

Water Pricing:

Finding the right price in developing countries

2017 World Water Week Stockholm

Tuesday 29 August

09:00-10:30

www.watermission.org/worldwaterweek

#waterbuilds

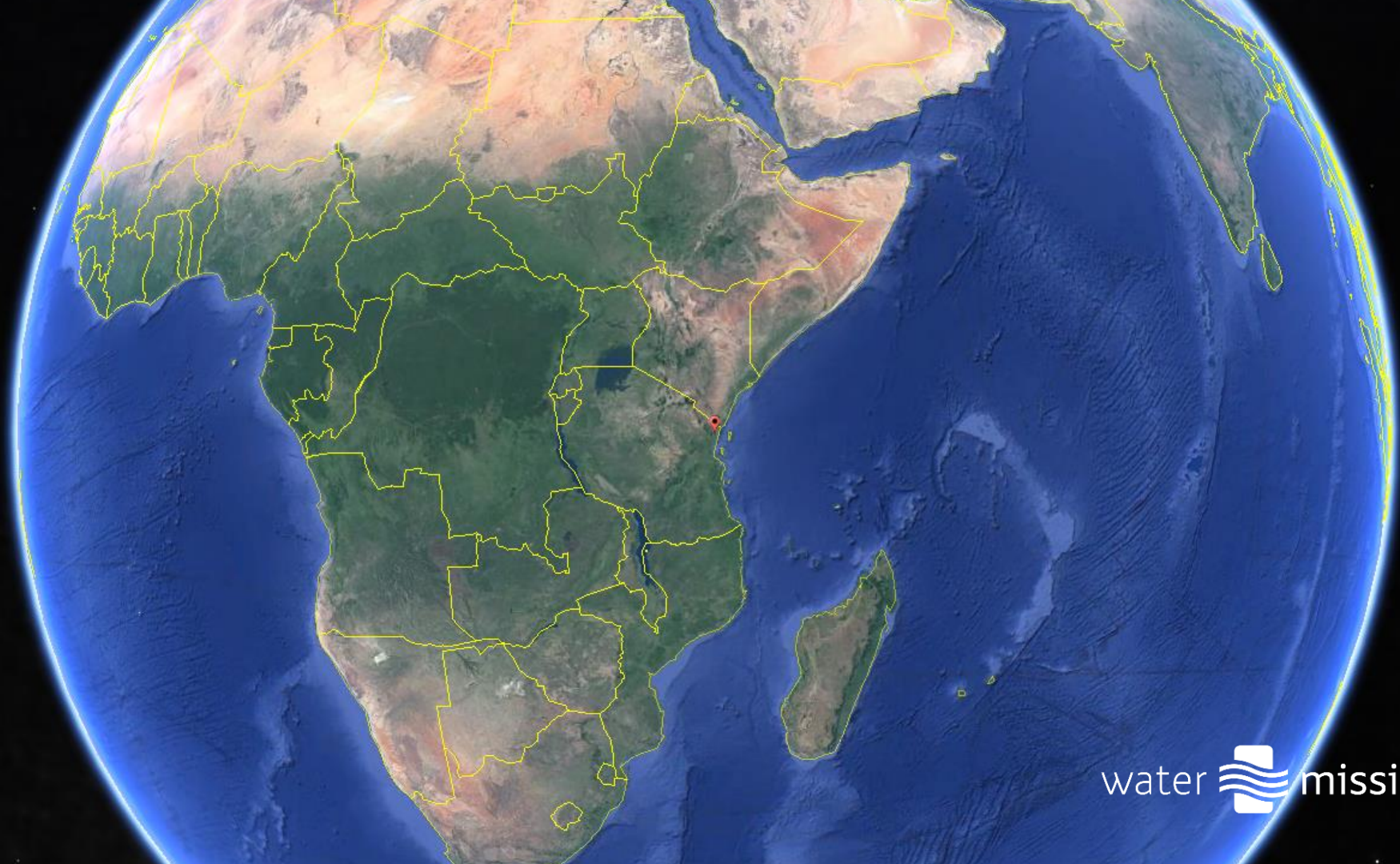


AGENDA

- Introduction
- Meet the Safe Water Committee
- Water pricing simulation
 - Budgeting for OpEx
 - Budgeting for CapManEx
 - Establishing Financial Targets
- Reviewing performance, responding to challenges
- Conclusions and Q&A

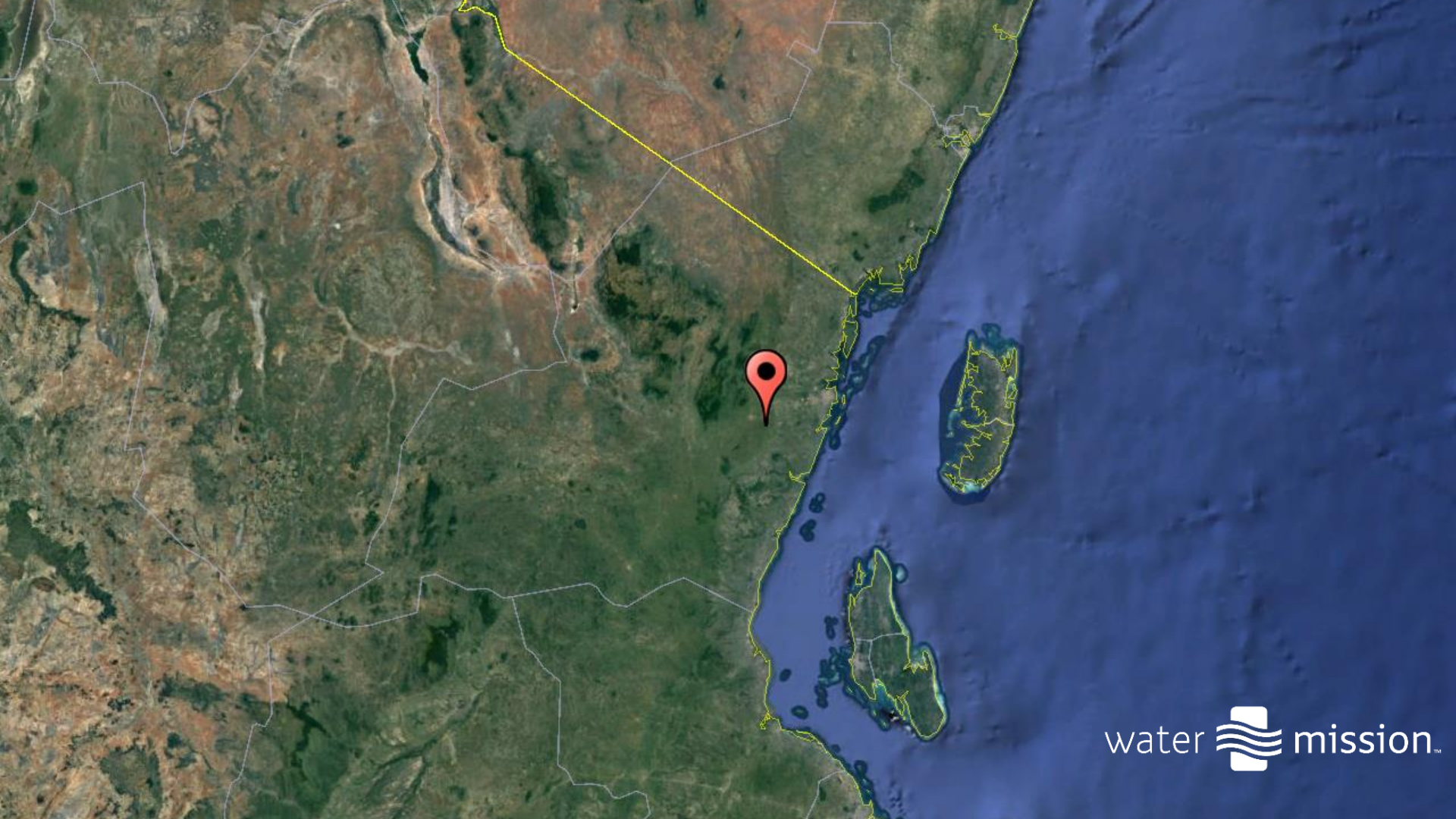


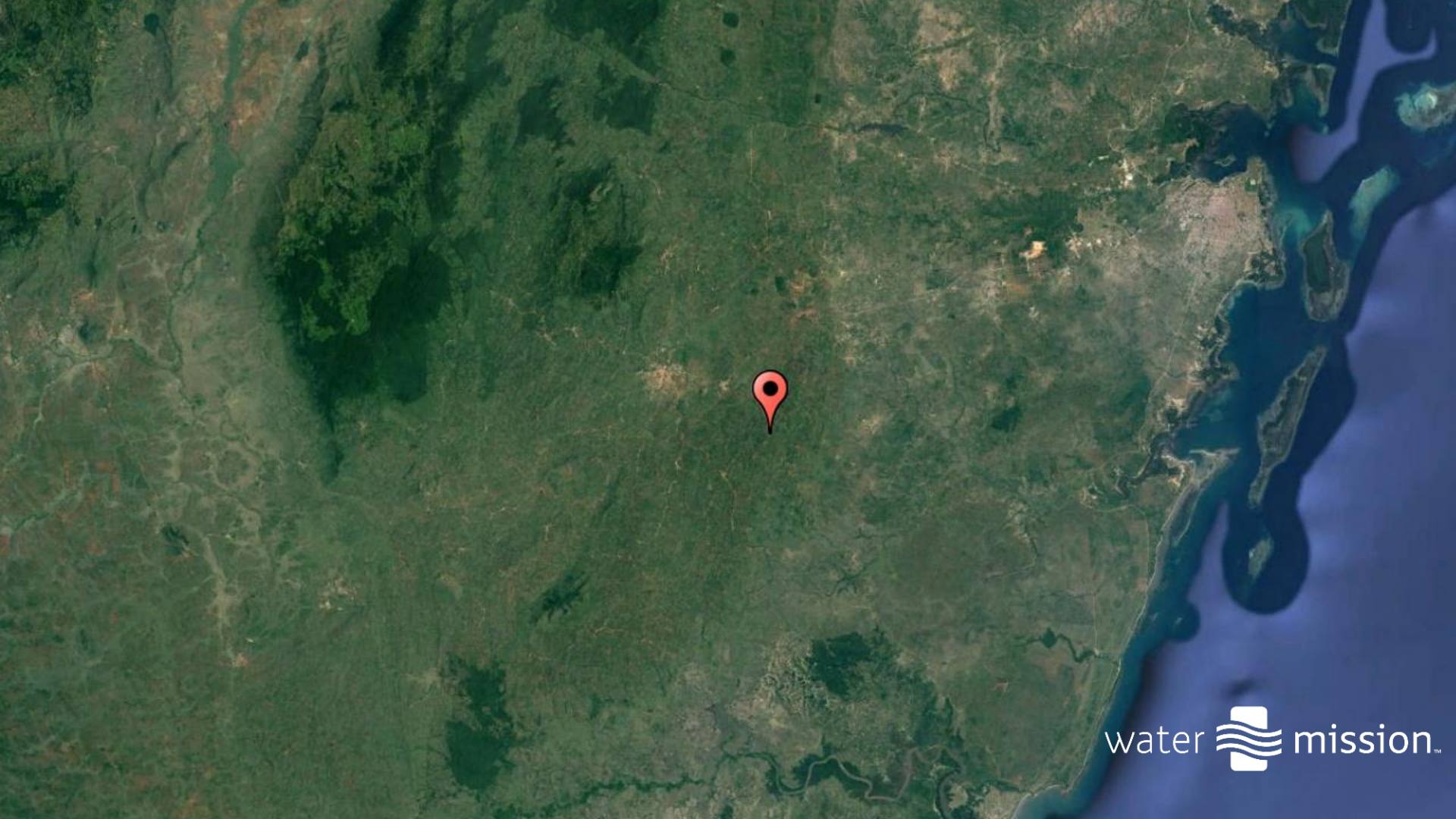




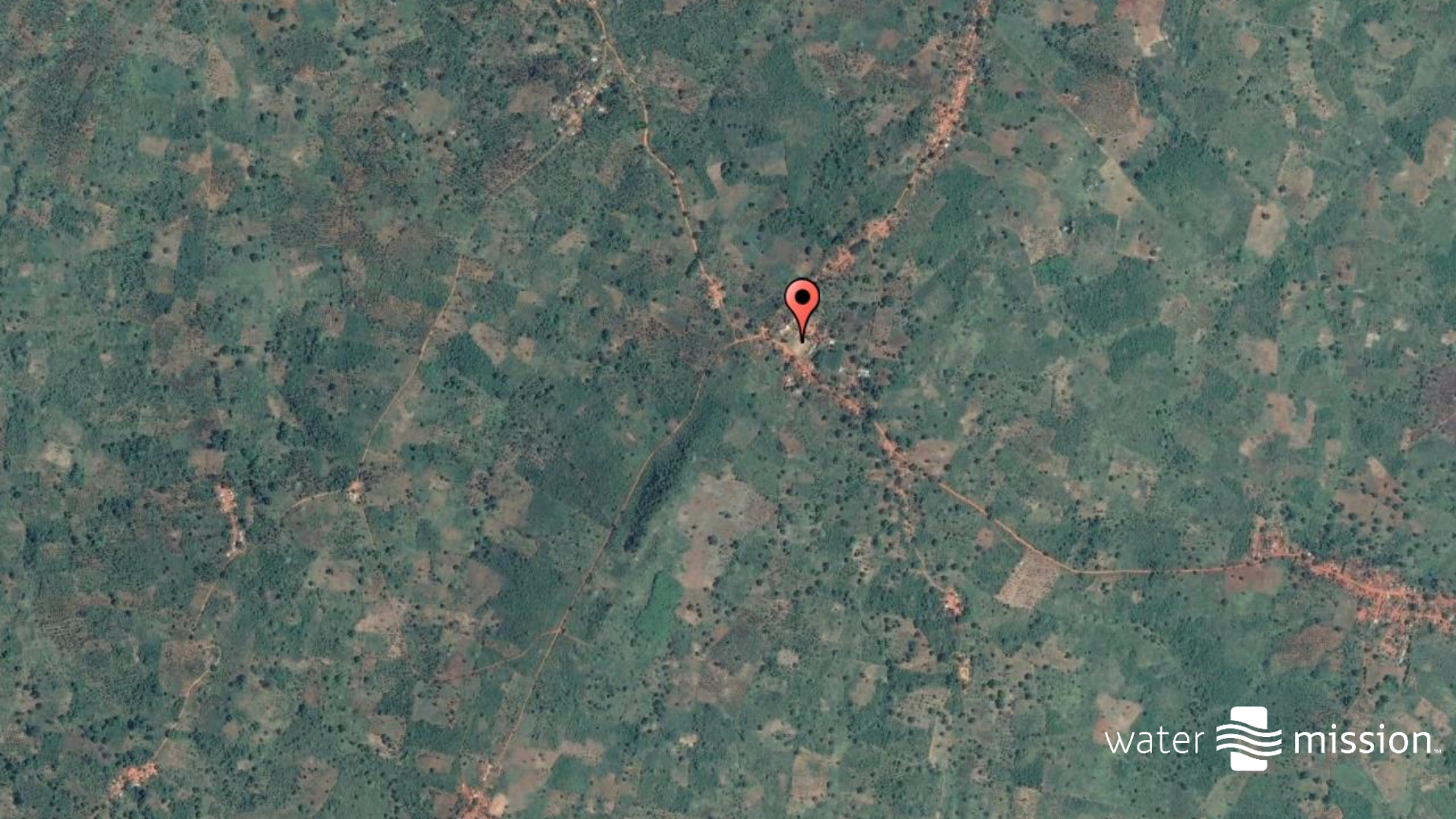


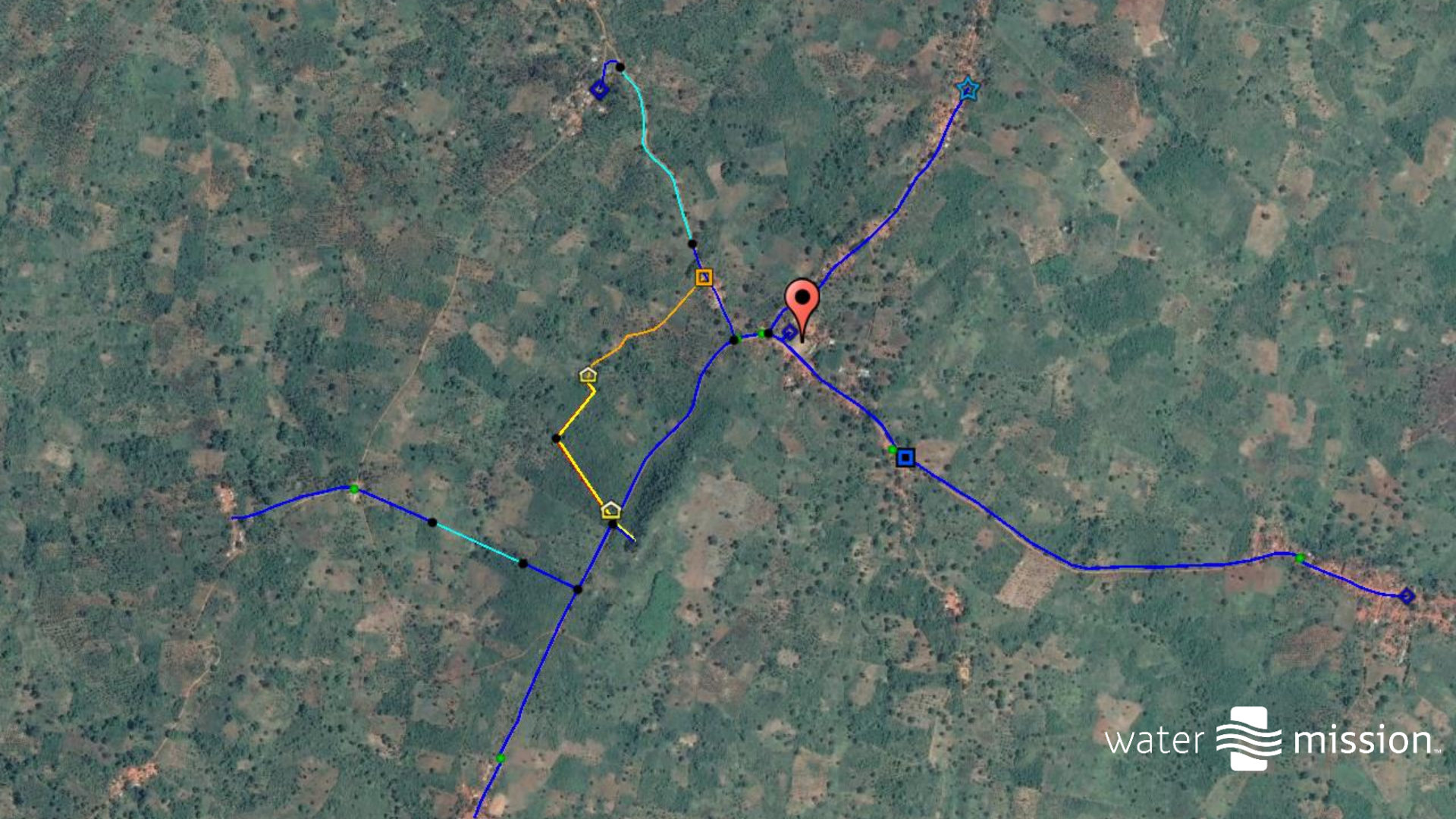


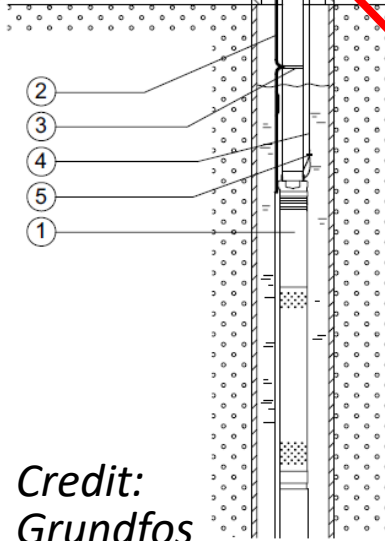
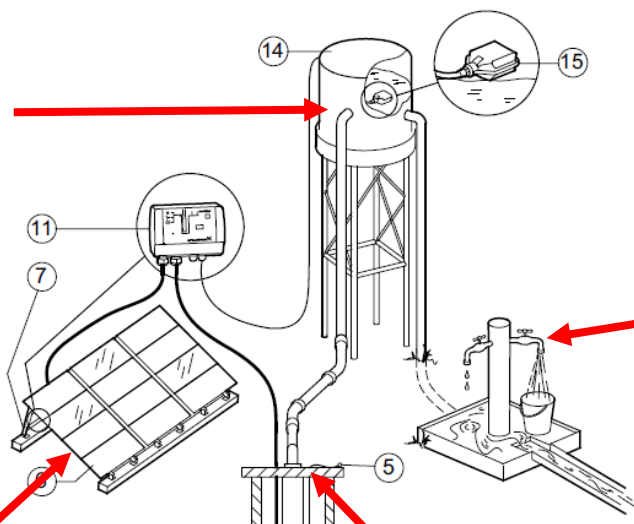












Credit:
Grundfos





Mpapayu Safe Water Project

*"I will Sprinkle Clean Water upon you,"
Ezekiel 36:25*

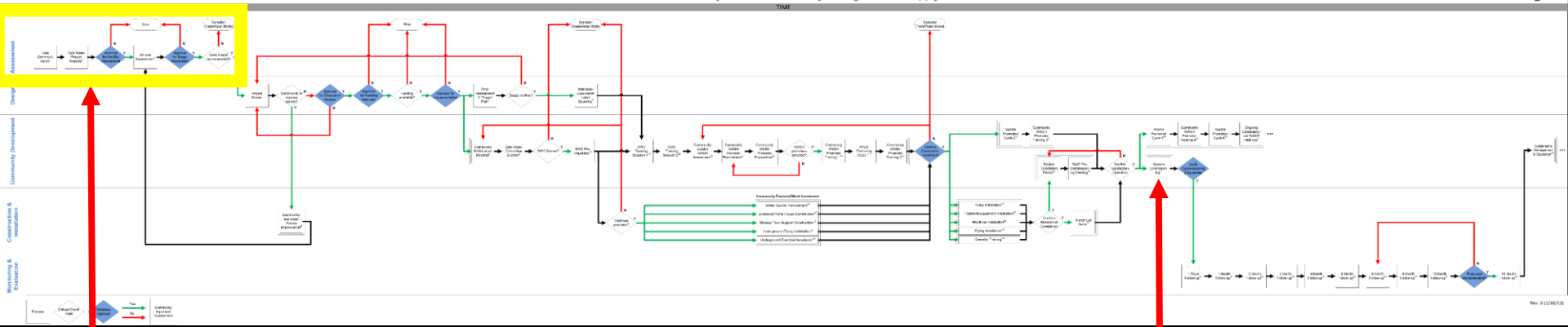
This Safe Water Project was implemented by

Water Mission Tanzania,

and Commissioned by

Hon. Ambassador Rajab Adadi (MP)

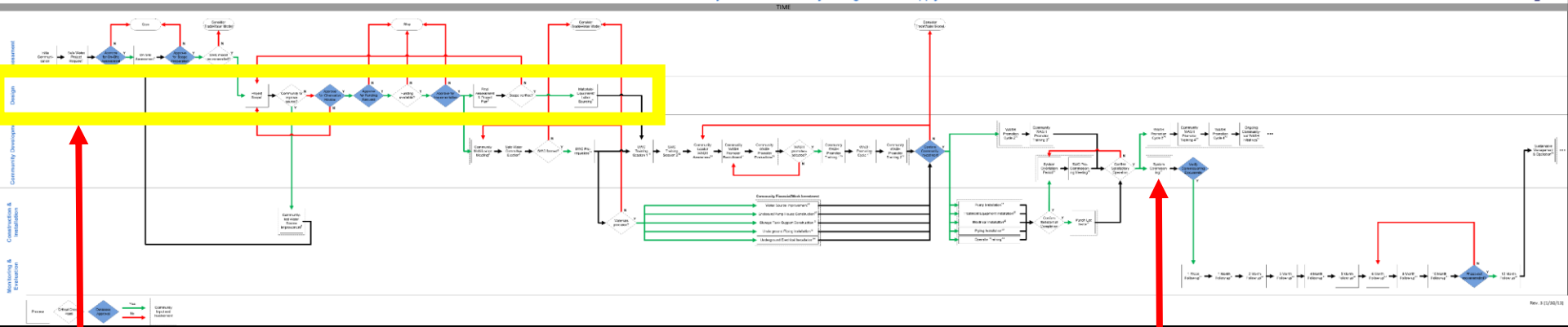
On March 10th, 2016



1. Assessment

Commissioning

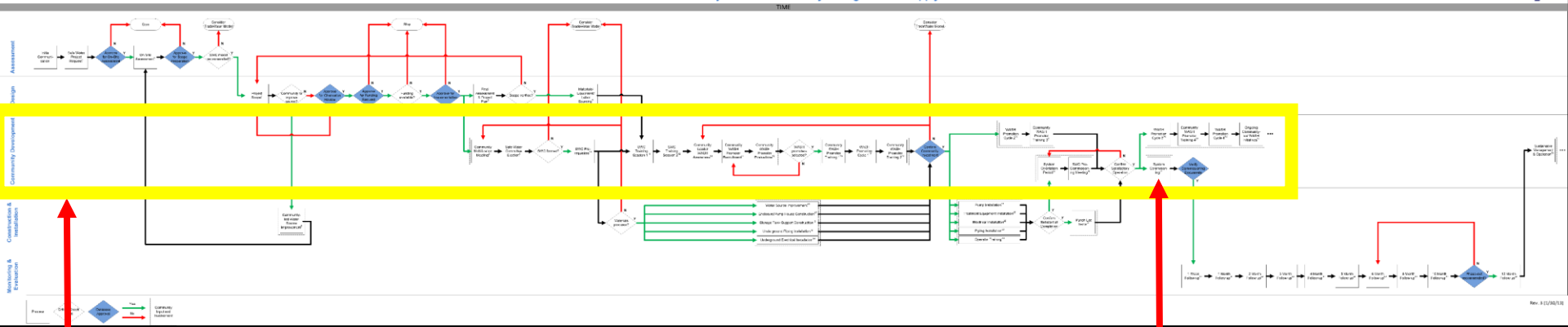




1. Assessment
2. Design

Commissioning

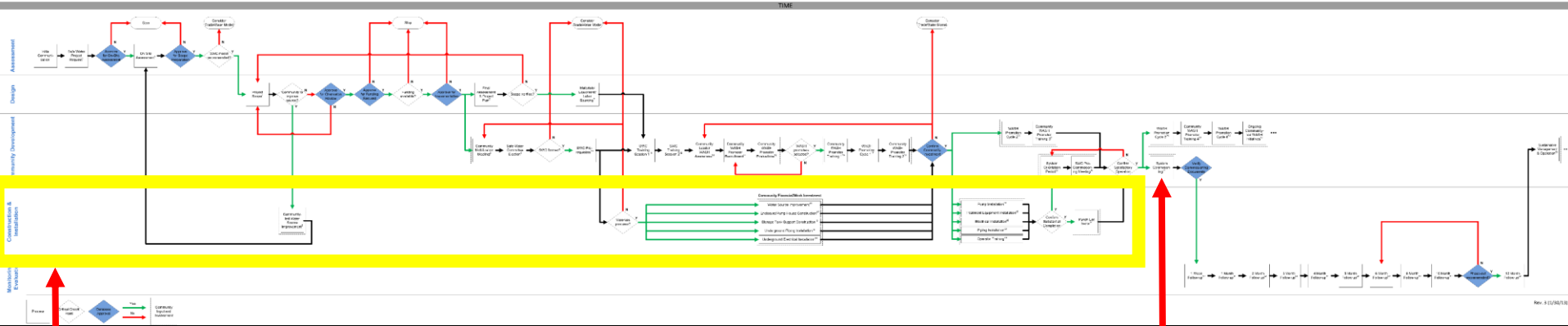




1. Assessment
2. Design
3. Community Development

Commissioning

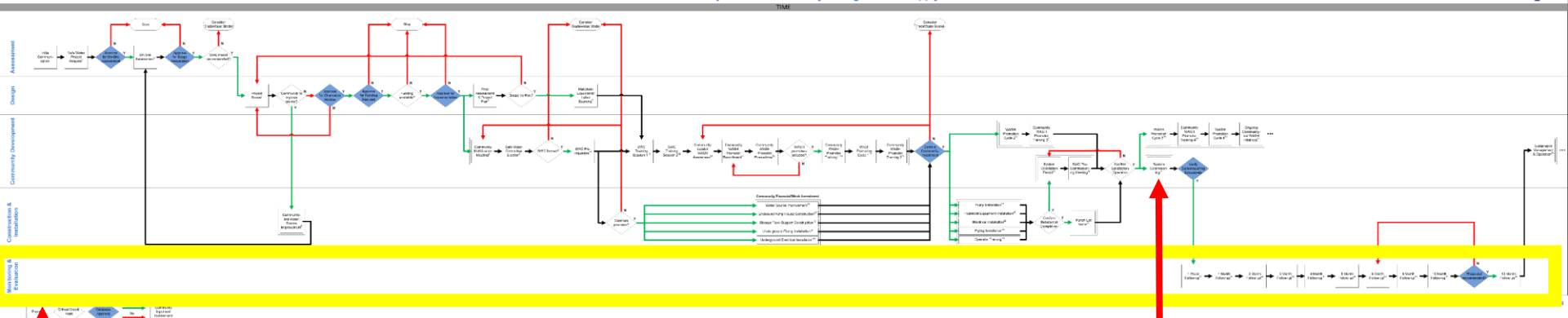




1. Assessment
2. Design
3. Community Development
4. Construction & Installation

Commissioning

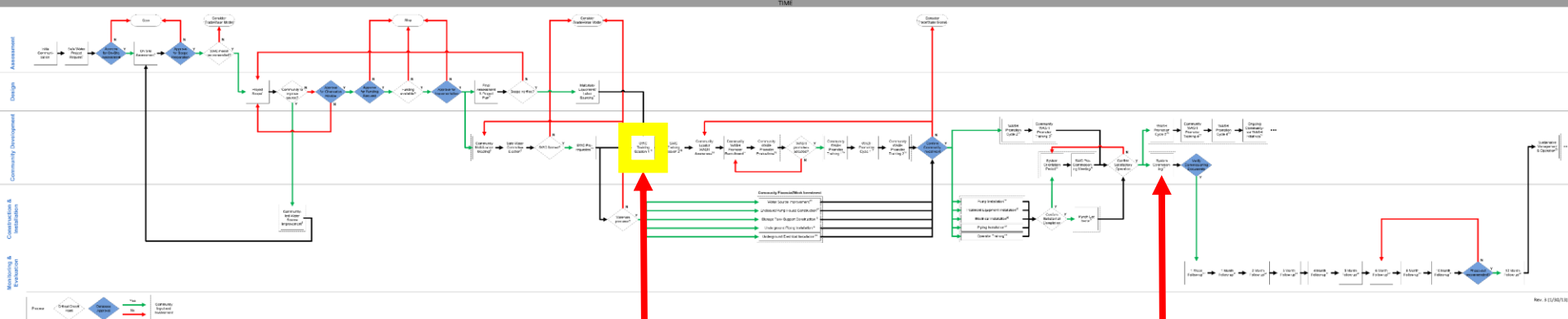




1. Assessment
2. Design
3. Community Development
4. Construction & Installation
5. Follow-up & Support

Commissioning





1. Assessment
2. Design
3. Community Development
4. Construction & Installation
5. Follow-up & Support

Water Pricing

Commissioning



MEET THE SAFE WATER COMMITTEE

- President – Abigail Kehr (Kohler)
- Local Government Representative – Bettina Nielsen (Grundfos)
- Treasurer – Andre Mergenthaler (Water Mission)
- Lead System Operator – Sean Furey (Skat/RWSN)
- WASH Promotion Coordinator – Victoria Goodday (CAWST)
- Community Development Officer – Andrew Armstrong (Water Mission)

ASSESSING AFFORDABILITY

ASSESSING AFFORDABILITY

- Typical water price – \$0.25/20L container
- Ideal water price – \$0.03/20L container
- Typical household income – \$60/month

$$0.05 \times \$60/\text{HH}/\text{month} = \$3/\text{HH}/\text{month}$$

($< \$0.02/\text{person}/\text{day}$)

*Maximum recommended household
monthly expenditure on safe water*



ASSESSING AFFORDABILITY

1. Identify appropriate price range
2. Estimate average household income
3. Calculate maximum recommended household monthly expenditure on water

BUDGETING FOR OPEX

BUDGETING FOR OPEX

Chemical costs	-	\$3/month
Chlorine test strips	-	\$10/month
Cleaning & maintenance	-	\$6/month
Operator salaries	-	\$90/month
Total commission for tap operators	-	\$60/month
Banking and transportation costs	-	\$11/month
Mobile airtime	-	\$30/month
<hr/>		
Total operation & minor maintenance costs	-	\$210/month



BUDGETING FOR OPEX

1. Estimate ongoing monthly expenses
2. Reinforce operational responsibilities
3. Develop ownership of budgeting process

BUDGETING FOR CAPMANEX



BUDGETING FOR CAPMANEX

Water source: Borehole repair	- \$700	(30 years)
Structures: Water tank platform & enclosure	- \$2,000	(30 years)
Electrical: Solar panels, controls, & wire	- \$2,200	(20 years)
Pump: Solar pump	- \$2,000	(15 years)
Water tank	- \$3,000	(20 years)
Tap stands (6): Meters, valves, pipe	- \$2,000	(10 years)
Water treatment equipment: Chlorinator	- \$500	(20 years)
Piping: Supply & distribution	- \$3,500	(20 years)
Other: Labor costs for installation	- \$1,500	(20 years)
<hr/> Total current cost of replacement	- \$17,400	



BUDGETING FOR CAPMANEX

- Total future cost of equipment & materials – \$47,475
- Savings required to replace all equipment – \$200/month

Operating and minor maintenance	+	\$210/month
<u>Savings to replace equipment</u>	+	<u>\$200/month</u>
Total ongoing costs		\$410/month



BUDGETING FOR CAPMANEX

1. Estimate current and future cost of replacement
2. Estimate monthly savings required for future replacement
3. Communicate the true cost of sustainability and reinforce ownership

ESTABLISHING FINANCIAL TARGETS

ESTABLISHING FINANCIAL TARGETS

- Households that will collect water – 160 (70%)
- Containers per household per day – 3 (10 L/person/day)

Ideal water price		\$0.03/container
Target households	x	160 HH/month
Target consumption	x	90 containers/HH/month
Estimated income		\$432/month

Est. income (\$432/month) > Est. expenses (\$410/month)



ESTABLISHING FINANCIAL TARGETS

Max recommended expenditure on safe water – \$3/HH/month

Water price		\$0.03/container
Target daily consumption	x	3 containers/HH/day
Days in a month	x	30 days/month
Anticipated expenditure		\$2.70/HH/month (\$0.09/HH/day)



ESTABLISHING FINANCIAL TARGETS

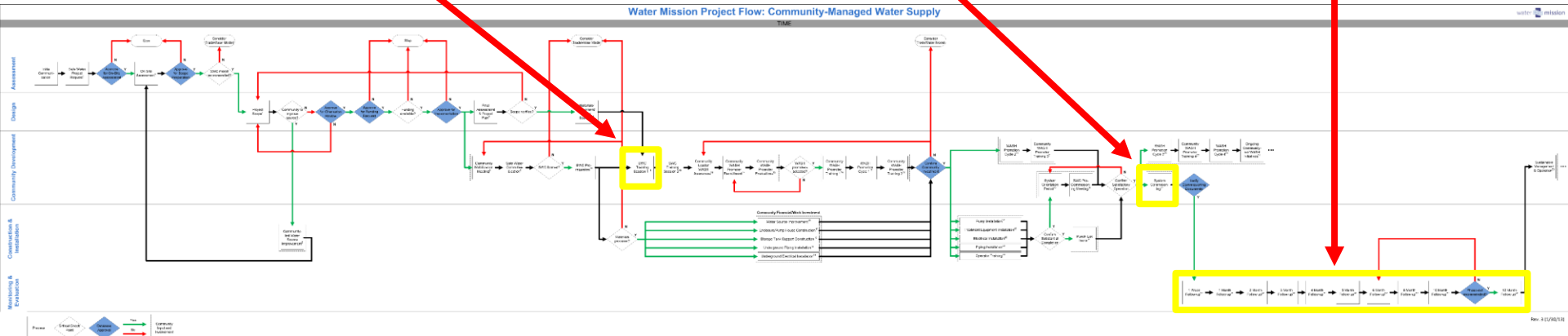
1. Estimate penetration (number of households collecting water)
2. Estimate consumption (number of containers per household per day)
3. Calculate revenue based on target water price
4. Check for viability and affordability
5. Reinforce vision that sustainability is possible

REVIEWING PERFORMANCE, RESPONDING TO CHALLENGES

Water Pricing

Commissioning

Follow-up & Support



REVIEWING PERFORMANCE, RESPONDING TO CHALLENGES

General Assembly Meeting

Total months in operation: 12 months



REVIEWING PERFORMANCE, RESPONDING TO CHALLENGES

General Assembly Meeting

Total months in operation: 12 months

Target Performance Actual Performance

• HHs collecting water:	160 (70%)	137 (60%)
• Consumption:	3 containers/HH/day	1.8 containers/HH/day
• Monthly expenses:	\$210/mo.	\$187/mo.
• Monthly revenue:	\$432/mo.	\$200/mo.
• Total savings:	\$2,600 (\$220/mo.)	\$153 (\$13/mo.)



REVIEWING PERFORMANCE, RESPONDING TO CHALLENGES

General Assembly Meeting

Total months in operation: 36 months



REVIEWING PERFORMANCE, RESPONDING TO CHALLENGES

General Assembly Meeting

Total months in operation: 36 months

Target Performance Actual Performance

• HHs collecting water:	183 (80%)	181 (79%)
• Consumption:	2.5 containers/HH/day	2.1 containers/HH/day
• Monthly expenses:	\$185/mo.	\$191/mo.
• Monthly revenue:	\$412/mo.	\$274/mo.
• Total savings:	\$8,100 (\$225/mo.)	\$2,137 (\$83/mo.)



REVIEWING PERFORMANCE, RESPONDING TO CHALLENGES



Conclusions

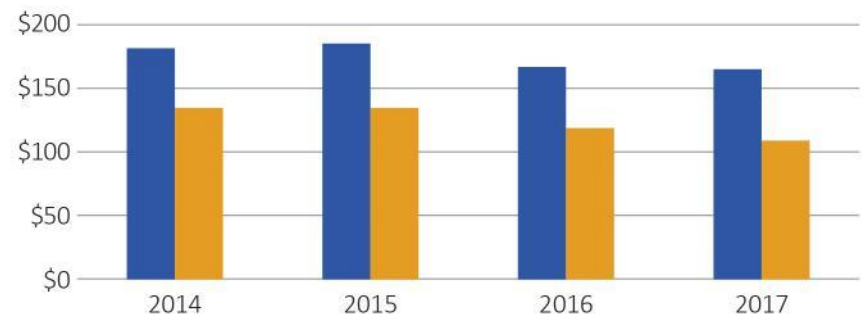
1. Financial viability is possible



Average Monthly Income & OpEx (in USD for 150 Projects)

■ Average Total Monthly Income ■ Average Total Monthly OpEx

BY YEAR



95%
Communities that consistently cover OpEx with revenue from water sales

\$174
Avg. monthly income/system (USD)

\$124
Avg. monthly OpEx/system (USD)



Altmino - \$2,940
Hidalgo - \$2,010
Encanto - \$1,047
Bo Vista - \$2,568
Bo Pino - \$2,190
Acacias - \$1,364
Mercede - \$2,332
Palestina - \$2,709
B Hands - \$1,395
Cance - \$959
Cloches - \$1,045
Corail - \$1,235
Lafiteau - \$5,693
Pierre - \$1,150
Canizal - \$1,459
Sur Alto - \$1,106
Loma N - \$4,055
Martin - \$8,004
Elena - \$1,802

United States
Mexico
Honduras
Haiti
Peru

Liberia

Uganda
Kenya
Tanzania
Malawi

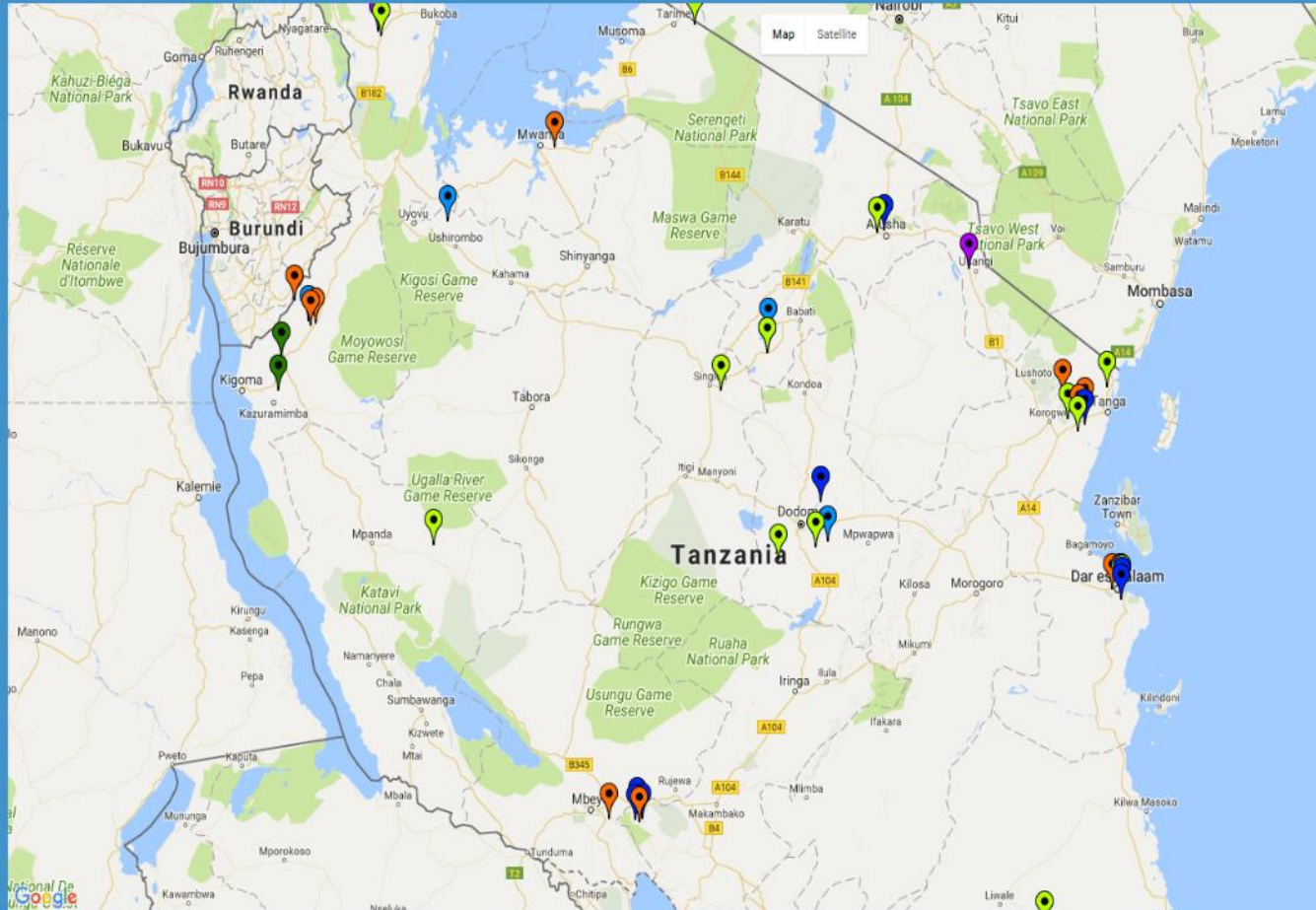
Indonesia

Kabawanga - \$1,040
Kabira - \$813
Kiringa - \$805
Kisima Island - \$590
Kidimu - \$3,054
Mbweka - \$1,094
Chanhumba - \$4,887
Humbolo - \$1,364
Lulembela - \$9,643
Mpapayu - \$2,493
Olosiva - \$1,073
Gidewari - \$728
Terjun - \$1,630
Netenaen - \$664
Lae Hole - \$614
Ukwe - \$897
Dickson - \$1,193
Chezi - \$691
Kaporo - \$574
Mangwazu - \$550

Conclusions

1. Financial viability is possible
2. Water committee support is fundamental





Expand All Collapse All [Back to Global Overview](#)

Tanzania

- Chanhumba Community
- Financial Sustainability
 - Low Replacement Cost Rec... under 1 day active
- Humbolo
- Mpapayu Community
- Olosiva Community

Show inactive alerts ?

Total projects: 4
Total projects with alerts: 1 (25%)
Total alerts: 1

00.0150.37 Olosiva Community

Date Range 30 March 2017 - 27 June 2017

Alert Timeline Approved alerts

Management Sustainability

- No Follow-up Reports Received ●
- No Monthly Summary Reports Received ●

Financial Sustainability

- Low Operational Cost Recovery ●
- Low Replacement Cost Recovery ●
- Low Banking Compliance ●

alert is active
 alert is inactive
 missing data
 action taken

[Print report](#) [Open project in PUMP](#)

Historical data for Low Operational Cost Recovery

Net income (TZS)

Income and Expense (TZS)

Communication Log from 29 Jun 2017

Filter by

- Hide projects without alerts ?
- Show my followed alerts only ?

Choose Tag

Specific user's subscribed alerts

Choose Phase

Choose Country

Choose Project

Days active Over 1 day(s) Under 365+ day(s)

Alert Types

- Accessibility
- Safety
- Technical Sustainability
- Management Sustainability
- Financial Sustainability

[Update Map](#)

[Export to Excel](#)

Conclusions

1. Financial viability is possible
2. Water committee support is fundamental
3. High performance requires ongoing investment

PROGRAM AIR MINUM DAN KESEHATAN

KERJA SAMA

GRUNDFOS



waha mitra

Untuk : Masyarakat Kelurahan Terjun Dan Sekitarnya

PROGRAM AIR MINUM & KESEHATAN
KERJA SAMA
GRUNDFOS
& **WAHA MITRA**
Untuk : Masyarakat Kelurahan Terjun dan Sekitarnya

Infomasi, Panduan dan
Kartu Anggota





K.A.H.

K.A.H.

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Thank you!

Come visit us and our partners at **Exhibit #8**
(next to the SIWI Sofa) to talk *water pricing,*
solar pumping, & remote monitoring

www.watermission.org/worldwaterweek
[#waterbuilds](https://twitter.com/waterbuilds)

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