Supported self-supply

An innovative approach to finance SDG6.1 in rural areas with impact on SDG's on Poverty, Food, Gender, Work & Climate

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SMART Centre Group and MetaMeta

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Training the local private sector in Simple, Market based, Affordable and Repairable Technologies

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www.metameta.nl
www.smartcentregroup.com

METAMETA

- Improve livelihoods in the Global South through Innovation, research, technical assistance, capacity building,…
- Joined GOPA /AFC Consulting Group in 2024.
- Teams in Netherlands (Wageningen), Ethiopia, Kenya, Turkey, Yemen, Nepal. 40+ staff.
- Host of the SMART Centre Group

GROUNDWATER; KEY FOR RURAL DEVELOPMENT

- For domestic & productive use
- 90% of farmers in the global north had wells!
- Farmers in the global south can only develop if they have water at premises, in general a well
- Enormous potential of untapped groundwater in Sub-Saharan Africa
- Essential to adapt to climate change

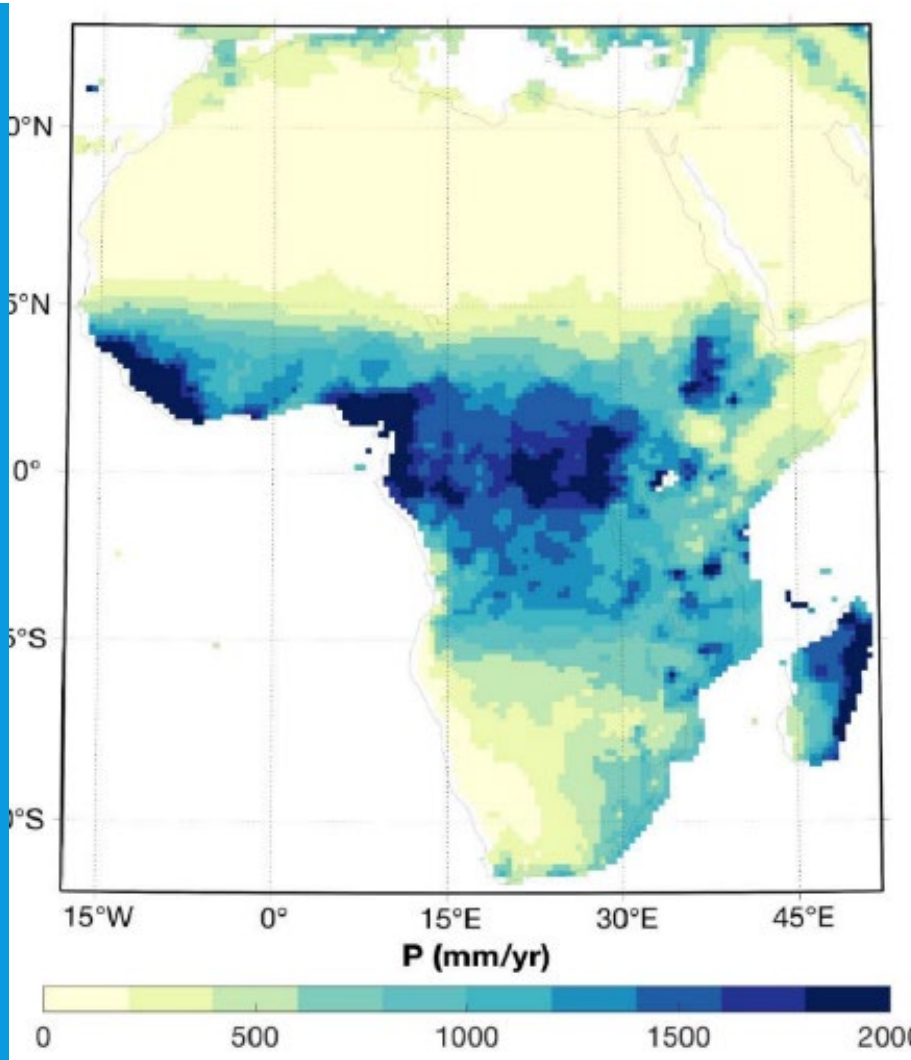
ADAPT TO CLIMATE CHANGE?.... STORE WATER!

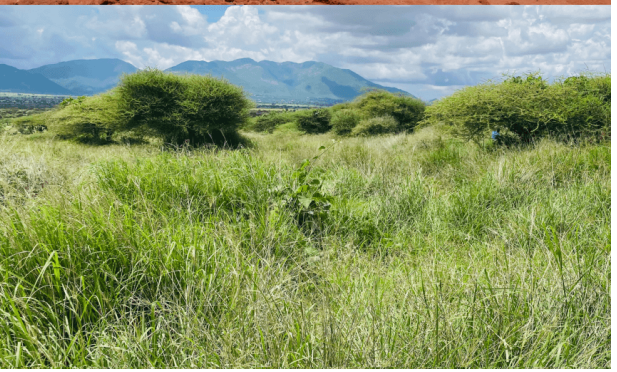
The cheapest option in most areas.... Storing in the ground

- 80% of African farmers have plots of 0.5 - 2 Ha
- Many areas > 500 mm rain / yr = irrigation potential

Condition ?...

- Affordable technologies
- Water balance. What is pumped out should be recharged → essential within landscape restoration



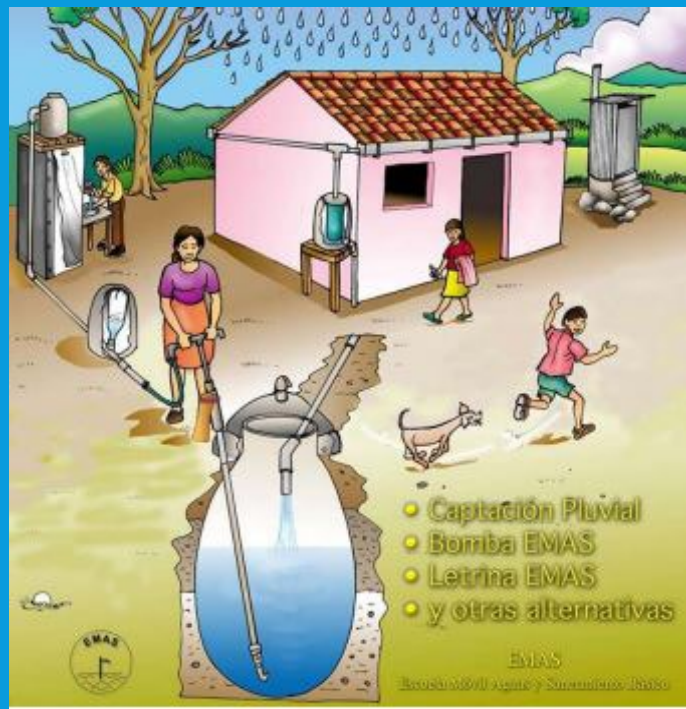


RAINWATER HARVESTING / GROUNDWATER RECHARGE AT LARGER SCALE

- Half moon bunds (JustDiggit)
- Run off water from roads (Green Roads for Water)
- Sand dams (Kitui dams)
- Sponge cities
- Water Spreading Weirs

RAINWATER STORAGE AT SMALL SCALE
HOUSEHOLD LEVEL

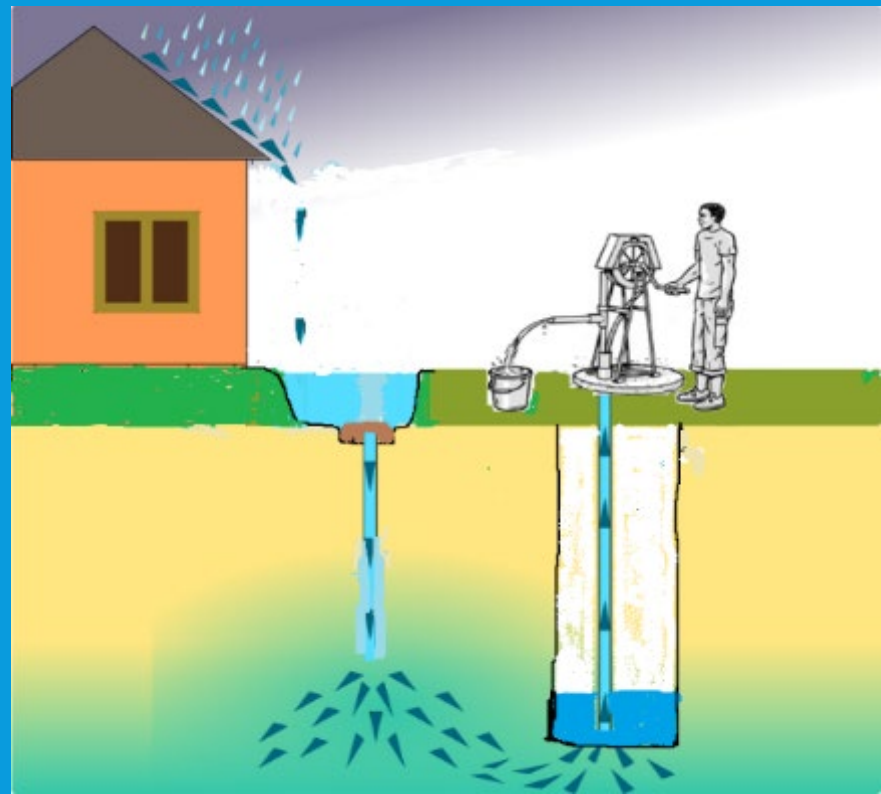
Plastic tanks, Plastic liners	$5-$10/m3
Wire-brick cement tank	$15-$20/ m3
EMAS Underground tank	$10-$20/m3



GROUNDWATER RECHARGE AT SMALL SCALE
HOUSEHOLD LEVEL

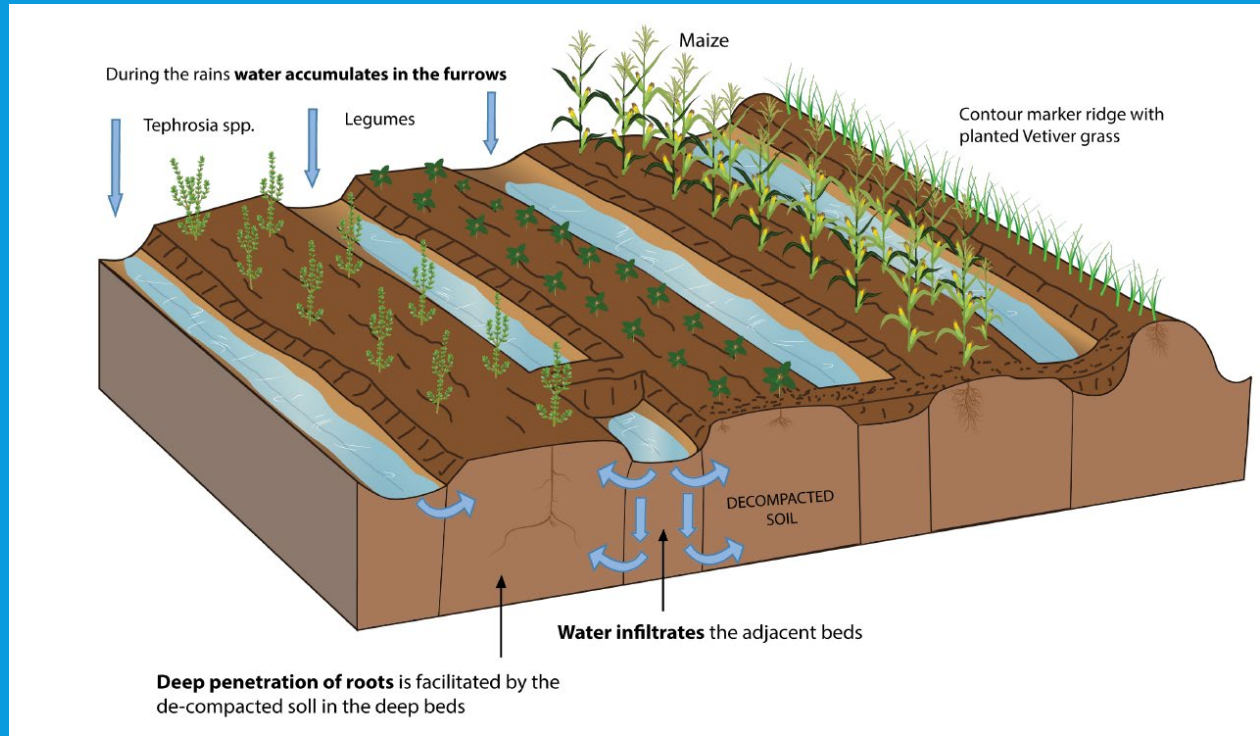
The Tube recharge

- Installed near wells that dry up
- Stores 50- 200 m3 / year
- Cost of materials; $20



GROUNDWATER RECHARGE
HOUSEHOLD / FARM LEVEL - DEEP BED FARMING

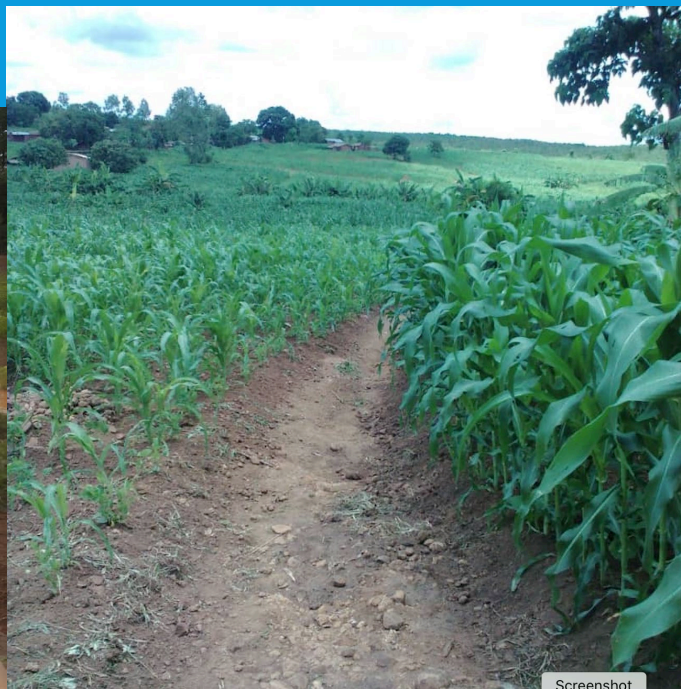
- Breaking the "hard pan" to 30 cm deep
- All rainwater infiltrates, even on slopes, during heavy rains
- Combined with Regenerative farming, mulching, minimum tillage, no fertiliser..



EFFECTS OF DEEP BED FARMING

- Yields from 2 to 6 tonnes/ha, without fertilizer
- Applied by 17.000 farmers in Malawi, may scale to 1 million.
- Recharge shallow groundwater (long term) & farmers become Catchment Managers
- Increased access to water for domestic use by households

Info: www.tiyeni.org



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WATER CHALLENGES RURAL SUB-SAHARAN AFRICA

- > 300 million lack "basic service" (source within 30 min. from home)
- 20 - 40% hand pumps broken due to lack of ownership or funds

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A SOLUTION? **SUPPORTED SELF- SUPPLY**
"BASIC SERVICE" AT $25/CAP

Supported self supply combines :

- SMARTechs Smart, Market-based, Affordable, Repairable Technologies.
- Local Ownership 1 family owner instead community. Water shared with 30-50 people
- Profit Productive use of water = food and income = money for repairs
- Training Long term coaching to guarantee quality. Lesson is "Simple is not easy"

EXAMPLES **SUPPORTED SELF-SUPPLY**

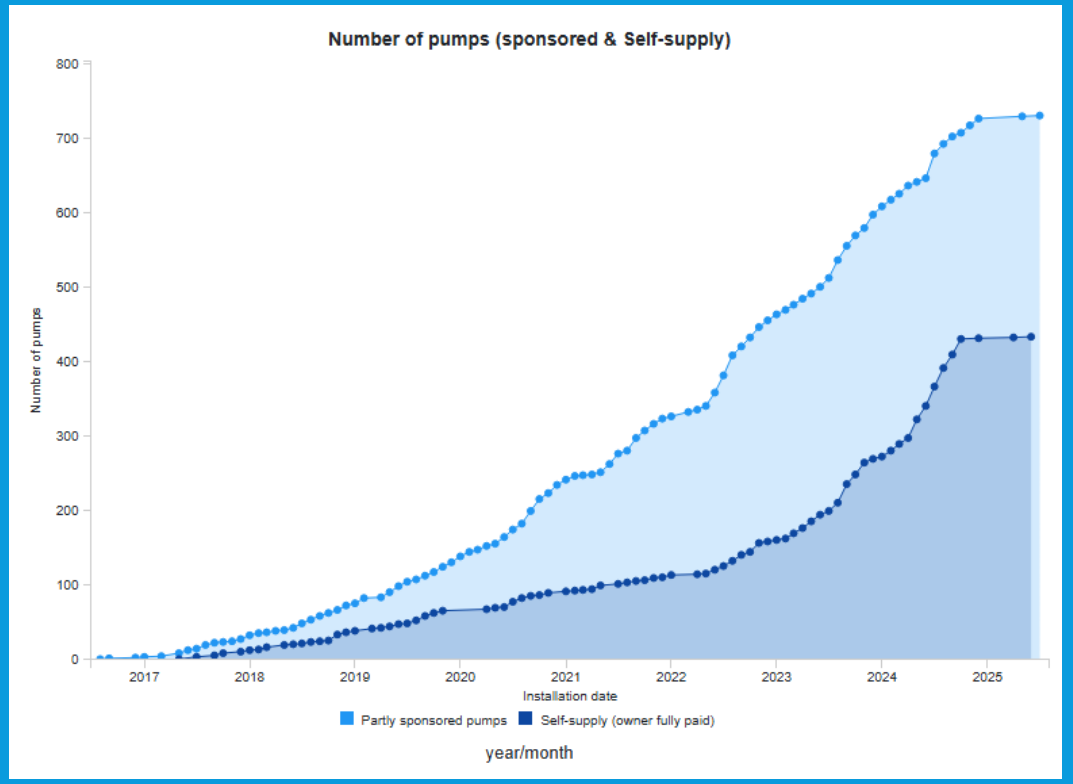
Zambia

600 subsidized wells. Results:

- 1 well of $1000 serves 40 people, so $25/person
- >90% pumps function! (IRC evaluation, 2022)
- Demand creation, over 400 families fully paid themselves (self-supply)

Tanzania

- Started with 700 subsidized wells/ pumps in 2008
- Now >15.000 rope pumps, 80% self-supply



mWater monitoring of pumps in Zambia (Jacana, Aug 2025)
https://jacana.help/mwater/

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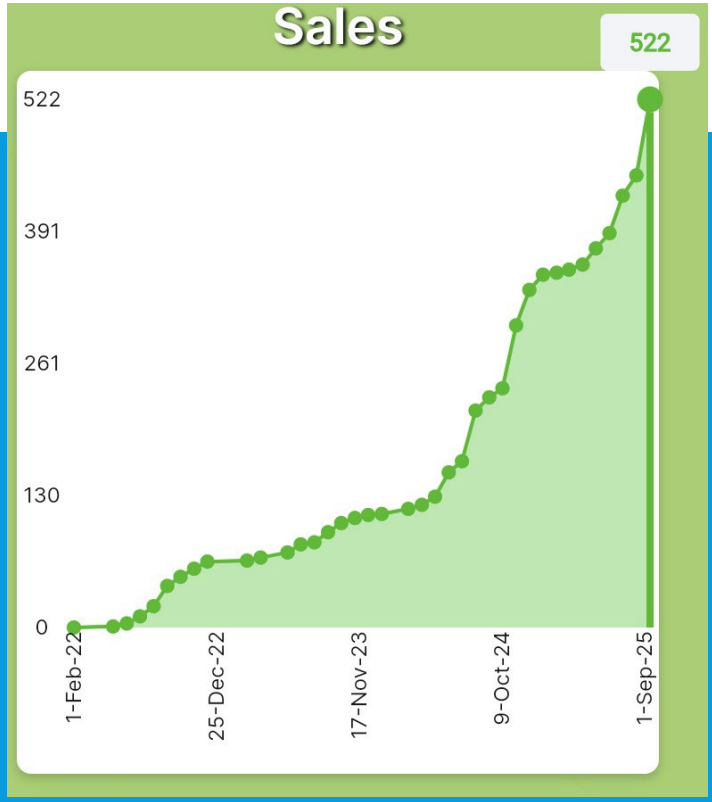
PORTABLE SOLAR PUMP

Zambia

- Partners for Water funded
- Design improved through the project
- Linking to supply chain
- Return in one harvest
- Mainly sales at full price → self-supply



portable Solar Pump

https://portablesolarpumps.com/

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EFFECTS SUPPORTING SELF – SUPPLY

- Families willing to co-invest in their own water system
- Families who have a well share water with 10 to 50 others (basic service level)
- Less headache with broken pumps, families do maintenance
- Impact on SDGs in rural areas; Poverty, Food, Gender, Water, Work & Climate

SUPPORTING SELF – SUPPLY
→ INNOVATIVE FINANCE TO REACH SDG6.1 BASIC SERVICE

- Reach SDG6.1 at half the cost of conventional communal water supply
- Additional impact; SDG's Poverty, Food, Gender, Water, Work & Climate
- > 90% of the pumps are functioning!!

INFORMATION

- Green Roads for Water
  https://roadsforwater.org/
- Deep Bed Farming
  www.tiyeni.org
- Info on supported self supply
  www.smartcentregroup.com
- Reach SDG6.1 with subsidized farm wells?
  www.smartcentrezambia.com

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Information on Rainwater Harvesting, Roads for Water, SMARTechs

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Thank you!