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 don't pay?
Lack of knowledge
Poverty circle
> 50 % of world poor - Subsistence farmers

- No money
- 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
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, only 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 themselves

- 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 cannot reach.

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

3. **Local business development**
   Companies go on after the project stops 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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