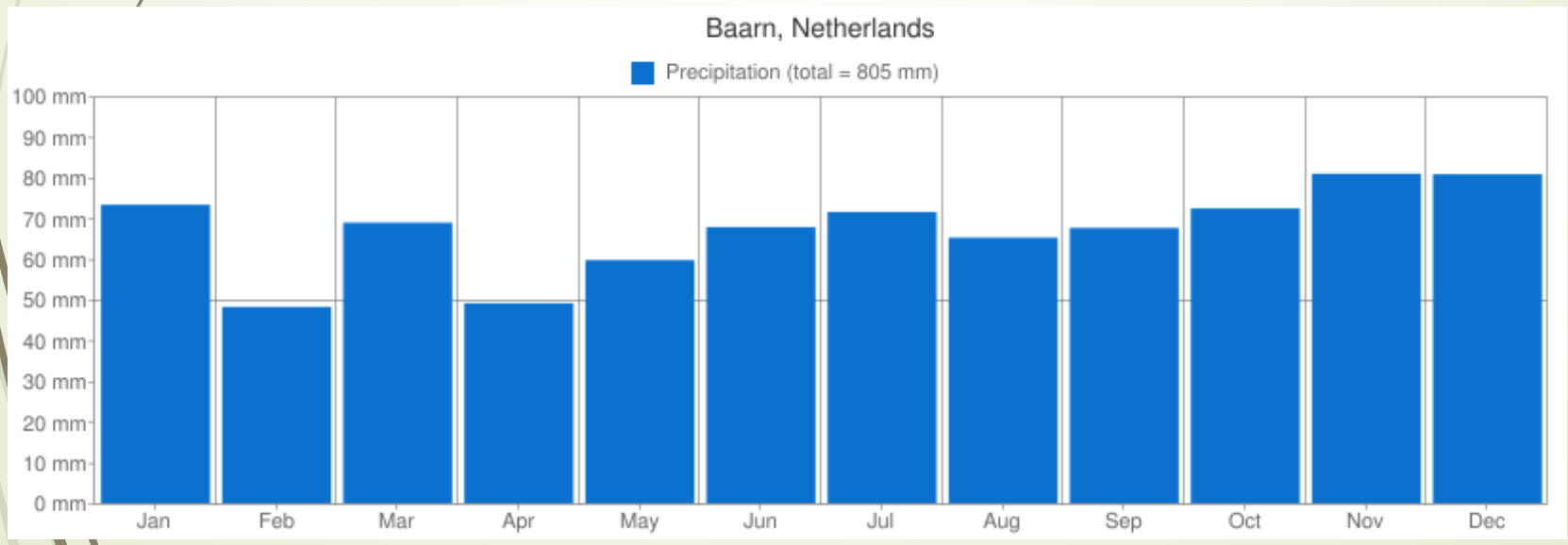
- SNNPR is one of the 9 Ethiopian regional states and encloses 56 nations, nationalities and languages.
- People living in rural areas are suffering the most from the lack of water and sanitation:
  - Only 21% of Ethiopians have access to safe water*
  - Only 22% have access to proper sanitation facilities**
  - Long distances to water sources
- The primary victims are women and children
  - Diseases, abduction, rape and poor school attendance

* *Access to Potable Water by Country, Childinfo.org, viewed, 2013*

** *Improved Sanitation Facilities as of 2008, The World Bank*

Unpredictable and scattered rainfall





Current situation

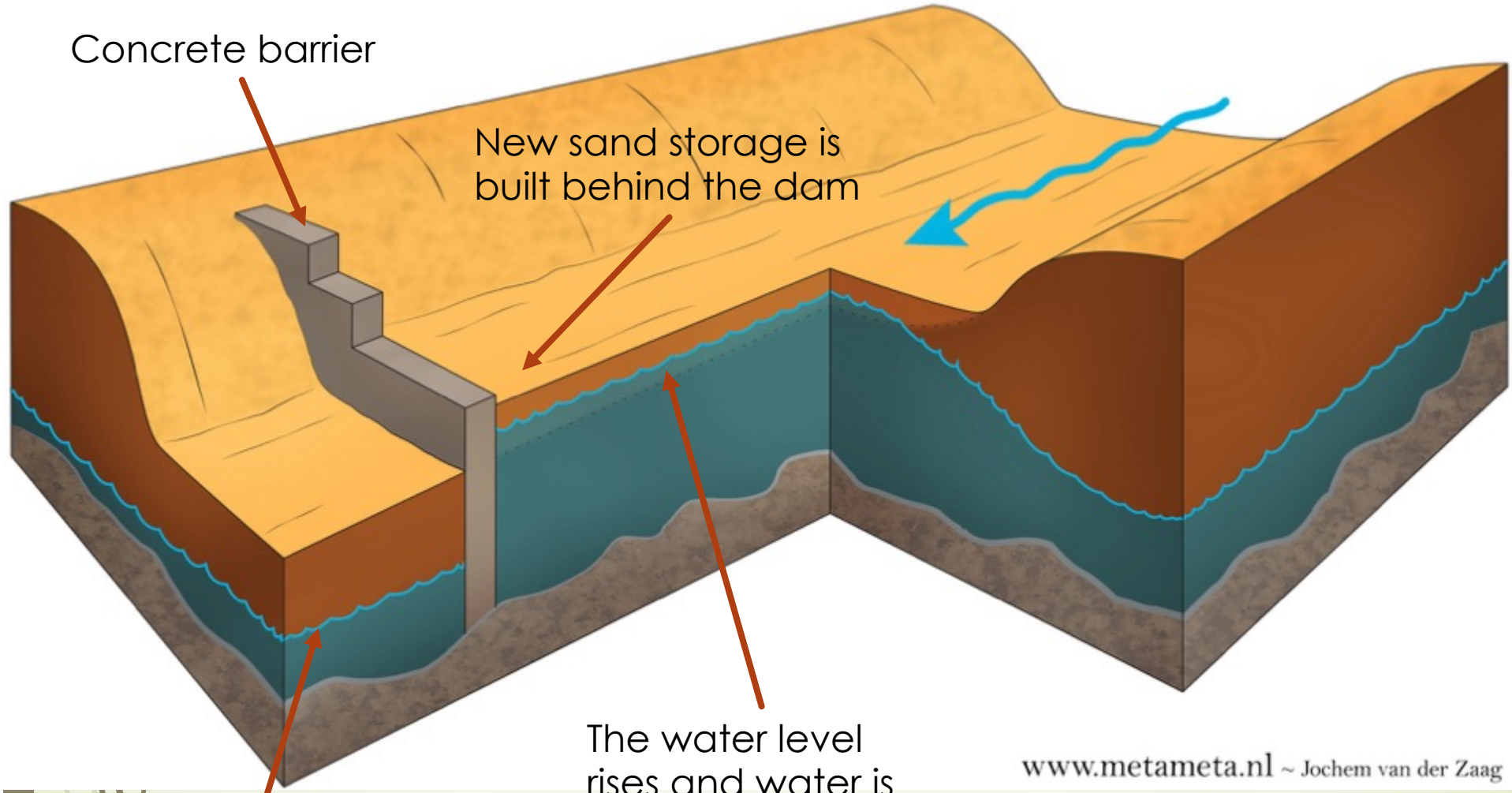
- In arid and semi-arid areas people rely on water trapped in the sand of seasonal rivers.
- The water is retained in the space between sand grains (Up to 40% in volume).
- Water is protected from the sun and from direct pollution
  - higher quality than surface water
  - Low evaporation losses
  - No mosquitos

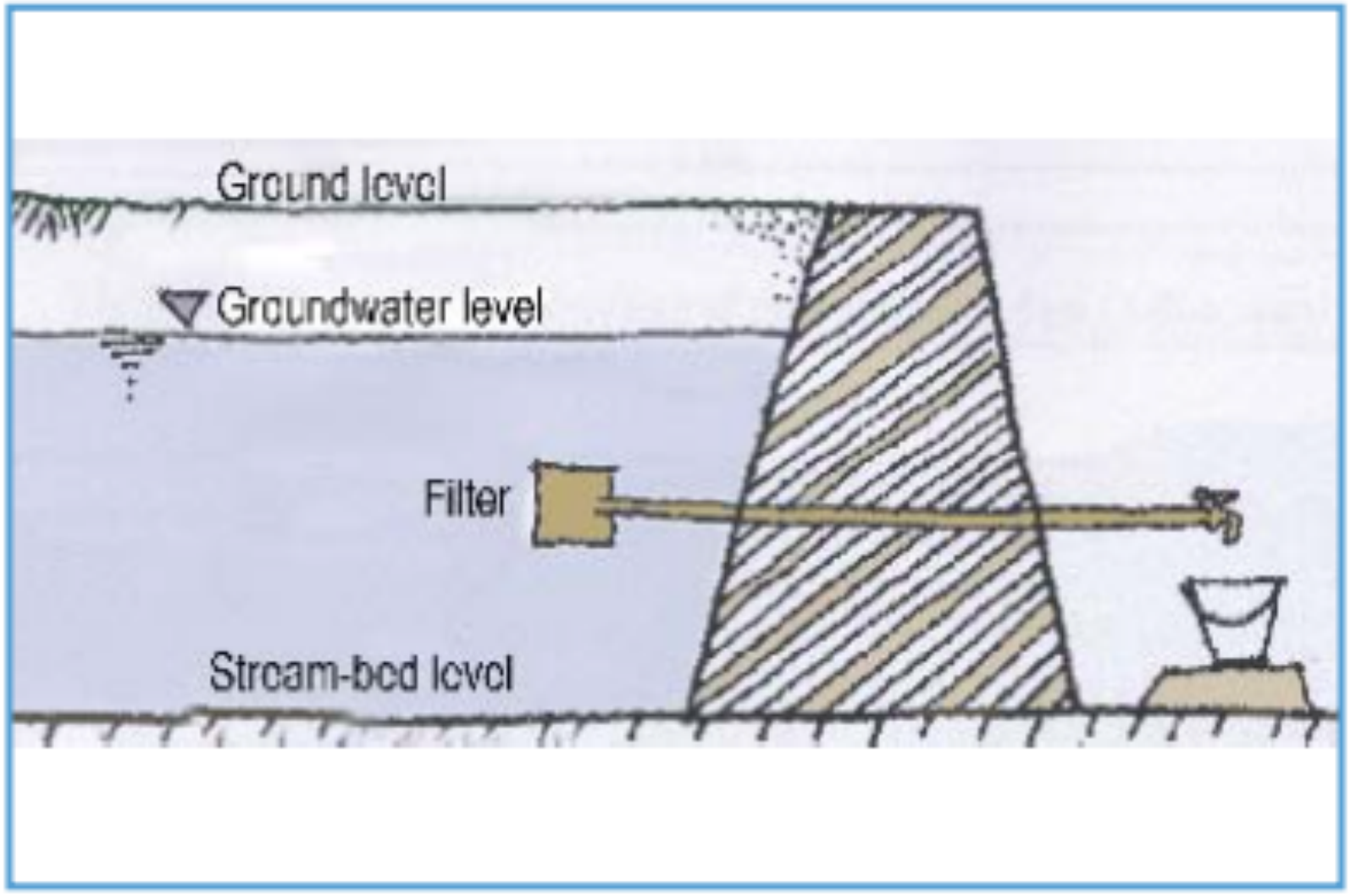
Traditional way to fetch water

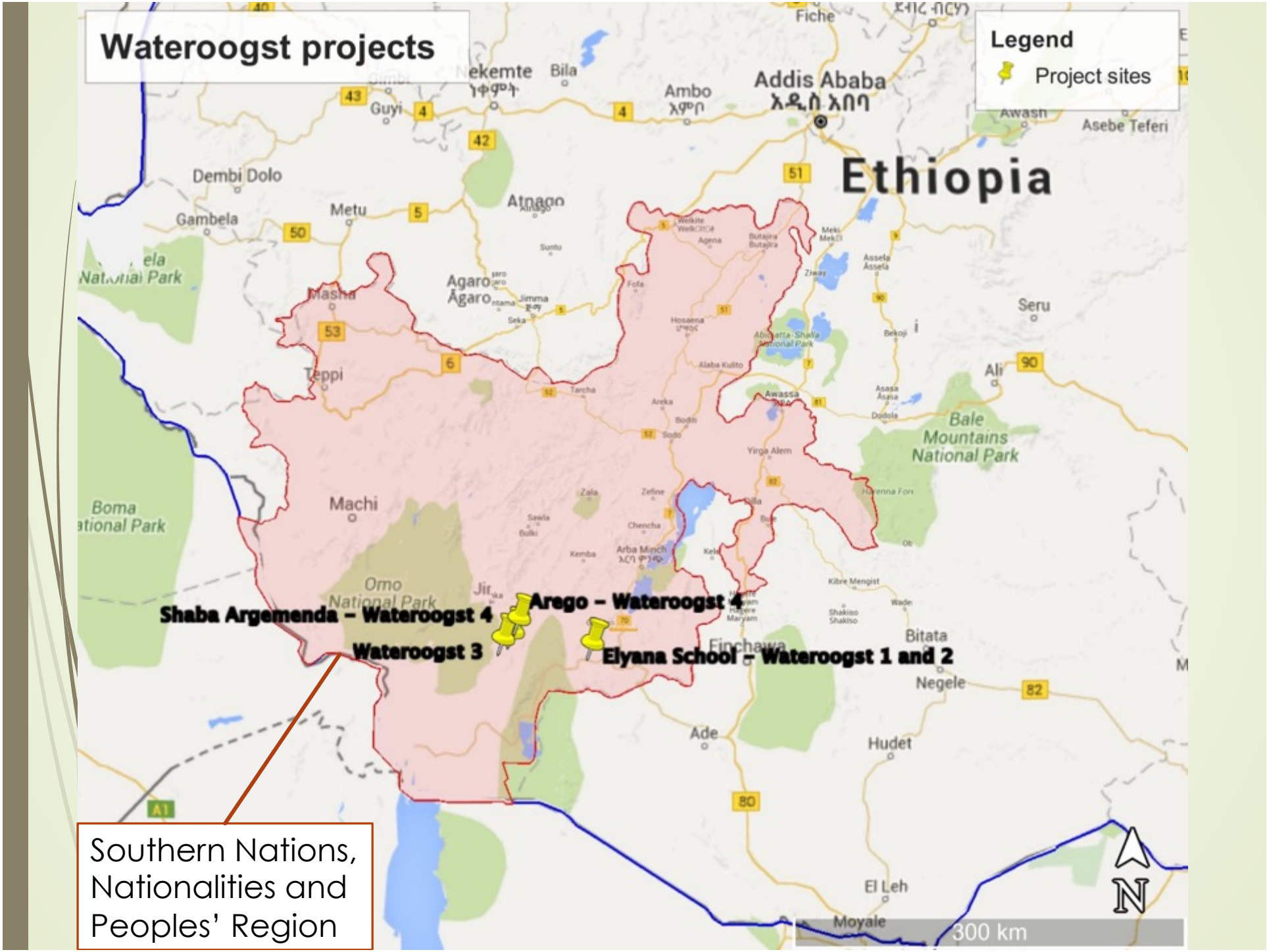
Traditional way to fetch water

The sand dam concept

- Sand dams increase water retention capacity of sandy, seasonal rivers;
- A concrete barrier is built to:
  - Increases the level of water in the sand
  - Build up sand storage (to hold water)
- Sand filters water → higher quality than surface water


Concrete barrier
New sand storage is built behind the dam
The water level rises and water is available for longer
"Natural" water level in the sand
www.metameta.nl ~ Jochem van der Zaag


Ground level
Groundwater level
Filter
Stream-bed level


Wateroogst projects
Legend
Project sites
Ethiopia
Addis Ababa
አዲስ አበባ
Fiche
Bila
Ambo
Guyi
Dembi Dolo
Gambela
Metu
Agaro
Jimma
Seka
Masha
Teppi
Machi
Omo National Park
Boma National Park
Bale Mountains National Park
Seru
Ali
Awash
Asebe Teferi
Negele
Bitata
Hudet
Ade
Finchawa
Moyale
El Leh
Shaba Argemenda – Wateroogst 4
Arego – Wateroogst 4
Wateroogst 3
Elyana School – Wateroogst 1 and 2
Southern Nations, Nationalities and Peoples' Region
300 km
N

Wateroogst 1

Wateroogst 1

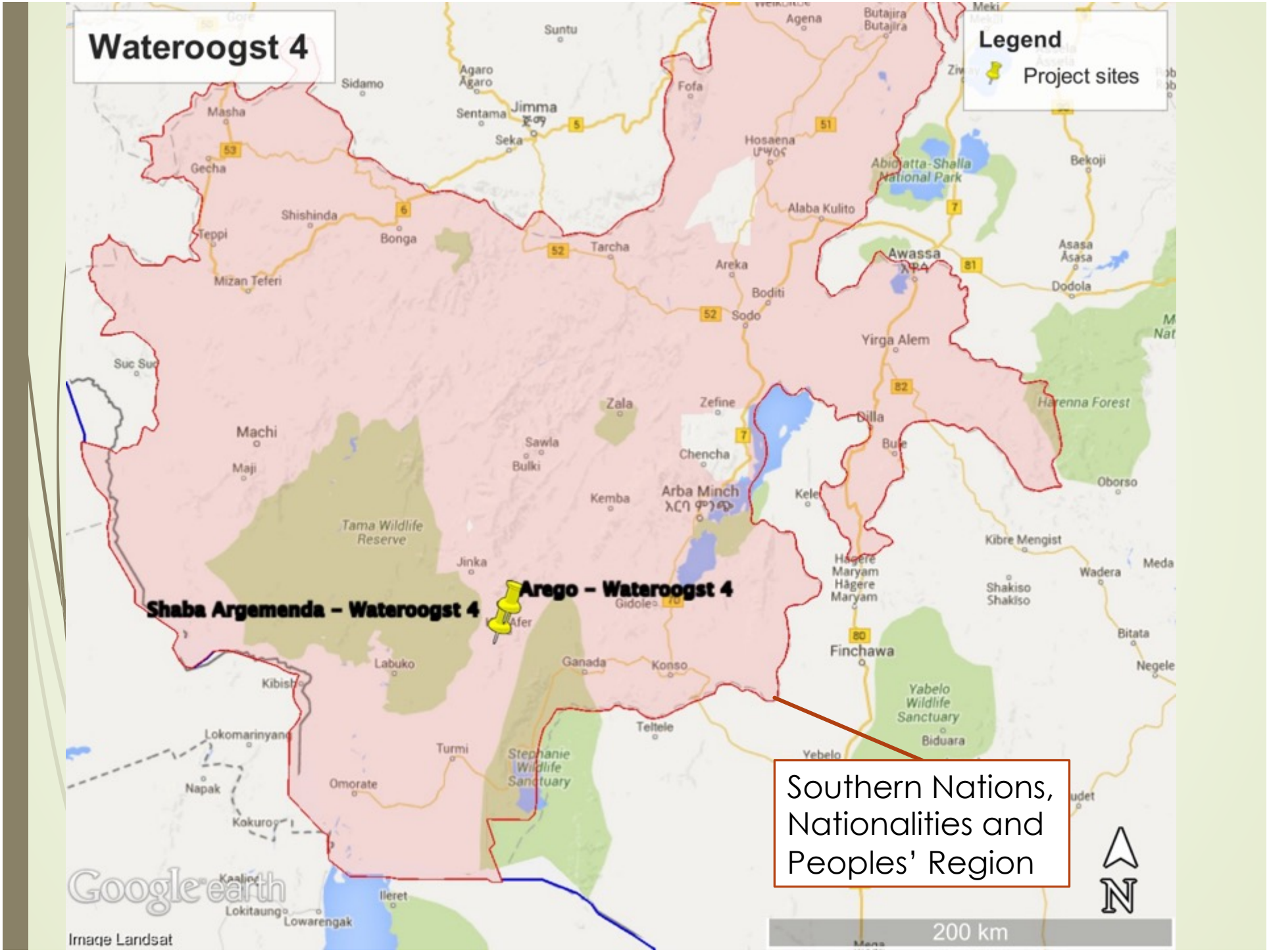
Wateroogst 2 – Sand dam

Wateroogst 2 – Sand dam

Wateroogst 2 – Sand dam

Wateroogst 2 - Sub-Surface dam

- Sand dam handed over to the community 10 days ago
- Subsurface dam almost finalized


Wateroogst 4
Legend
Project sites
Arego – Wateroogst 4
Shaba Argemenda – Wateroogst 4
Southern Nations, Nationalities and Peoples' Region
Sidamo
Agaro
Jimma
Sentama
Seka
Fofa
Hosaena
Masha
Gecha
Shishinda
Teppi
Bonga
Mizan Teferi
Tarcha
Areka
Alaba Kulito
Awassa
Bekoji
Asasa
Dodola
Boditi
Sodo
Yirga Alem
Suc Suc
Machi
Maji
Zala
Zefine
Sawla
Bulki
Chencha
Dilla
Bule
Harenna Forest
Oborso
Kemba
Arba Minch
Kele
Tama Wildlife Reserve
Jinka
Kibre Mengist
Wadera
Meda
Shakiso
Finchawa
Bitata
Negele
Labuko
Ganada
Konso
Kibish
Yabelo Wildlife Sanctuary
Biduara
Teltele
Lokomarinyang
Turmi
Stephanie Wildlife Sanctuary
Napak
Omorate
Kokuro
Ileret
Lokitaung
Lowarengak
Google earth
Image Landsat
200 km
N

Wateroogst 4 – Following the positive outcomes..

- MAIN interventions:
  - 2 sand dams for Arego and Sheba Argemenda schools (with pumps)
  - Training of local committee and schools
- ADDITIONAL interventions:
  - Rooftop water harvesting
  - Construction of a toilet block per school
  - Handwashing facilities in the schools

Expected benefits

- Primary benefits:
  - 203 students and 10 teachers have access to:
    - Drinking water
    - Improved latrines
  - 45 students and teachers receive training on hygiene and sanitation
  - 30 water committee members trained on operation and maintenance
- Secondary benefits:
  - 3,838 people of the community have access to safe drinking water

Arego School


Sand dam
location


የኢትዮጵያ ካርታ
Thank you!
META
SEPDA
Rotary