

Multiple-Use Water Services

Harnessing the transformative power of water to sustainably improve people's health and livelihoods

MUS Group Meeting
June 6, 2014



WINROCK
INTERNATIONAL

Putting Ideas to Work



Winrock and MUS

- Water Innovation Program—endowment-seeded initiative by Winrock Board (2005)
- Solely Focused on MUS
- High potential for growth

Our Mission:

“We create effective and enduring solutions to address the multiple water needs of people living in poverty. To expand our impact, we strive to inspire and equip others to take action—through leadership, demonstration and capacity building.”

Our Vision:

“People living in poverty have access to the water they need to live healthier, more productive lives and sustain the environment.”

MUS Portfolio Overview

- Work stream areas:
 - Implementation—7 countries (SSA, SA)
 - Outreach/education-
 - Capacity Building—training, exchange programs, tools
 - Technical Assistance/Research—Gates Foundation, Rockefeller Foundation, other donors/implementers
- Financials: ~\$30m
- Human Resources: > 60 staff in 6 countries

Keeping the water flowing

...an animated introduction to MUS



The Focus of Our Work

Multiple-Use Water Services: Winrock's Conceptual Model



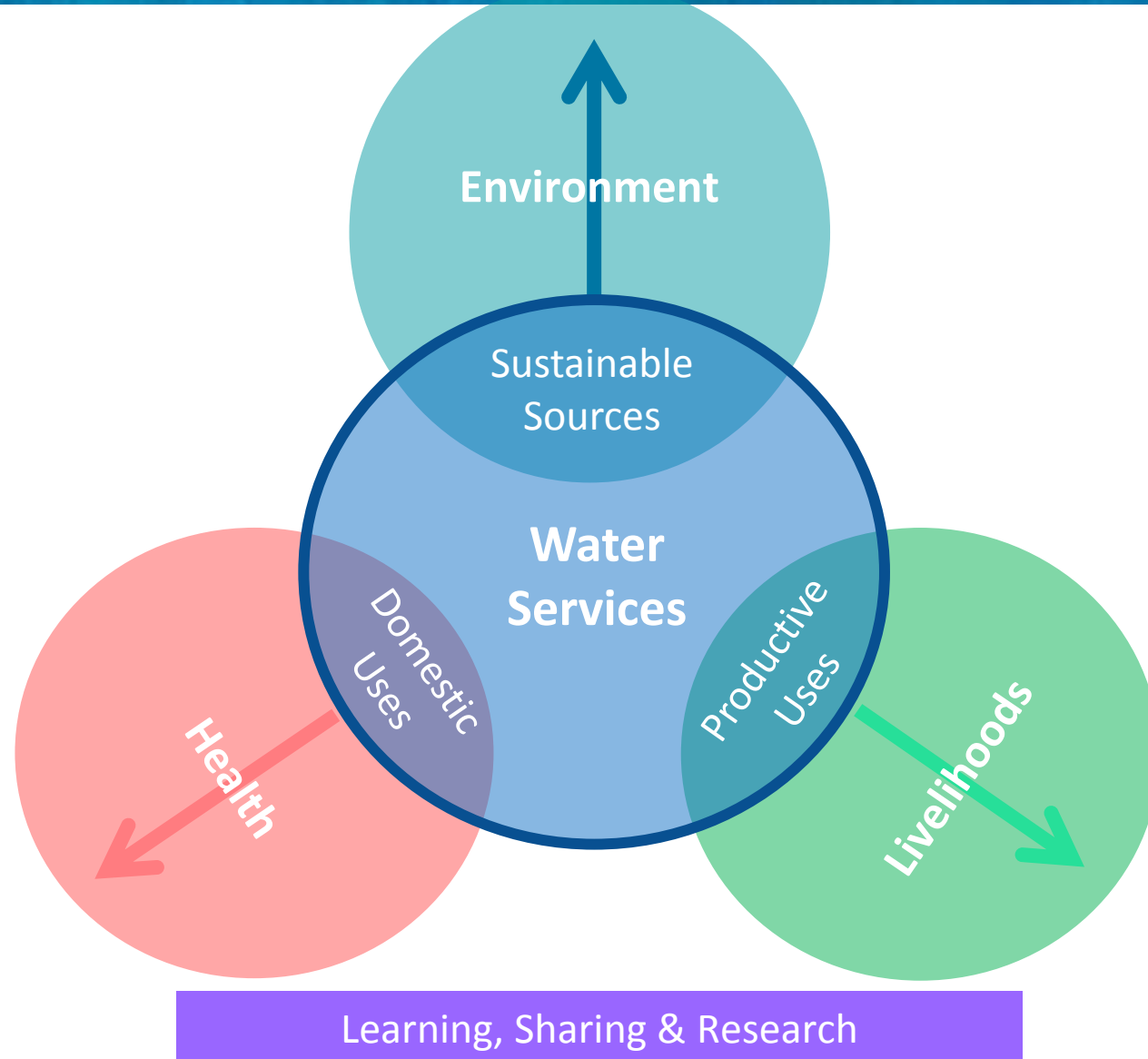
What's it all about?

Improving health and livelihoods of the poor by providing sustainable water services to meet basic domestic and productive needs

Definition

MUS is an integrated water service delivery approach that takes people's multiple water needs as a starting point and involves planning, finance, provision and management of sustainable water services for domestic and productive uses.

Winrock's MUS Implementation Model



SolutionMUS

SolutionMUS is a tested methodology for delivering MUS that links water services with impact-boosting health, livelihood and environment programs

Open Initiative to scale-up MUS

Builds on and complements other work



How it works...

HOW SOLUTIONMUS WORKS.

LOOK AT PEOPLE'S NEEDS



What uses do people have for water?

Where do they use water?

What quality do they need for each use?

How much water is needed for each use?

LOOK AT WATER SOURCES



What sources are available at different times of year?

Where is each source?

What is the quality of water from each source?

How much water can be sustainably used from each source, both today and under expected climate change scenarios?

Which leads to...



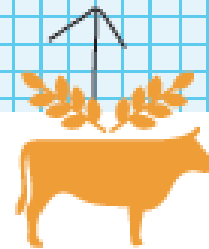
CREATE WATER SERVICES TO IMPROVE HEALTH, LIVELIHOODS, & THE ENVIRONMENT

Can the sources be sustainably transformed to better meet water needs?

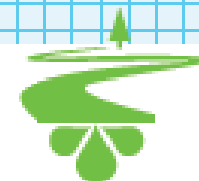
What types of training and management will support the water services?



How can the health benefits of water services be optimized by adding hygiene, sanitation or nutrition activities?



How can the livelihood benefits of water services be optimized by adding support for water-related livelihoods activities such as livestock, crops and enterprises?



How can the environmental sustainability of water sources be ensured through source protection and watershed management?

Gates Foundation Study

Bill and Melinda Gates Foundation

Multiple Use Water Services for the Poor: Assessing the State of Knowledge

Final report
December 2007

Winrock International
IRC Water and Sanitation Centre
International Water Management Institute



It's on the internet:
www.winrockwater.org

Study compared Single-Use vs Multiple-Use

- Key Findings:** Strategic investments in multiple-use services can cost-effectively maximize poverty impacts of water services while enhancing sustainability
- Potential Clients:** Over 1 billion people
- Where:** Rural South Asia and sub-Saharan Africa
- How:** New domestic multiple-use services
Upgrading service levels within existing domestic and irrigation systems

Source: MUS Global Assessment, Gates Foundation (2007)

Impact on income

- \$25-\$70/ capita/ yr *net*
- Additional \$125-\$350/ yr for family of 5
- Above 20 lpcd, each additional lpcd generates \$0.5 to \$1/ yr of income



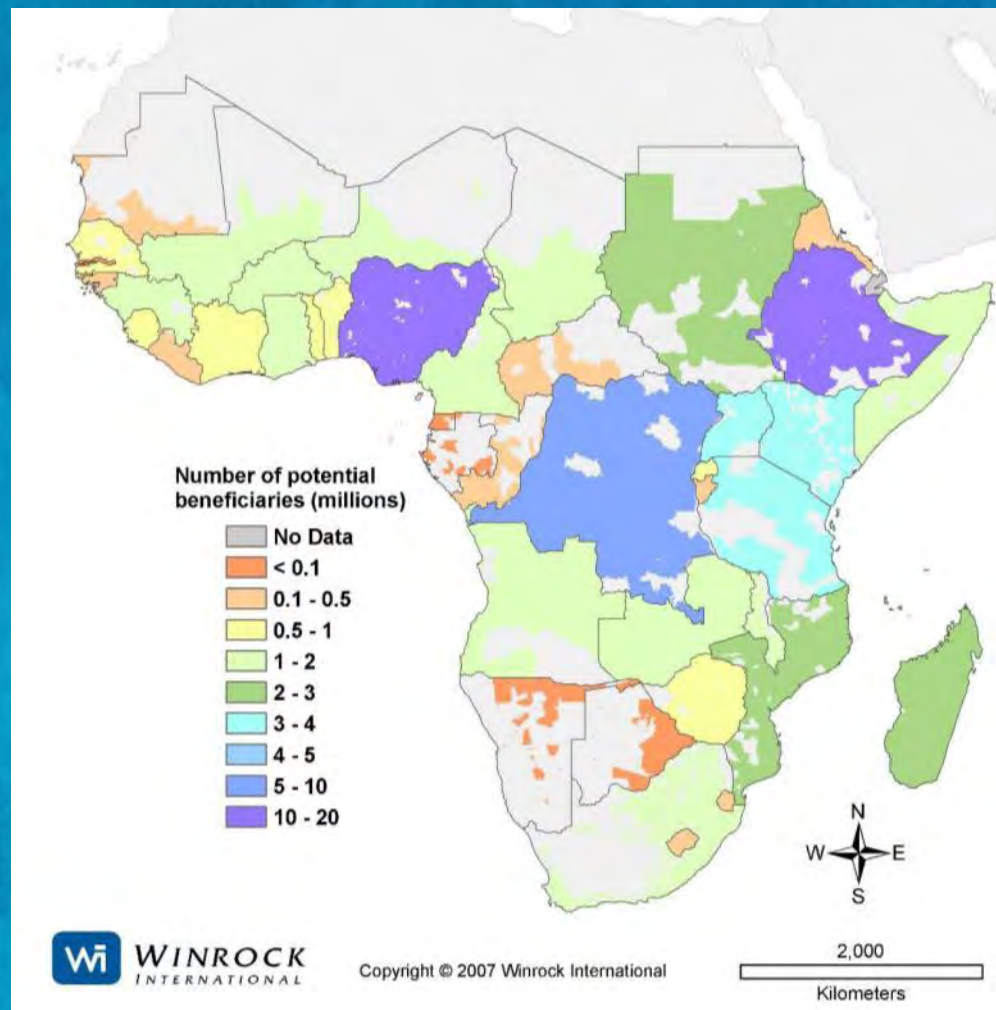
Non-financial poverty impact

- Health
- Food security and nutrition
- Reduced vulnerability/ Diversification of livelihoods
- Social equity and empowerment



Who are the potential beneficiaries?

- Over 1 billion potential clients
- 5 Opportunity Areas
- Scalable



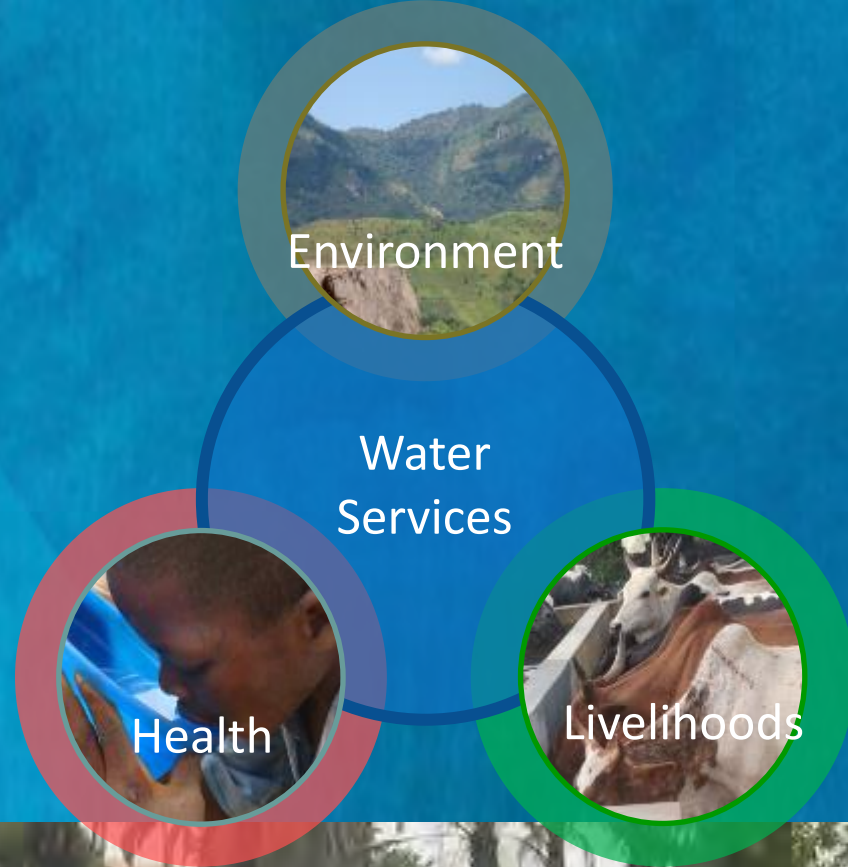
MUS in Action

Africa

- Burkina Faso
- Niger
- Tanzania
- Rwanda
- Ghana

Asia

- Nepal
- India

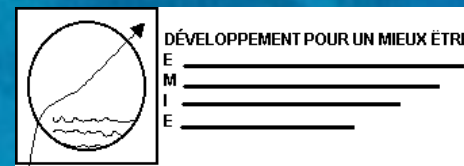


Collaborative Partnerships

Funders



Partners

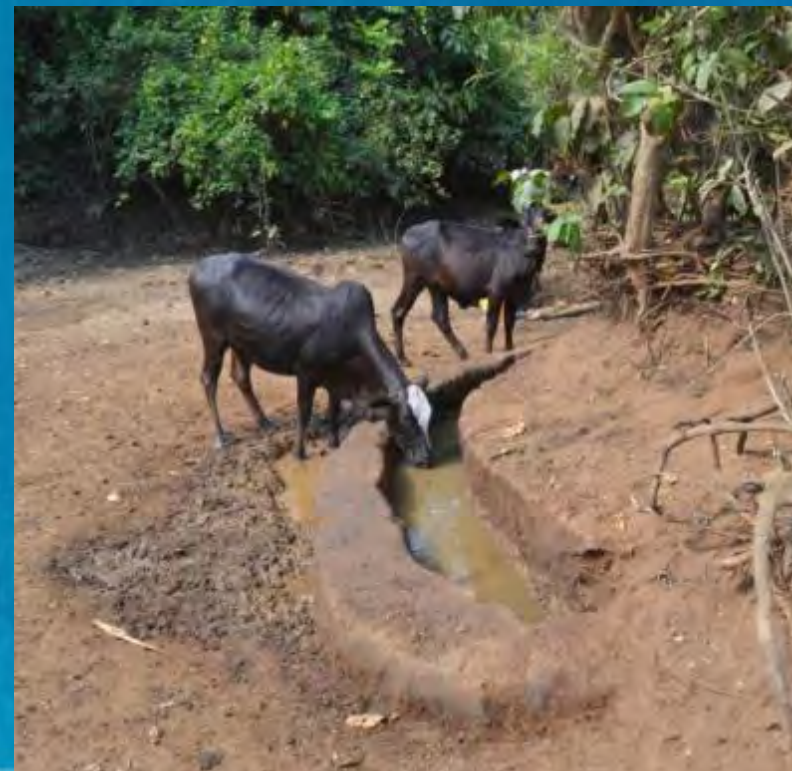


Tanzania: Improving health, livelihoods and sustaining the environment











16 Km of piping in 23 centers serving 6,800 people and over 10,000 livestock



Mountain top spring



Construction of an intake















Burkina Faso



Triangulation Process for Identifying Interventions and Initial Target Sites

- Rapid MUS Assessment – selection criteria (team)
- Rapid Technical (hydrological/private sector) assessment
- Government training & selection of suggested sites



BURKINA FASO

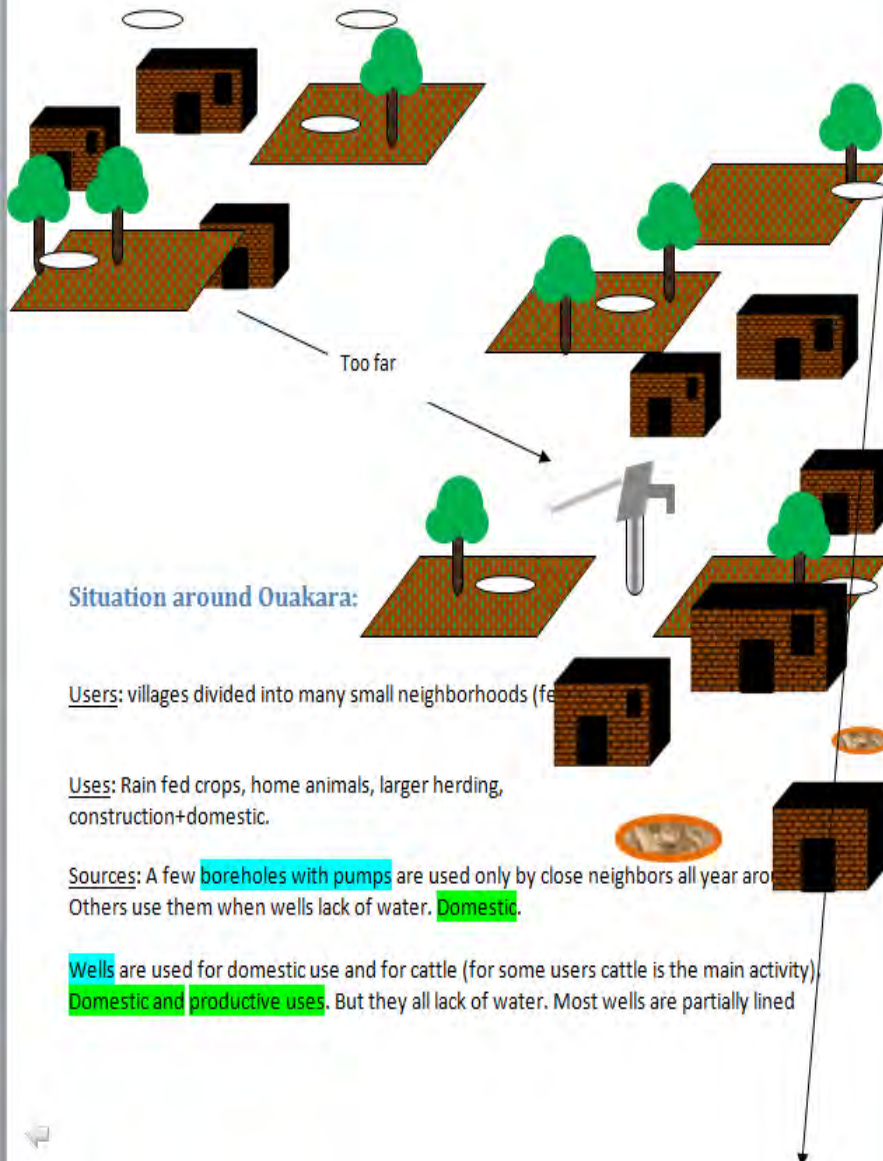


Rapid MUS Assessment--team



Rapid Hydrological/Private Sector Assessment





with stones, bricks and cement which is a proof of investment on them even if water is not enough.

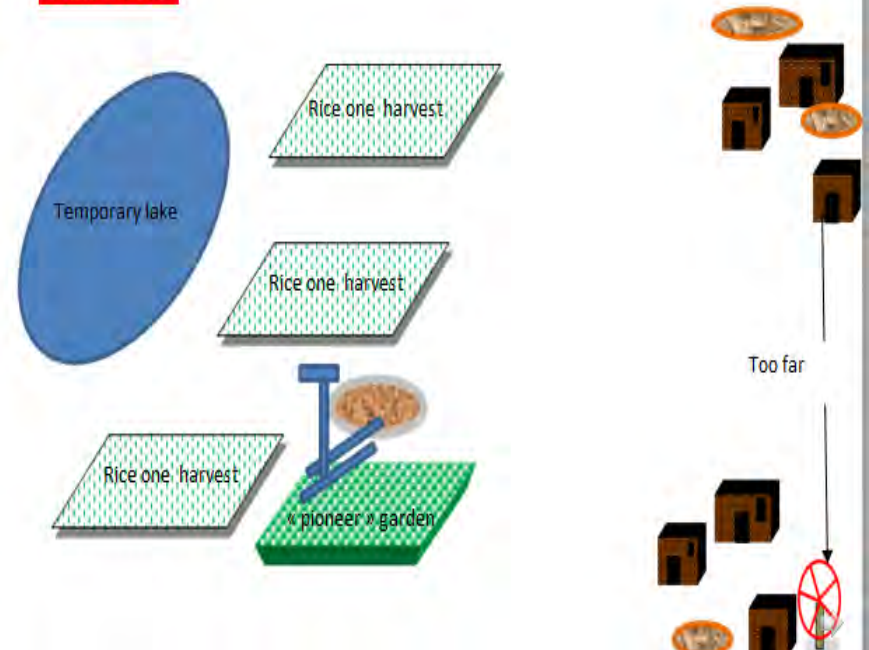
Surface water is used for rice culture and cattle in low lands.

Livelihoods:

There are no gardens at homestead because of lack of water (it's even difficult to make bricks) but people would be interested to initiate these activities if they had enough water. Herders face a lot of difficulties with water also. Some pioneers initiated gardening activities in the low lands (from wells that capture this closer water table) it would be a good complement to rice culture specially after rice harvest.

Health: people are not drinking potable water but they are more focused on the distance between the water point and their house than quality. (If the project helps providing pumps next to neighborhoods, they will probably use them).

Potential: Good.



Government Training & Site Selection



After introductory MUS training, pre-selection of areas with Ag&Water technical services (province and regional), regional councils.

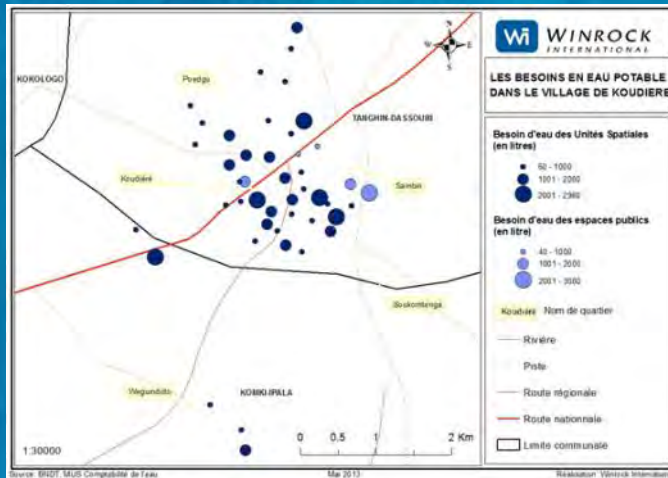


Results

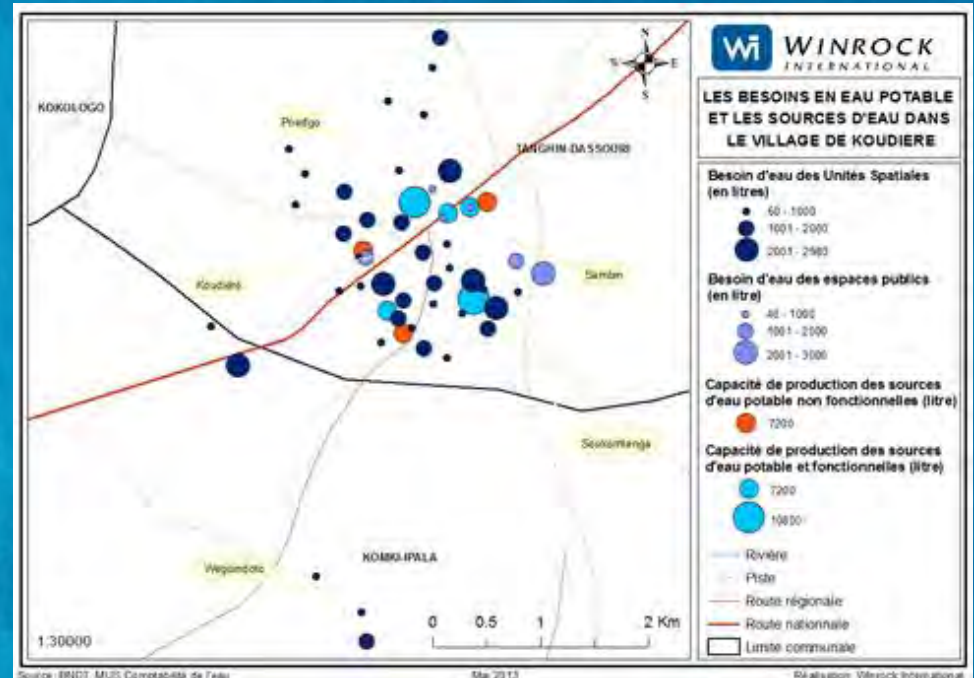
- Needs and promising options understood
 - Program water-related interventions identified : focus on self-supply and strengthening private sector to deliver services
 - Selection of sites— vetted by all stakeholders
 - Reduces chance of poor site selection
 - Awareness and understanding of MUS program at all levels
 - Engagement in process—transparency and buy-in at all levels
- ... and building capacity in the process

Water accounting --example of potable water in Koudiere village in Burkina Faso

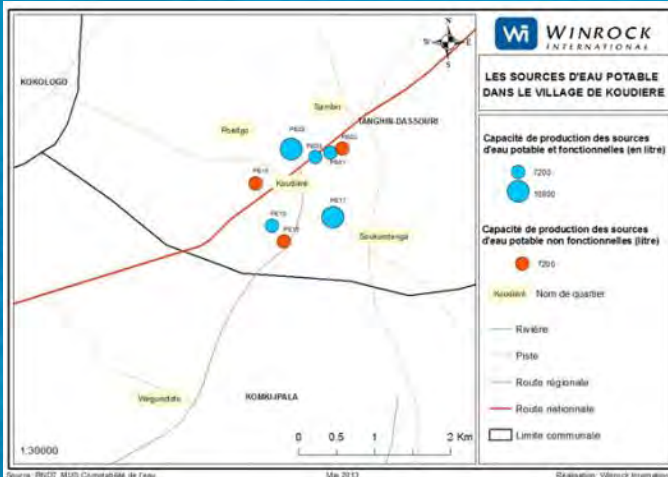
Needs



Gap

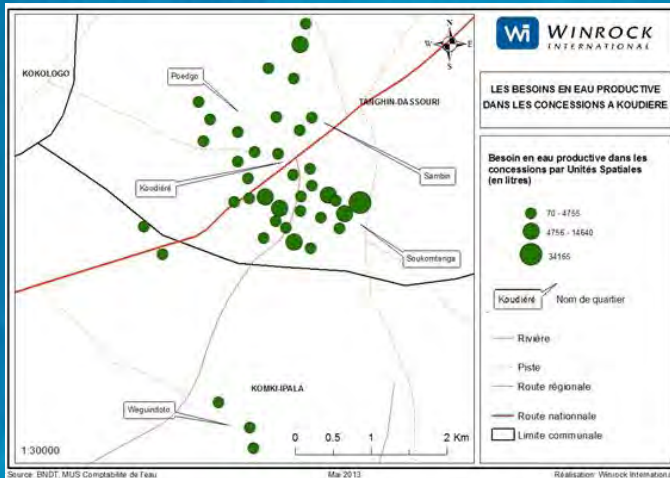


Sources

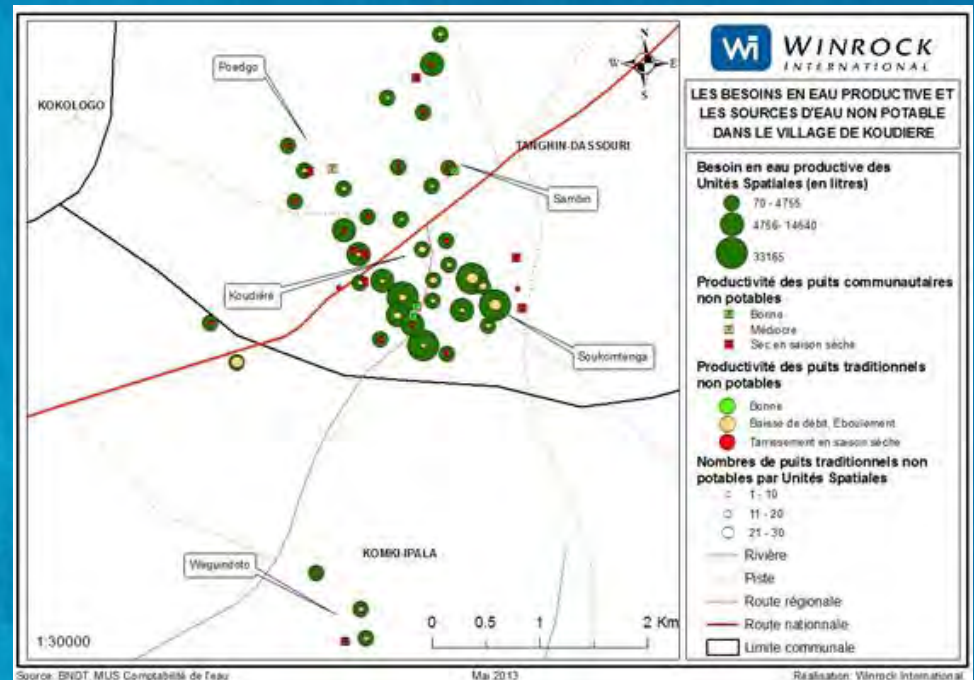


Water accounting--example of productive water in Koudiere village in Burkina

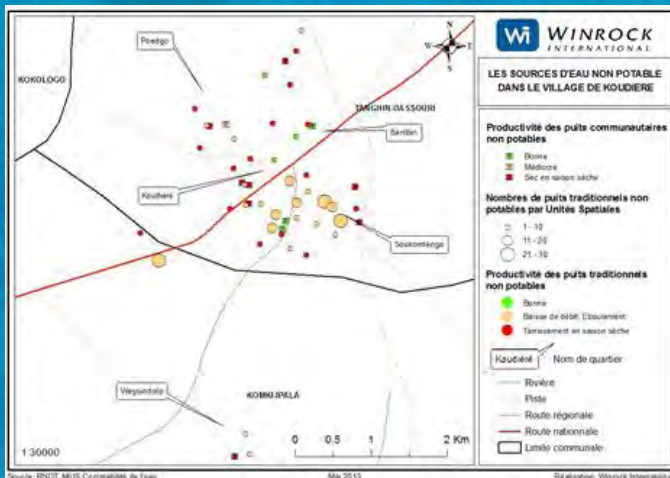
Needs



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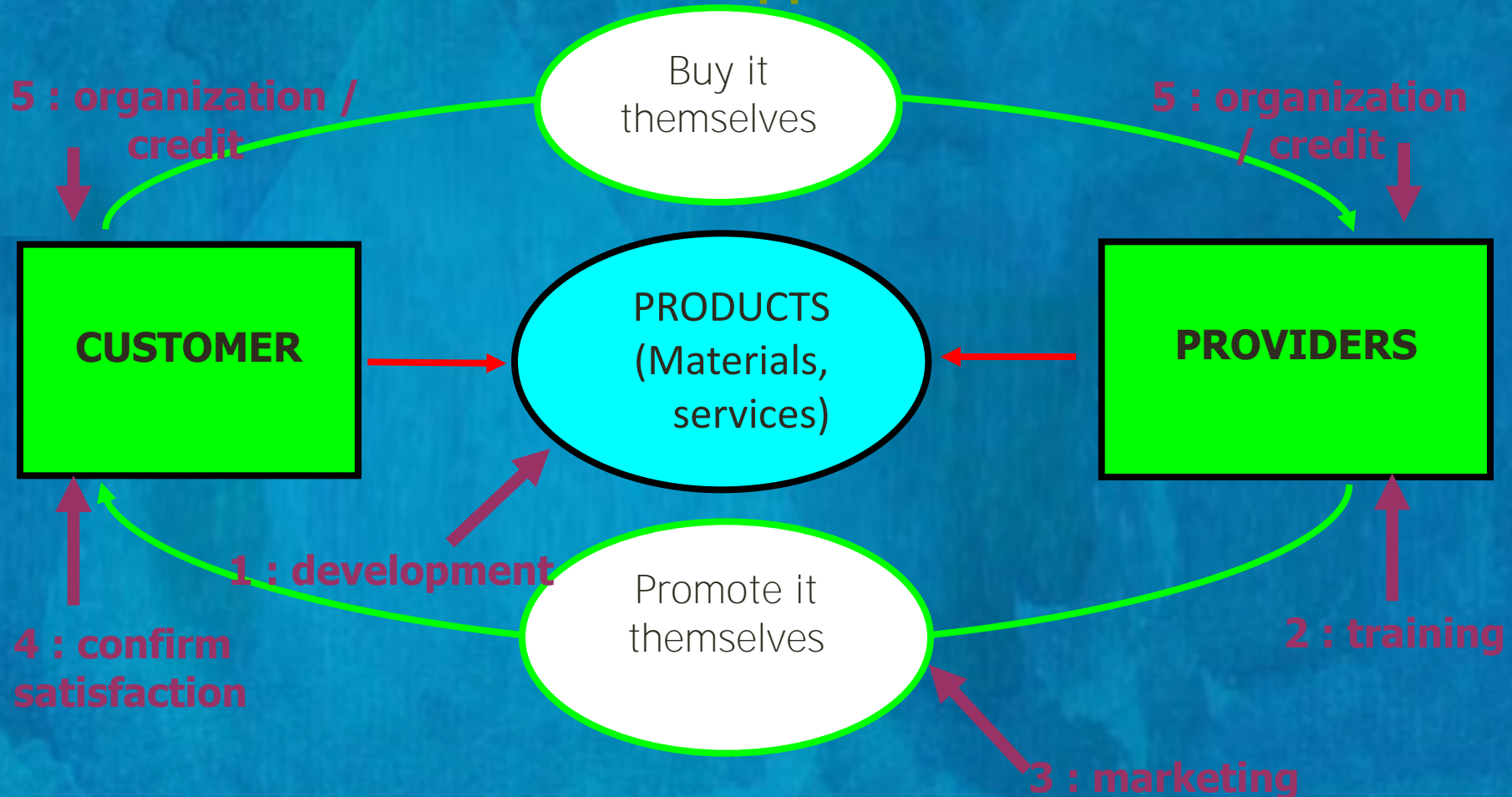


Sources



Supply Chain Development for Water-Related Products and Services

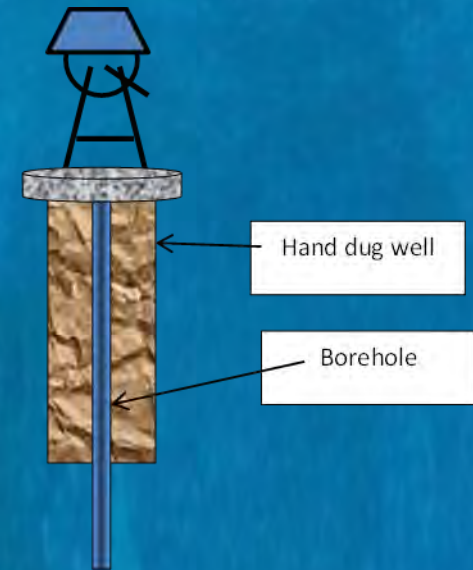
Product Approach



Goal: Develop entrepreneurship and initiative

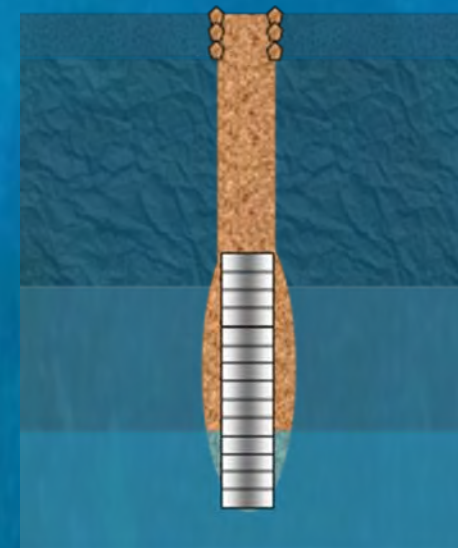
Low cost borehole—upgrade “borehole inside dug well”

- Developing the upgrade technique « dug well – borehole »
- Three (3) drilling teams trained and equipped to the dug well – borehole technique in Burkina Faso



Low cost borehole—upgrade “concrete rings inside dug well”

- Developing the upgrade technique
« Deepening wells by digging with concrete ring »
- Three (3) drilling team trained and equipped to upgrade traditional wells with this technique in Burkina Faso



Technical and Business Training for Private Sector

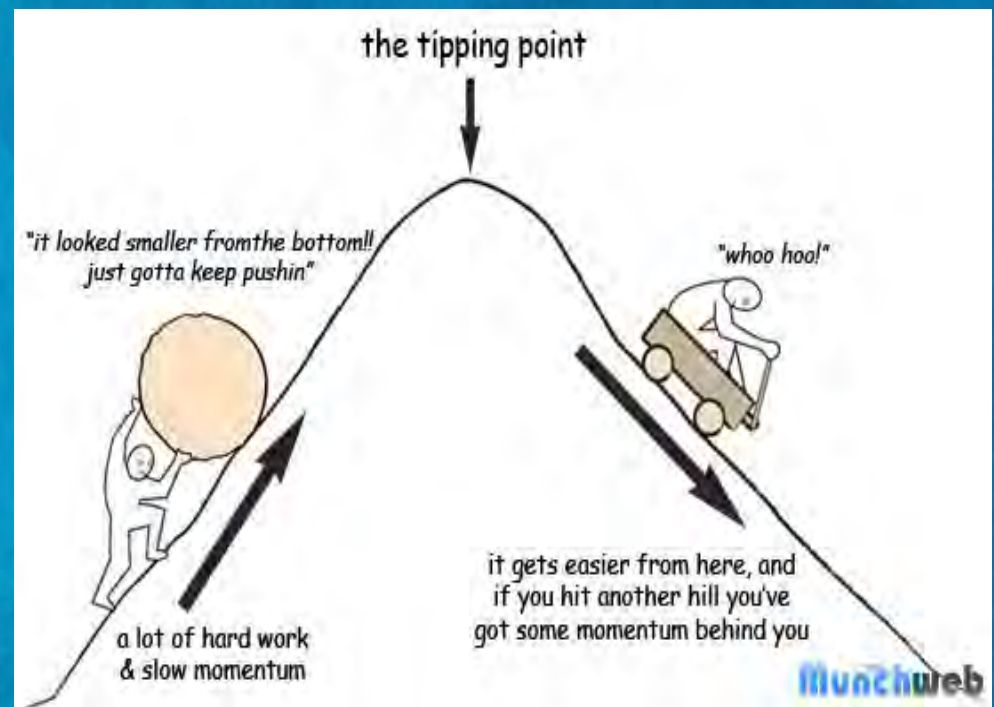
- **Technical:** drilling, manufacturing, installing + Environmental mitigation and monitoring
- **Business:** setting prices, preparing contracts, marketing, registration with tax authorities, 'embedded services'



What is needed to catalyze scale-up?

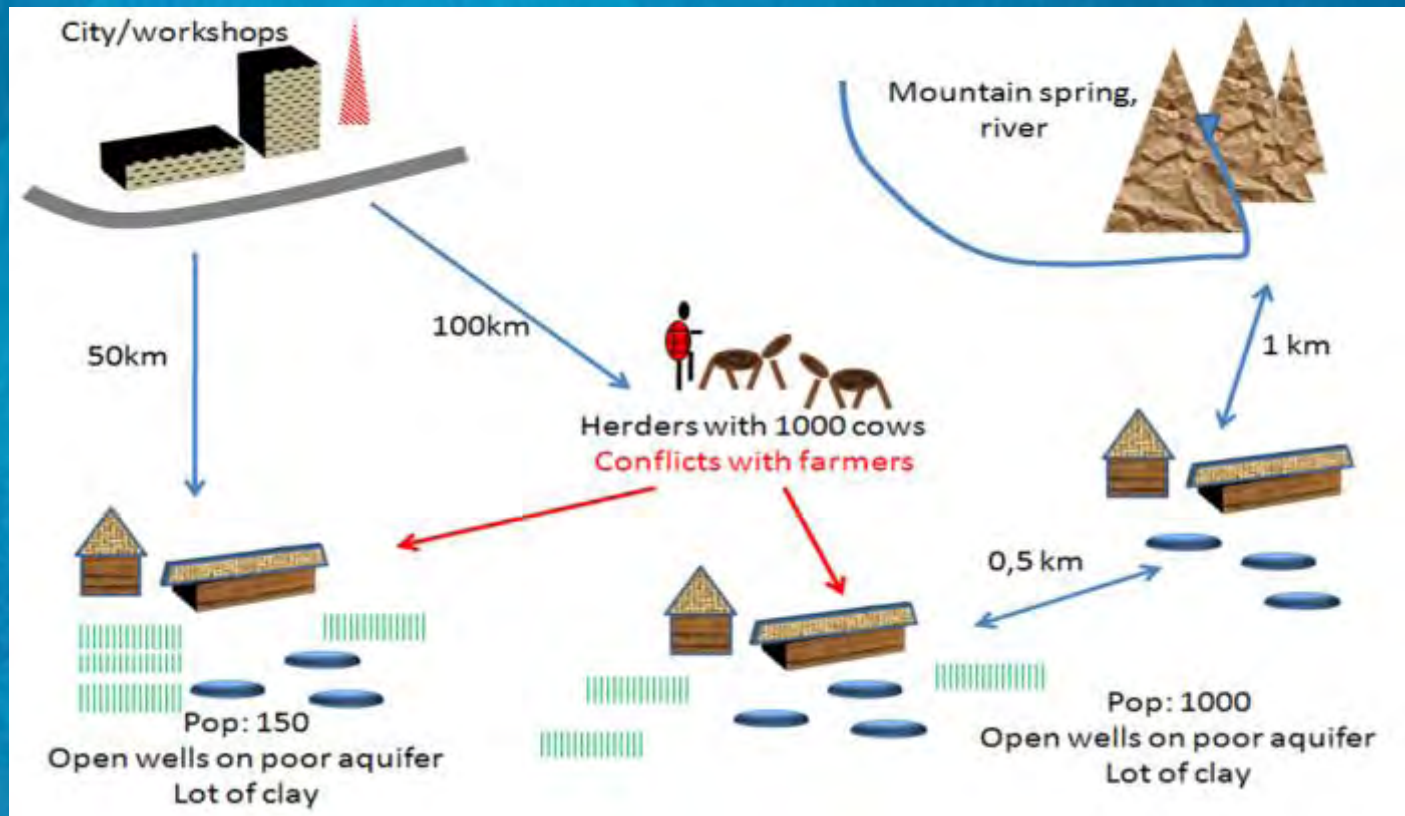
Focus on the tipping point ... catalyze self-sustaining adoption leading to a paradigm shift

- Champions
- Observable results
- Training and Tools



Awareness and Capacity Building

- Animated Video
- Guide to Implementing MUS
- MUS training program



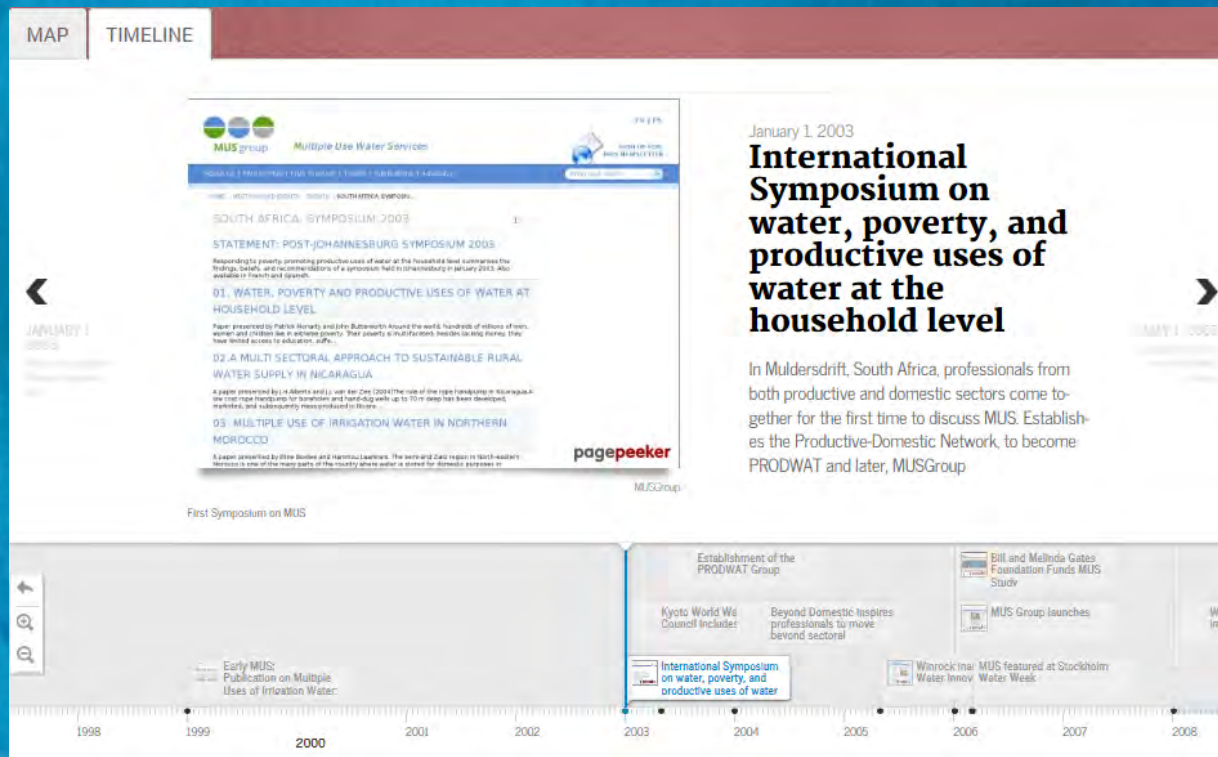
SolutionMUS

- An **open initiative** of Winrock International to scale-up multiple-use water services (MUS) through an internationally recognized, practical, and high-impact methodology



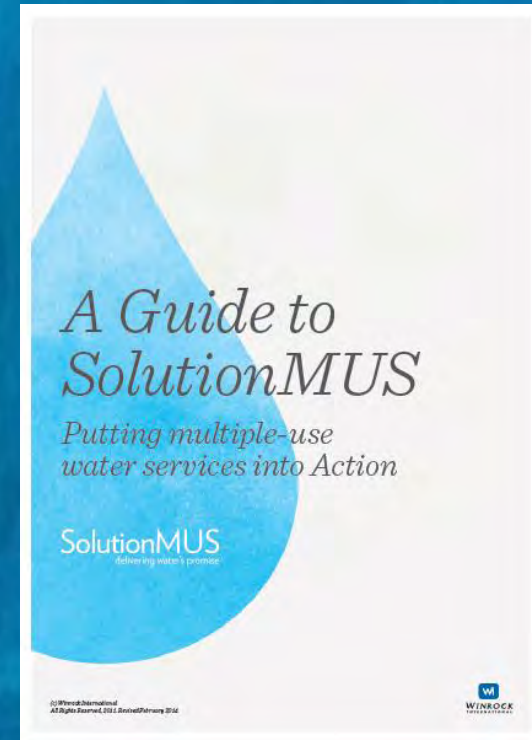


- Increasing interest in MUS has led to demand for a well-defined, evidence-based implementation methodology
- SolutionMUS can address this gap by complementing and building on the efforts of other early MUS innovators such as the MUS Group network.





- Adds value to ongoing efforts to provide water services to people living in poverty through:
 - a clear, consistent conceptual framework, technical standards, and step-by-step process
 - impact-boosting programs that enhance people's health and livelihoods, and contribute to environmental sustainability
 - rigorous field testing and evaluation
 - an active learning and sharing platform to encourage continuous improvement
 - a growing package of technical support and training products for implementers, funders, policymakers, and researchers.






How it Works

SolutionMUS
delivering water & promise

About Contact Resources Search

Impact How It Works SolutionMUS in Action Work with Us

SolutionMUS Implementation



SolutionMUS implementation marries the best practice models of participatory governance and demand-responsive, market-based approaches with sustainable financing and management. Diligent application of these practices ensures that results are achieved and benefits endure over time.

TIP: Implementing integrated projects is complex because of the interactive program components involving water, health, livelihoods, and environment. You can deal with this complexity by using a work plan that identifies critical pathways and timelines for activities. In addition, you should identify potential risks (for example, how delays in certain activities could influence others) and develop a mitigation plan.

Tool and Resources

- [Click for more resources](#)
- [Click to link to tools](#)

Impact page

Impact How It Works SolutionMUS in Action Work with Us


Home / Impact Overview / Water

Water

Increased access to sustainable, high quality water services that meet the full range of community needs for domestic and productive uses.

SolutionMUS water services activities result in

- Water services of sufficient quantity, quality, and reliability at appropriate location(s) to sustainably provide for different mixes of uses.
- Additional annual income of \$0.50 – \$1.00 for each liter of water provided over 20 liters per capita per day.
- Management models to ensure continuous high quality water services, with significant private sector engagement.



HOW SOLUTIONMUS WORKS.

LOOK AT PEOPLE'S NEEDS



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LOOK AT WATER SOURCES



- What sources are available at different times of year?
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CREATE WATER SERVICES TO IMPROVE HEALTH, LIVELIHOODS, & THE ENVIRONMENT

- Can the sources be sustainably transformed to better meet water needs?
- What types of training and management will support the water services?



How can the health benefits of water services be optimized by adding hygiene, sanitation or nutrition activities?



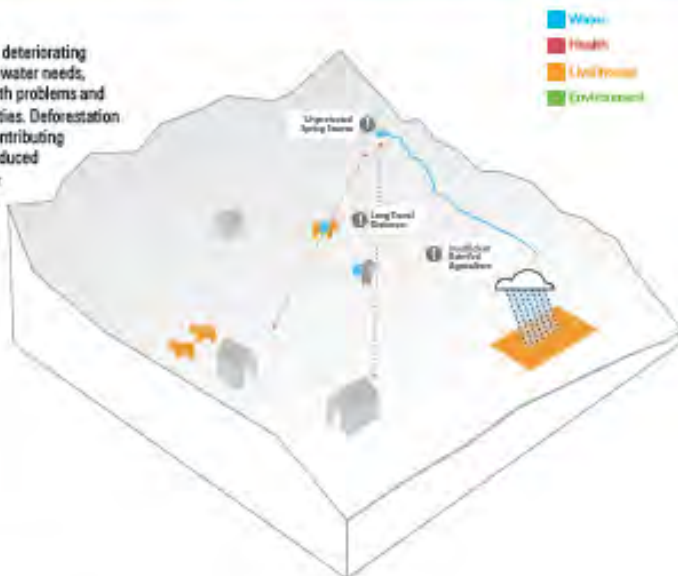
How can the livelihood benefits of water services be optimized by adding support for water-related livelihoods activities such as livestock, crops and enterprises?



How can the environmental sustainability of water sources be ensured through source protection and watershed management?

BEFORE

People rely on a distant and deteriorating unprotected spring for their water needs, resulting in a variety of health problems and limited gardening opportunities. Deforestation and land degradation are contributing to poor water quality and reduced infiltration to feed the water source. Long travel times to fetch water are further impeding people's ability to produce food and earn a living.



AFTER

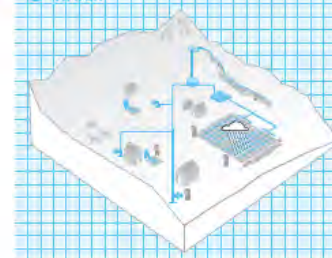
Long-term reliability and quality of the source is enhanced through revegetation and soil conservation in the catchment area. Tap stands installed near households provide adequate potable water and reduce the time required for domestic water collection. Overflow from the drinking water reservoir irrigates off-season vegetable production, generating income to maintain the system, improving food security, and enhancing nutrition.



- 1 Protected Water Source
- 2 Village Water Tank
- 3 Irrigation Water Tank
- 4 Tap Stand
- 5 Drip Irrigation
- 6 Hygiene Promotion
- 7 Rainfed + Off-Season Crops
- 8 More Household Gardens
- 9 Increased Livelihood
- 10 Tree Planting in Spring Catchment Area
- 11 Vegetative Riparian Buffers

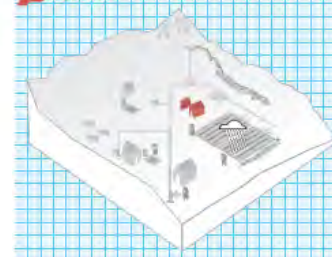
IN MORE DETAIL

WATER



- Protected spring with outlet to a covered reservoir protects drinking water from contamination.
- Tap stands near households greatly increase water availability and reduce time spent fetching water.
- Conflict is reduced by designing water services that meet a range of needs and negotiating water use priorities among stakeholders.
- Increased income from crops, gardening, livestock, and non-timber forestry products is used to maintain system over time.
- Sustainability of water services is enhanced by establishing and training a water management committee.
- Support for local supply chain of replacement parts for gravity system and irrigation technologies makes system more sustainable over time.

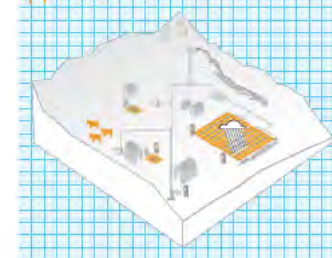
HEALTH



- Potable water, hygiene awareness, and increased handwashing reduce diarrheal diseases.
- Increased investment in latrines results from improved water availability, sanitation promotion, and increased income.
- Improved nutrition results from reduced incidence of diarrheal diseases and greater consumption of vegetables.

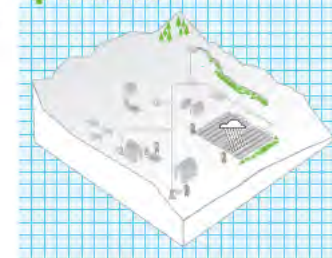
IN MORE DETAIL (CONT.)

LIVELIHOODS



- Women's household gardens are converted to high-value crops as a result of increased access to water, drip irrigation kits, agricultural extension, and marketing.
- Off-season water productivity and efficiency in fields is improved through irrigation technologies and agricultural extension.
- Household income and food security are improved.
- Time saved from water collection can now be used for income-generating activities.

ENVIRONMENT



- Environmental impact assessments and climate change studies determine sustainable yield of water sources over time.
- Formal water rights are secured, creating incentives for greater water resource stewardship and ensuring water for environmental flows.
- Tree planting in catchment area improves water quality, stores carbon, and provides income from non-timber forest products.
- Vegetative riparian buffers prevent agricultural runoff into streams, provide habitat, and maintain water quality for ecosystem and downstream users.

How it Works: SolutionMUS and Program Cycle

PLANNING



1. Assess water needs and resources to identify gaps in water services.
2. Analyze opportunities for improving health, livelihoods, and the environment.
3. Design water services and complementary programs.

IMPLEMENTATION



1. Promote and support sustainable service delivery management options.
2. Construct infrastructure and support market-based enabling technologies.
3. Implement complementary programs.

EVALUATION



1. Determine outputs.
2. Measure outcomes.
3. Evaluate impacts.
4. Adapt program as needed.



WATER FOR DRINKING

00:00:37



Water Accounting: Assessing Demand and Supply

"always start with demand ..."



Image © 2012 GeoEye
© 2012 Google

Google earth

Imagery Date: 1/12/2001

13°32'58.56" N 9°09'35.41" E elev 1327 ft

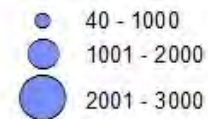
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**POTABLE WATER NEEDS
AND SOURCES IN THE
VILLAGE OF KOUDIÉRE**

Spatial Units water needs (liter/day)



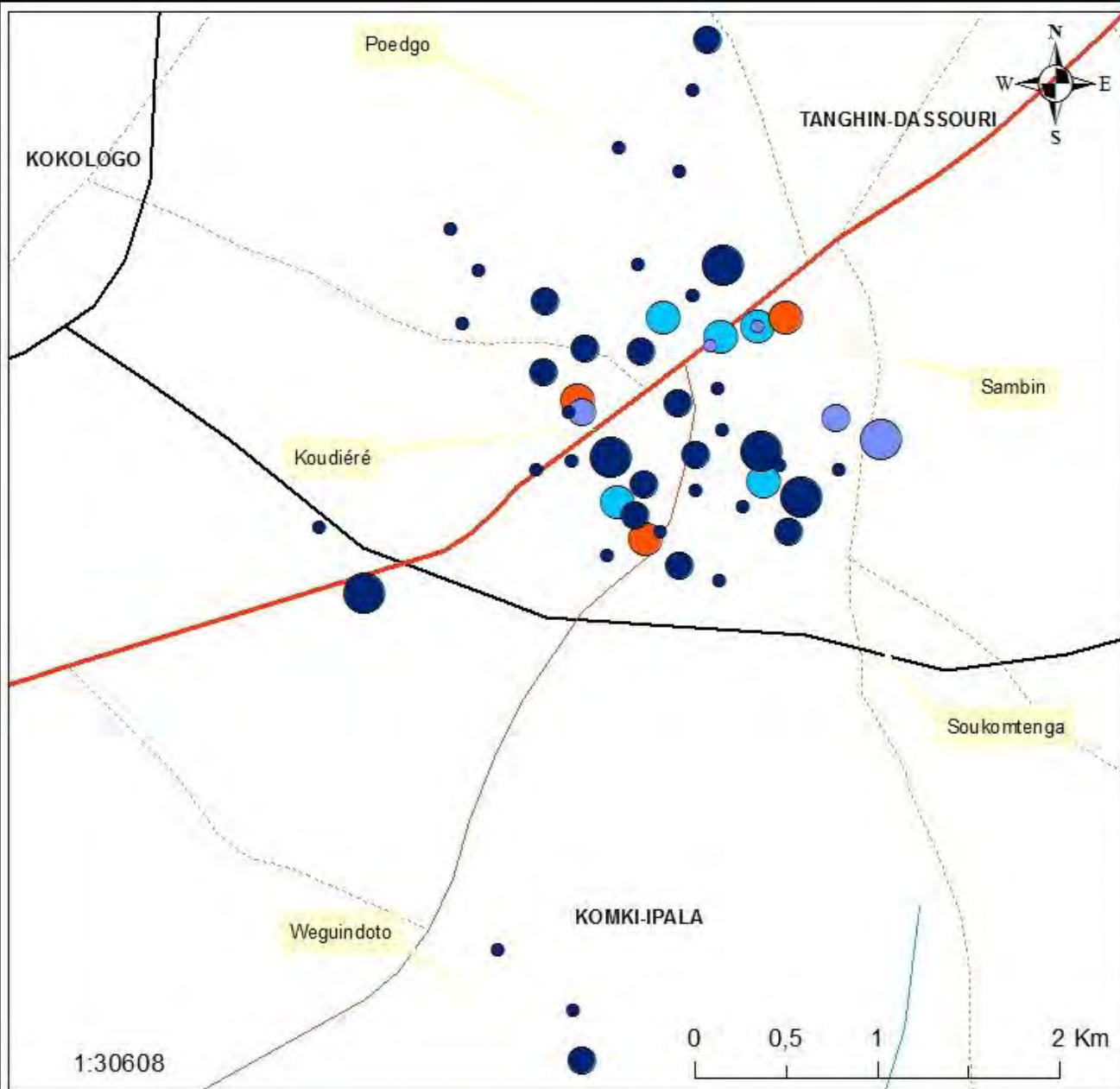
Public spaces water needs (liter/day)



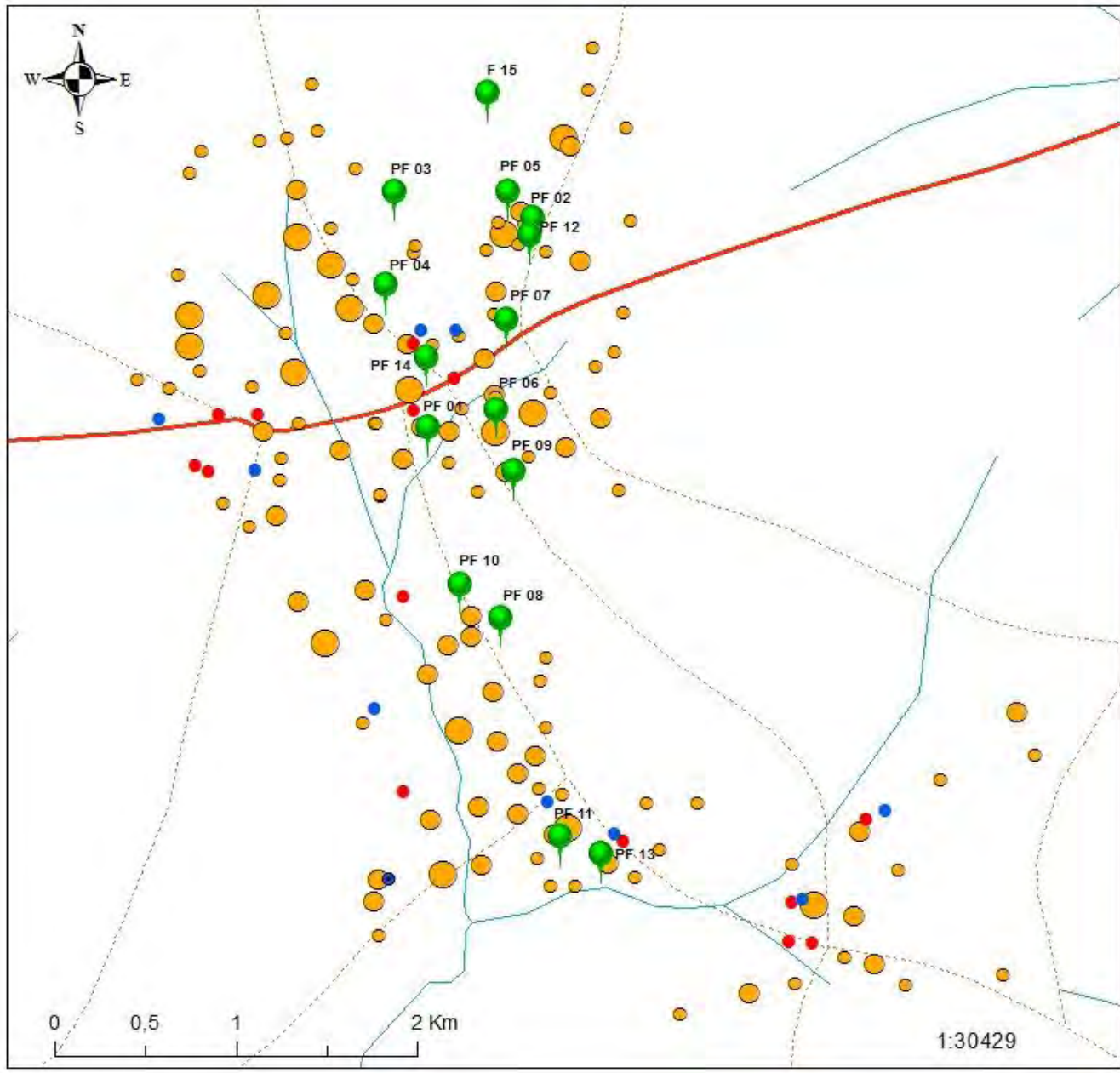
Water yield of non-functional potable water sources (liter/day)



Water yield of functional potable water sources (liter/day)



1:30608



WATER SOURCES IN THE VILLAGE OF KOUKOULDI AFTER WINROCK INTERVENTION

Number of people in spatial units

- Less than 50
- 50 - 100
- More than 100

- Hand dug well - borehole
- Potable and functional water sources
- Potable and non-functional water sources
- Water source rehabilitated by Winrock International

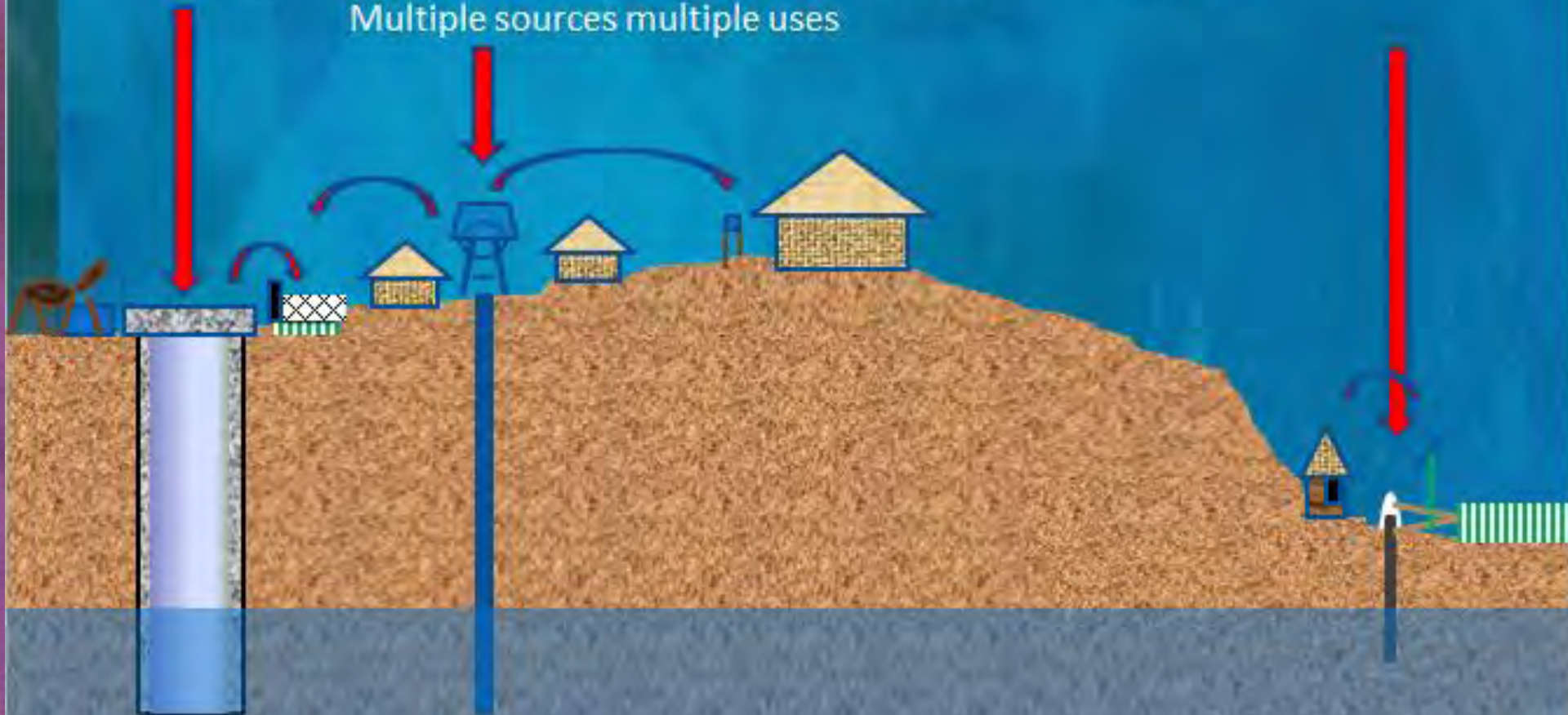
- River
- Track
- Regional roads
- National roads
- Commune limit

Technology choices and combinations:

(inspired by Niger example)

Diversification by improving the scope of sources:
Multiple sources multiple uses

+ software!



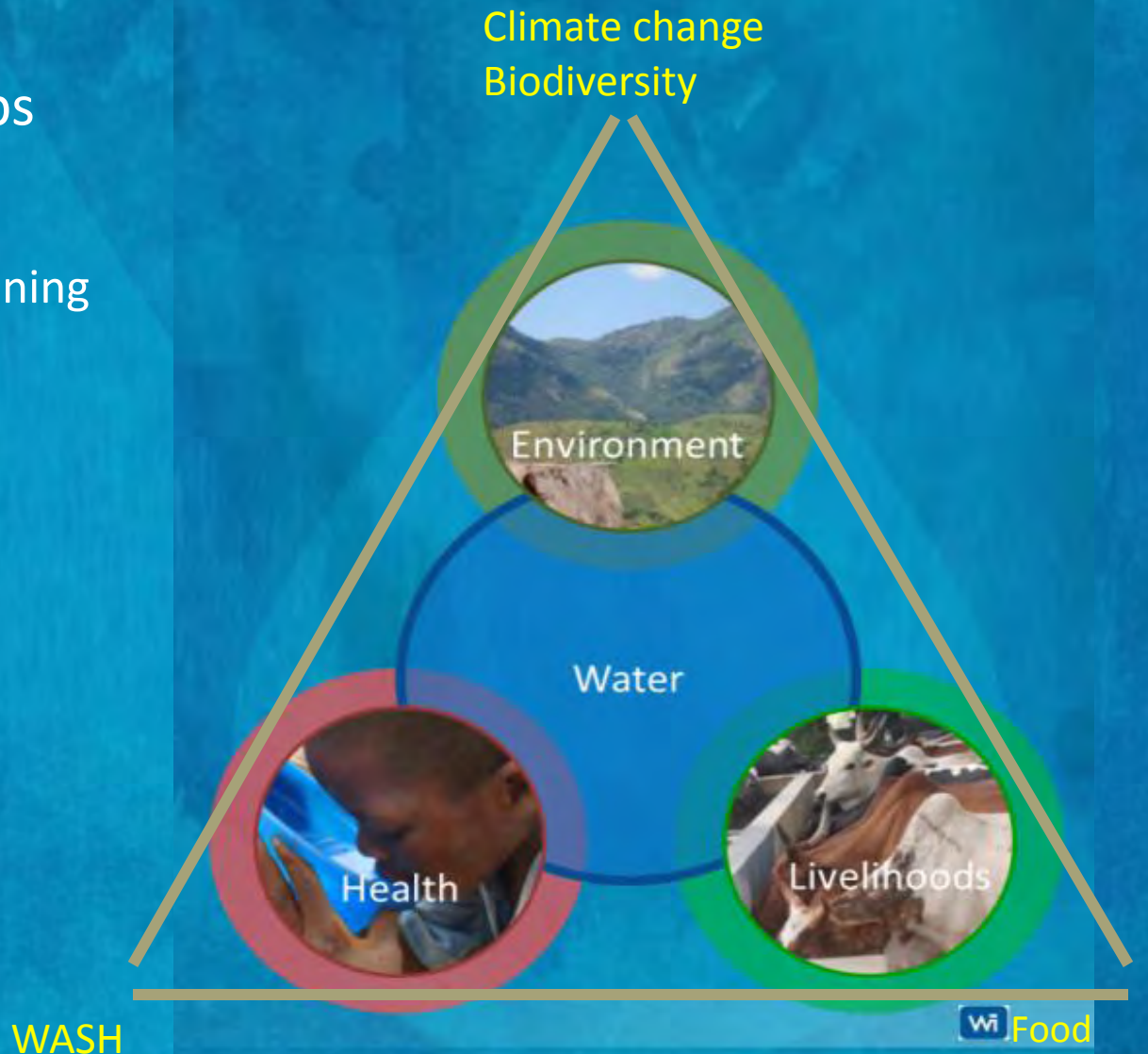
Research & Advisory Services

- Potential for Impact: Scoping study for Bill and Melinda Gates Foundation
- MUS Learning Initiative: Rockefeller Foundation

Opportunities

Strategic Partnerships

- Service delivery
- Capacity building: training and tools
- Outreach/education
- Research/advisory



Thank you!

Mary Renwick, PhD
Winrock International
mrenwick@winrock.org

