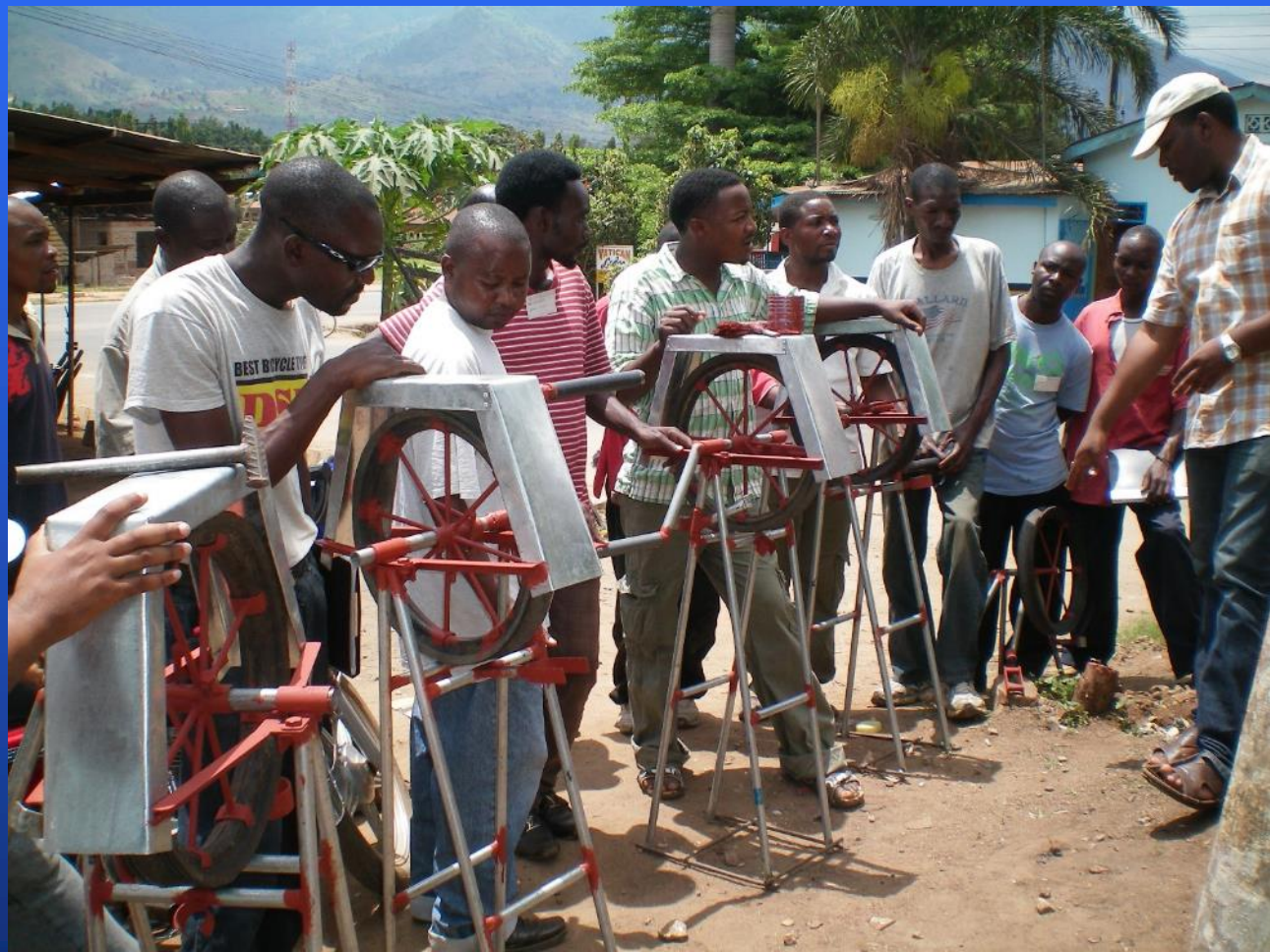
The SMART Centre approach

An innovative way to reach SDG6 and create jobs by training local entrepreneurs



Stockholm Water Week

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Challenges

- Reach SDG6 (water & sanitation)
- Increase sustainability communal supply
- Scale up Self-supply
- Reduce rural poverty
- Increase food security
- Create jobs

Situation worldwide

- 80% of 660 million unserved live in rural areas, small communities. Conventional boreholes to expensive
- 2000 million with unsafe water in cities, towns. Expanding fast, old systems. New systems take time
- 2000 million without safe sanitation

Situation in Africa

35% rural water systems defect

Too complex ?
Too expensive ?
Users dont pay ?
Lack of knowledge

Poverty circle

> 50 % of world poor - Subsistence farmers

- No money - No education
- No education - Low paid job, ej. Subsistence farming
- Subsist. Farmers - Many children (labor)
- Many children - Low education, mal nutrition
- Mal Nutrition - Low learning capacity
- Low education - No money

SDG6 for Water

1 Volume > 20 l /p/day
(3 l/p/day safe water)

2 Distance < 500 meter

3 Quality > Clear. No bacteria,…

4 Availability = 24 / 7

Question

If I would give you 10 million dollars.

In which 3 actions would you invest to reach the SDG6?

A solution
The SMART Centre approach

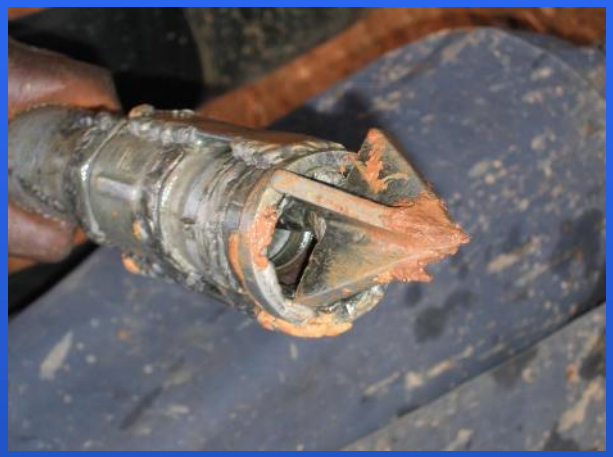
Simple, Market based, Affordable, Repairable Technologies

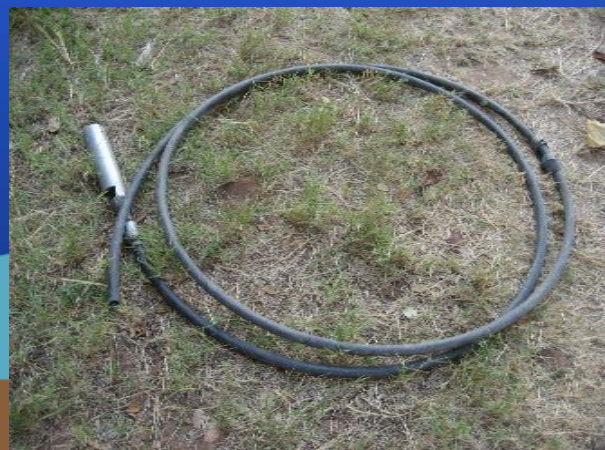
Combination of:

- **Innovative technologies (SMARTechs)**
- **Training the local private sector**
- **Scale up Self-supply**
- **Focus on Household Water Treatment**

Examples of SMARTechs

Manual drilling; SHIPO, Jetting, EMAS, Baptist, Mzuzu. Cost/well of 40 m. from $150





Effects of SMART Centre approach

1. Cost reduction rural water points 30-50%
2. Increased functionality; 65% to 90%
3. Profit based sustainability
4. Increased rural incomes , food security with Self-supply (family systems)

SMART Centre use SMARTechs

- Wells / Pumps
- Storage
- Ground water recharge
- Irrigation
- Treatment (drinking water)
- Sanitation

Examples
Manual drilling, SHIPO, Mzuzu

To 50 m deep

Cost / well
200 - 1500 $
Incl. casing
hand pump

Well improvement existing wells

A manual drilled well & a locally produced pump

Before

After

Deepening wells with well Pipe

with PVC pipe and Tube bailer

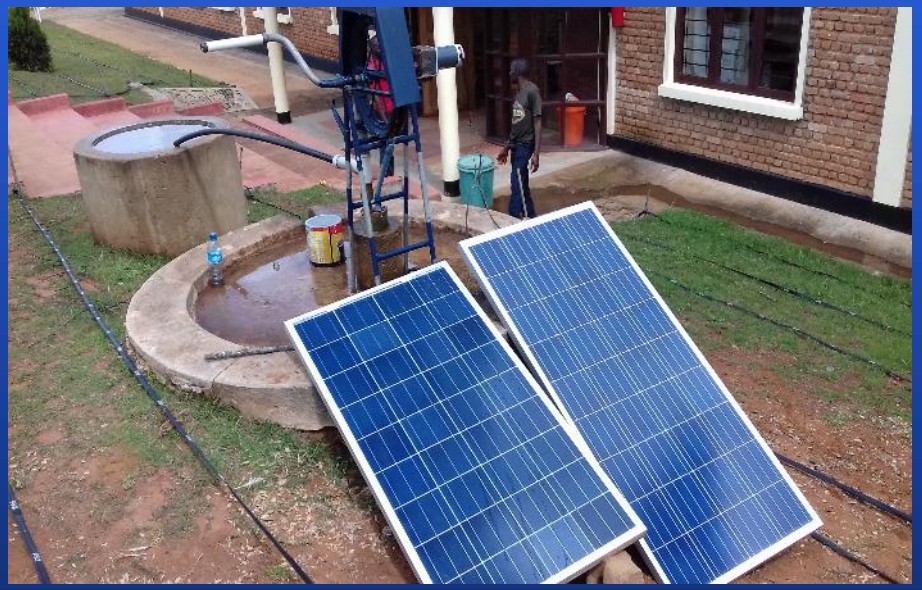
Cost

10-50$

Low cost pumps Rope pumps

60-120 $

Powered by Pedal, Engine, Wind, Solar



Low cost pumps EMAS

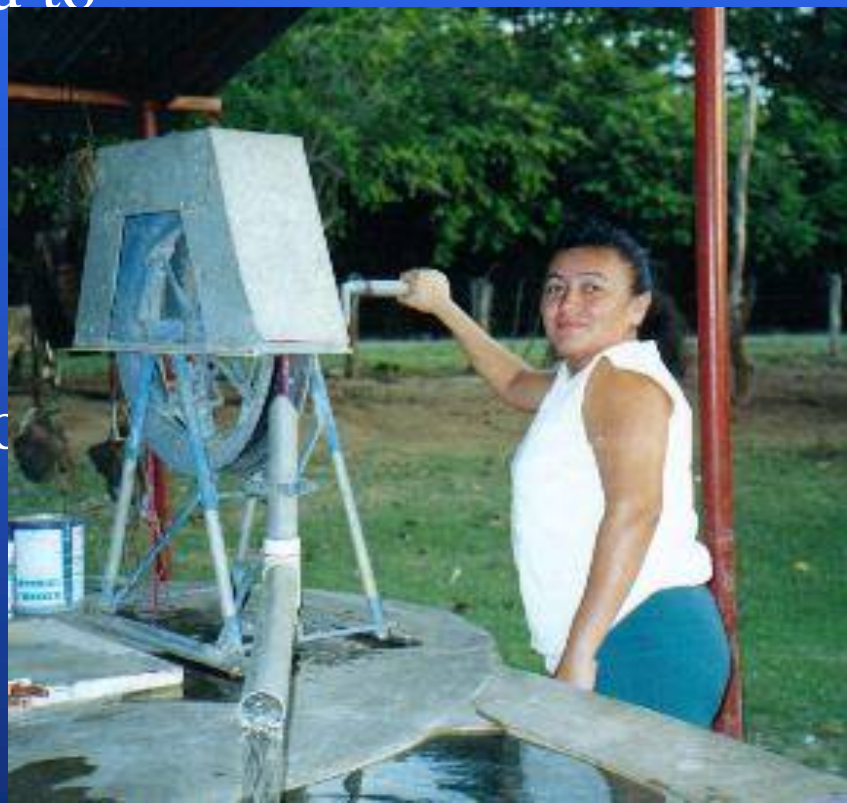
- EMAS can pump up; water for shower
- 30.000 in Bolivia
- Cost: 30$
  200$ Including drilling casing to 20 m deep

Treadle pump Moneymaker

- Suction pump
- 1.5 million Asia, Africa
- Cost 50 – 120$
- Generates income 100 – 400$ / year

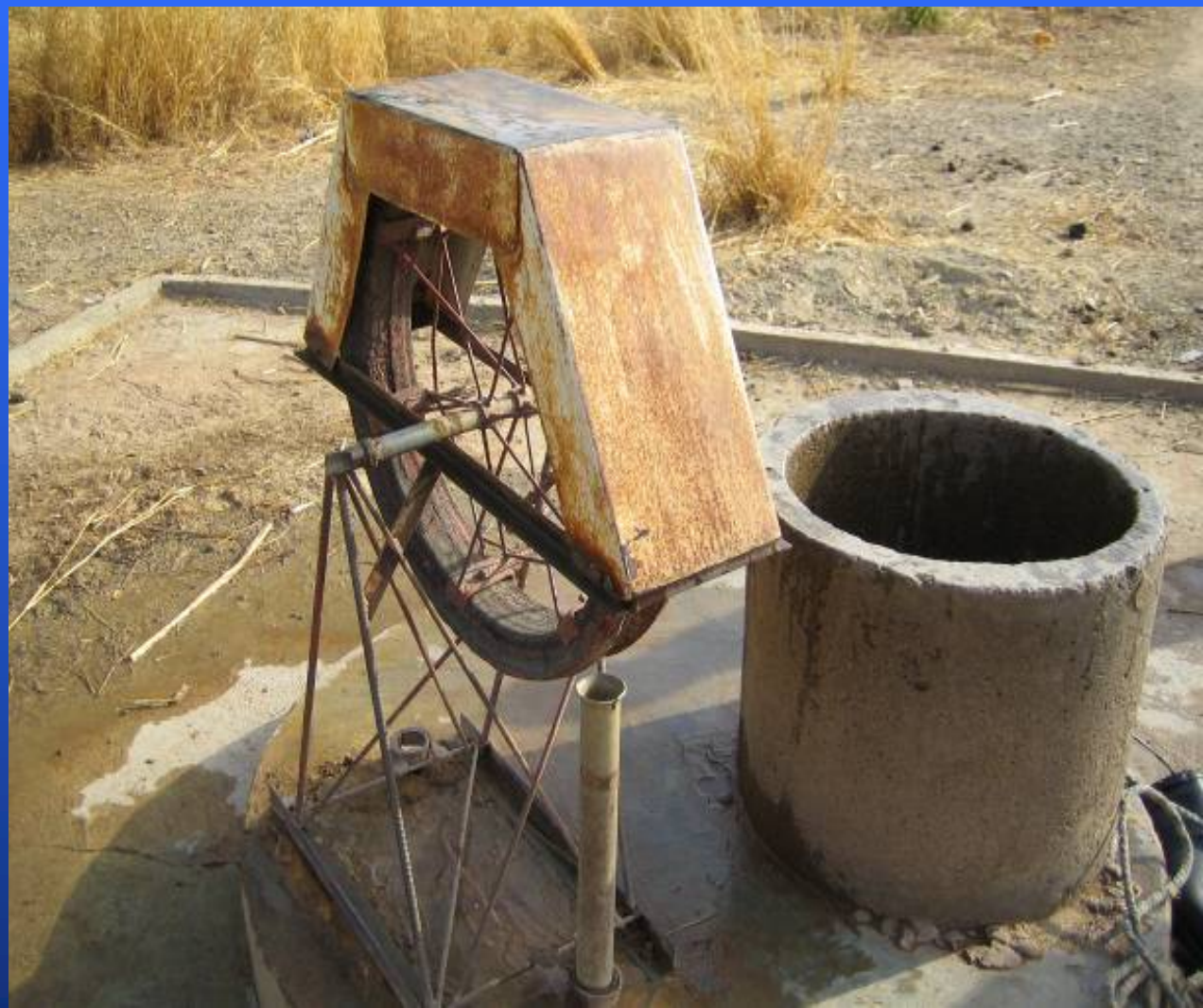
Case Nicaragua 70.000 Rope pumps

- Covers 40% of rural supply
- Reduced cost by 70% compared to import pumps
- 70% used for Self-supply
- Goes on without NGOs, c
  local private sector



Case Ghana

- Start 2005 Worldbank funds
- 80% defect after 1 year
- Errors
- Devil is in detail



Lessons learned in pumps

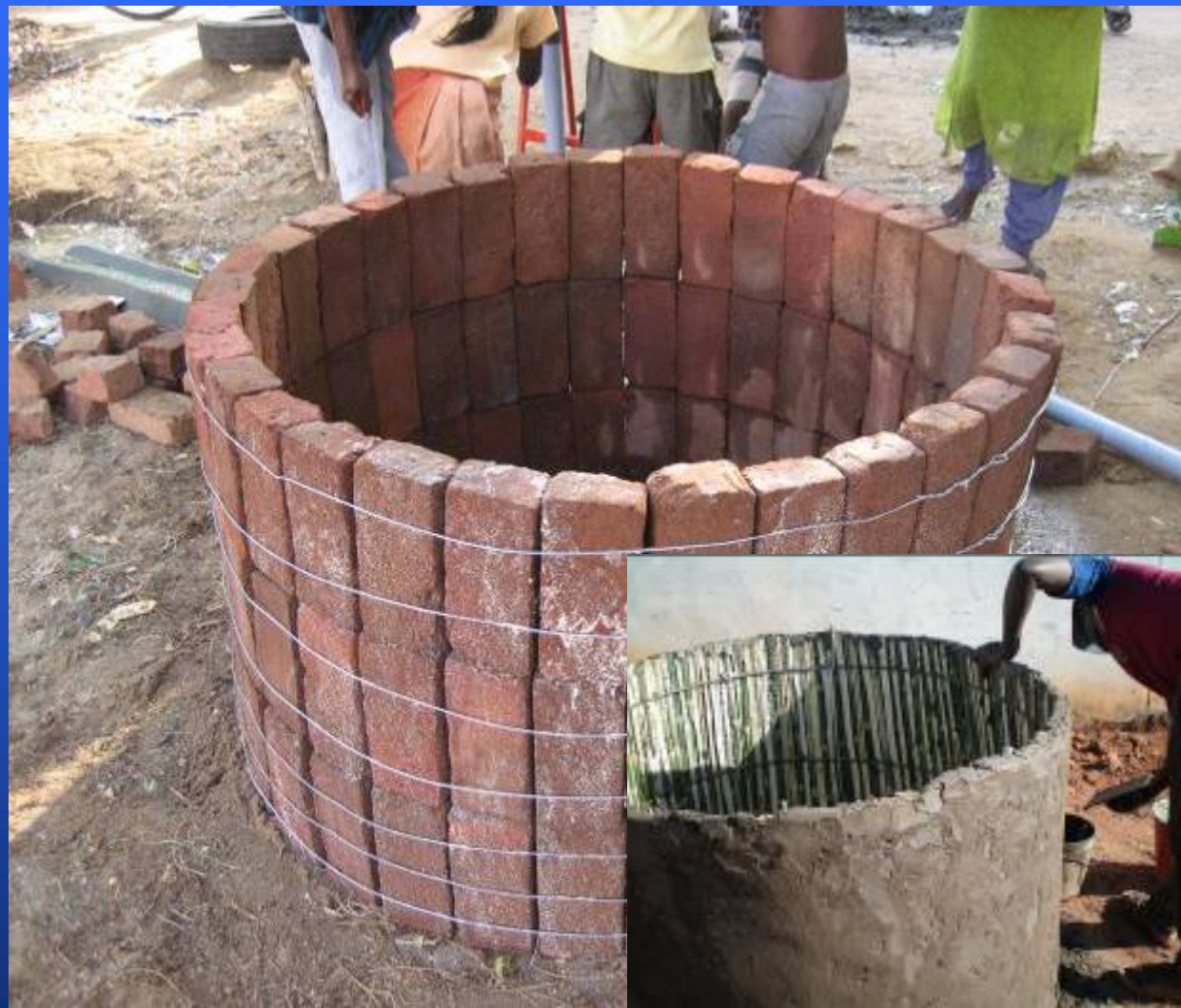
- For Communal pumps. Before installing make sure people are willing/ capable to pay for Maintenance **and**..repairs.
- For private family pumps, people do maintenance themselve
- Simple is not easy

Other SMARTechs

Wire-brick cement tank

- Bricks
- 1 bag of cement / m^3
- Volumes 1 – 50 m^3
- Other options

EMAS tank
bob tanks, (plastic)

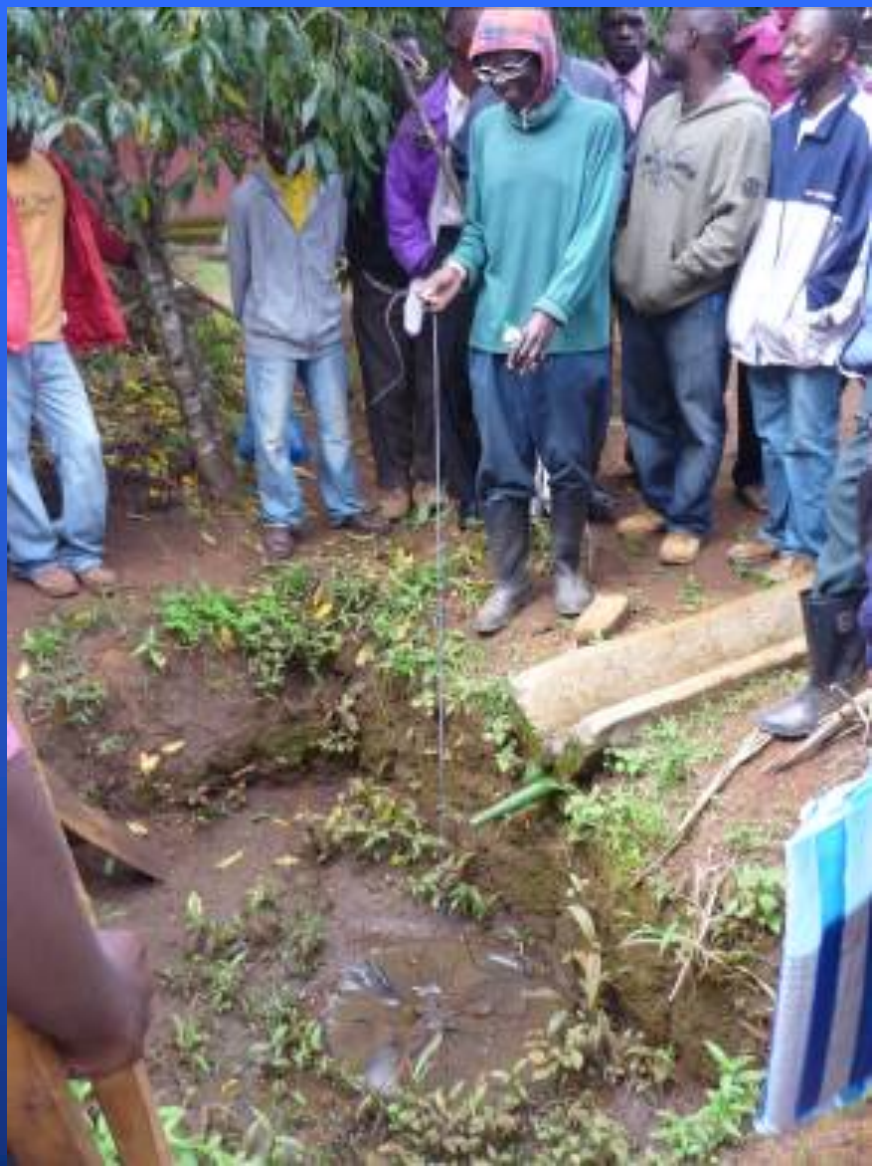


Groundwater recharge
Tube recharge

- Made by families
- Capacity
  Up to 500m3/ season
- Cost $ 10

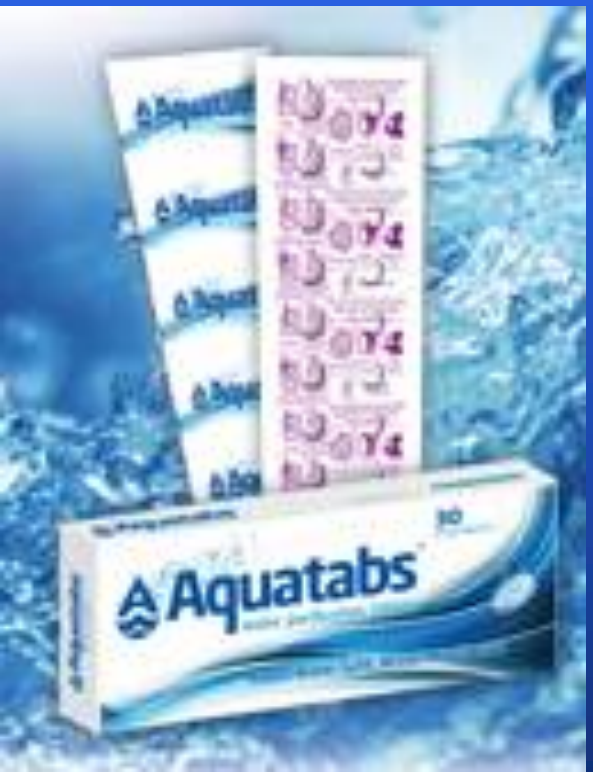
Tube recharge

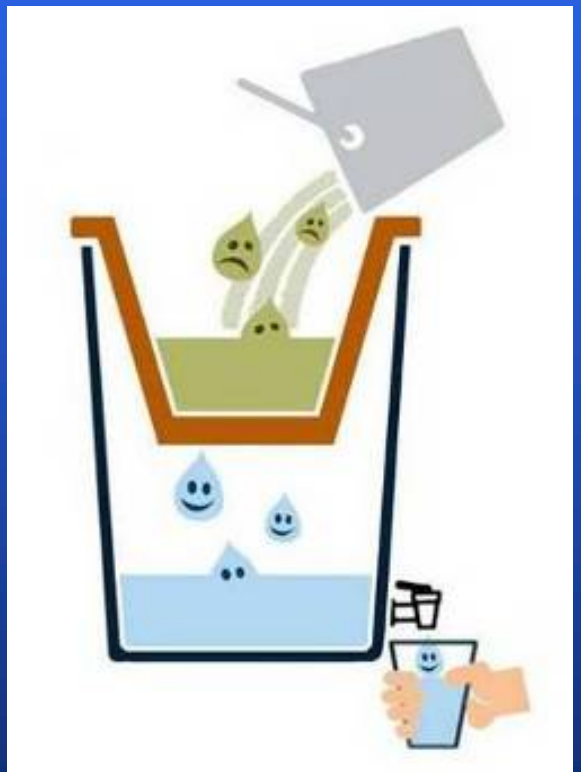
This well dried up; now water all year round



Water treatment at the household

Boiling, Chlorine, Filters

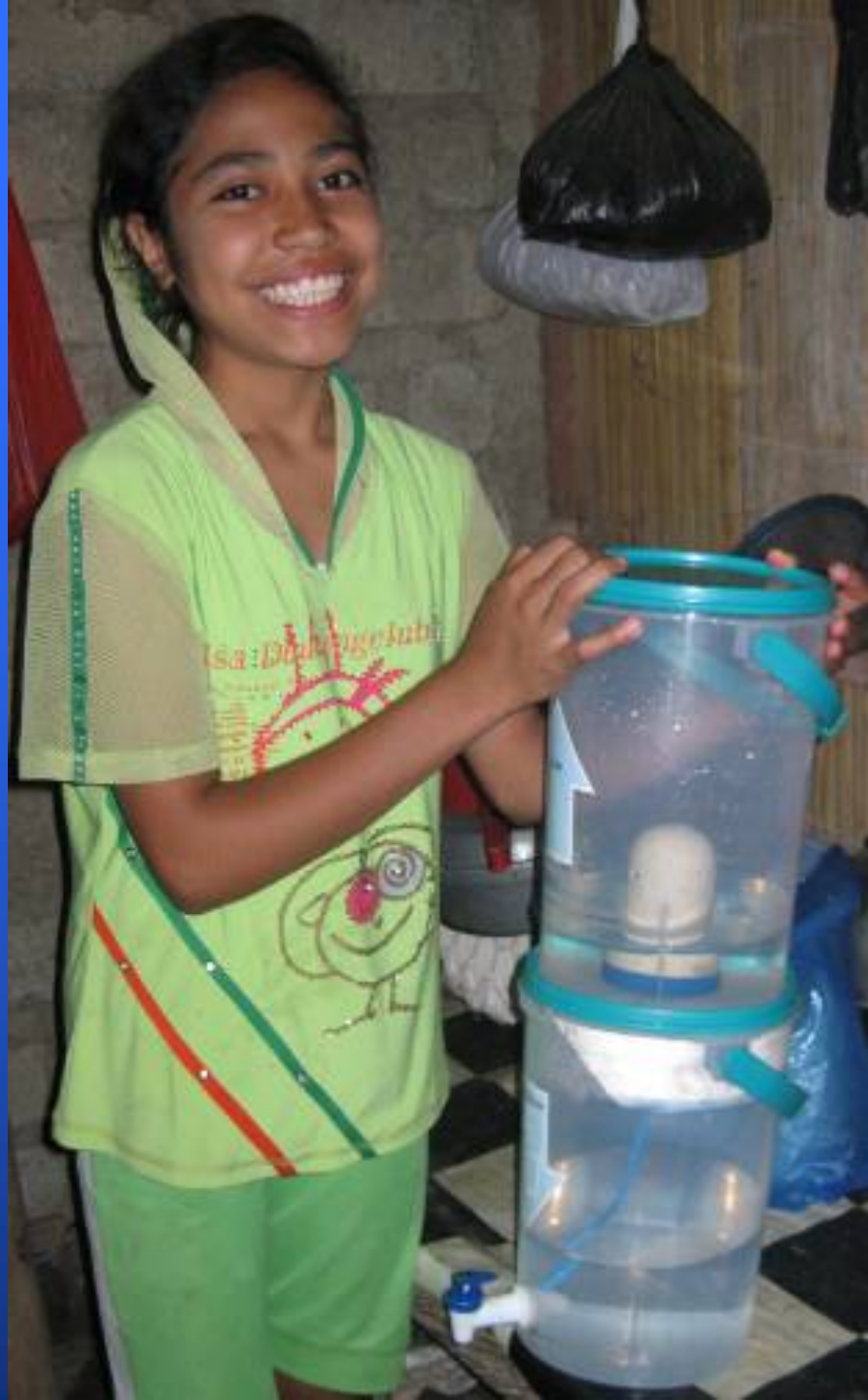




Household water filter

- Produced in Ethiopia

- Cost: 15 – 25 US$



Focus on Self-supply, why?

- Many dispersed living families
- Huge potential for food production by 500 million small farmers (IFAD)
- Life stock, irrigation - increase incomes!!

Self supply = Money

Self-supply. Irrigation + selling water

Farmer pays back loan in 1 year

Self-supply Nicaragua

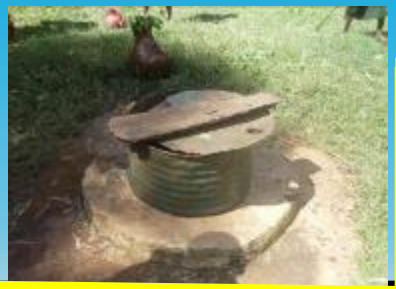
50.000 families with Rope pumps

Cost; **8 mln. US$** aid (Training, promotions,..
Benefit; **100 mln. US$** increased income in 12 yrs

Family with a pump earn 220 $/ yr more than families without a pump. (Invest. 5000 fam. Icidri/ICCO)

Self-supply Water ladder

Unprotected



Semi-protected

Hand pump

Motorised pump

Improved

Unimproved

Effects SMARTechs

1 **Reduce cost of Communal supply**
Manual drilling can reach communities where machines can not reach

2 **Increased options for Self–supply**
Self supply = economic development & more food security

3 **Local bussiness development**
Companies go on after project stop because they make profit.
Profit based sustainability

How to scale up?
The 3 Ts

1. **Training**
2. **T……**
3. **T……**

Training can via SMART Centres

- **Demonstration** new options
- **Training in** production, quality, marketing, ..

SHIPO SMART Centre, Tanzania After 10 years

- 40 “companies” trained
- 11.000 Rope pumps, 60% for Self-supply
- Cost reduction for 40$ to 15$/cap

Scale up water access?
Invest in training

Information

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