
IWI pa!

Co-creating a water pump
for use by farmers in
northern Uganda

12 May 2025



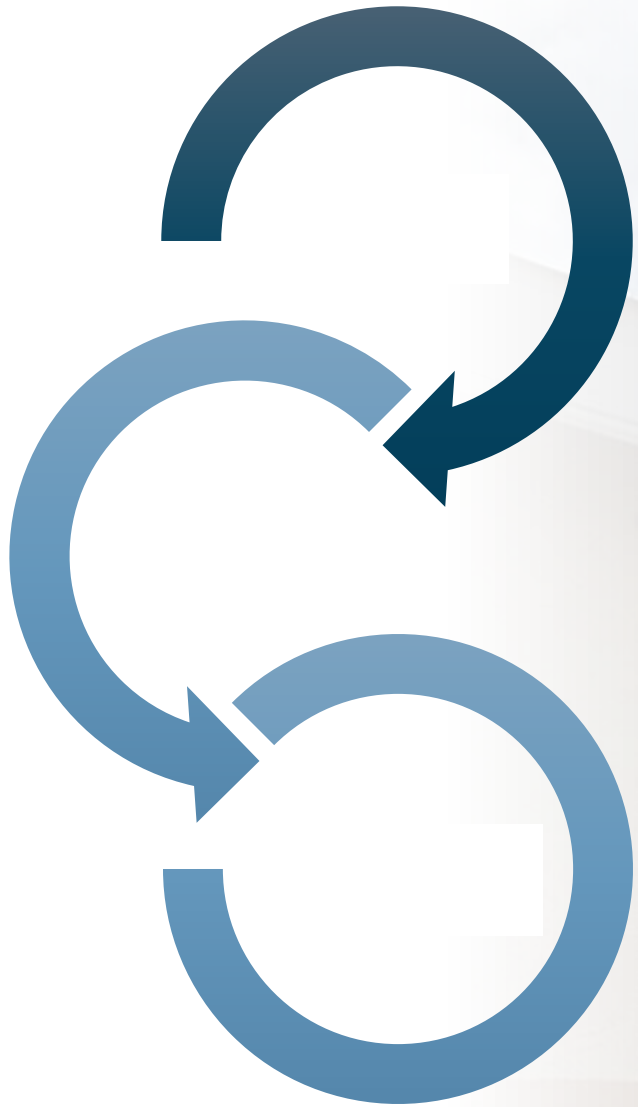
Building community in Uganda: a Co-Creation Summit experience

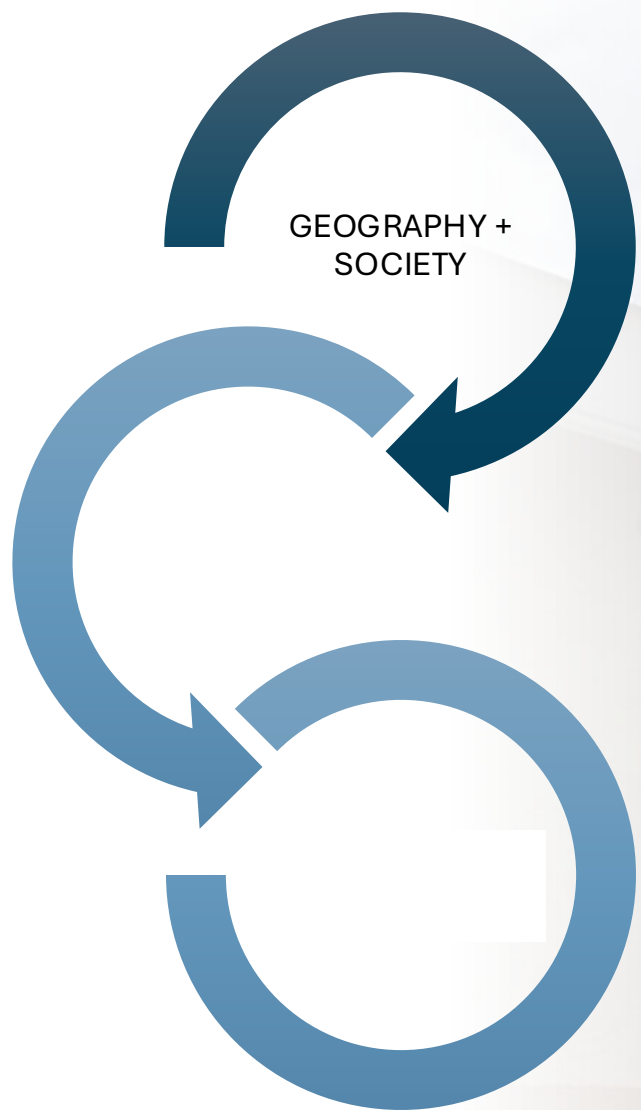


The team poses with the water pump. Left to right: Cosmas (Kulika Uganda), Tarek (D-Lab), Ruta, Alex (D-Lab), Carol (Kulika Uganda), Isaac, Sunday, Amos (Andre Foods International), Philip (Kulika Uganda). Photo: Courtesy Tarek Meah.

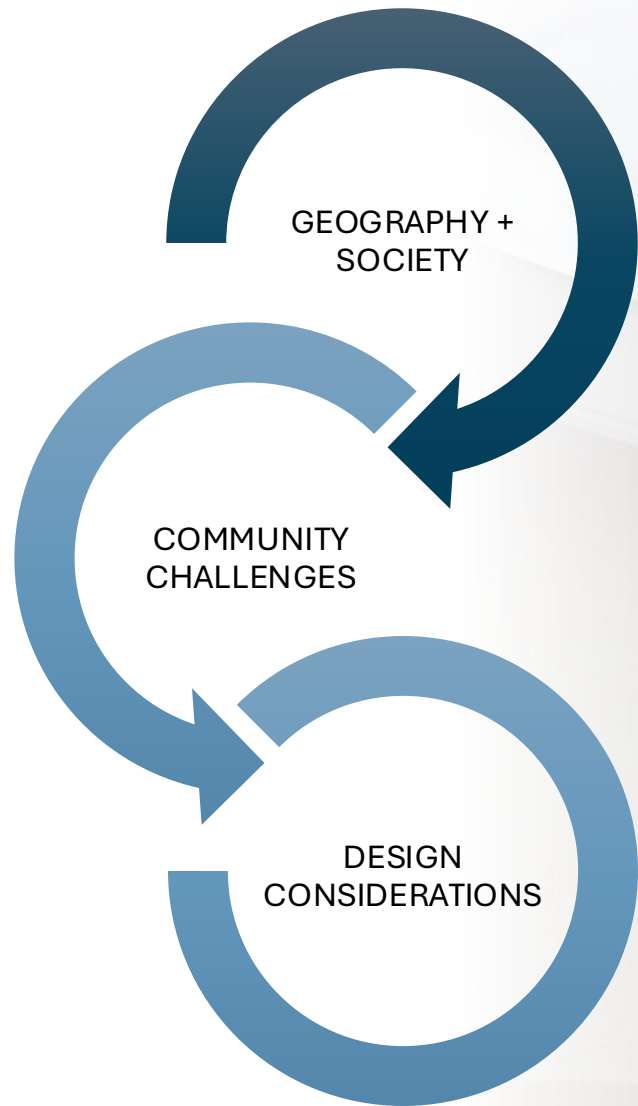
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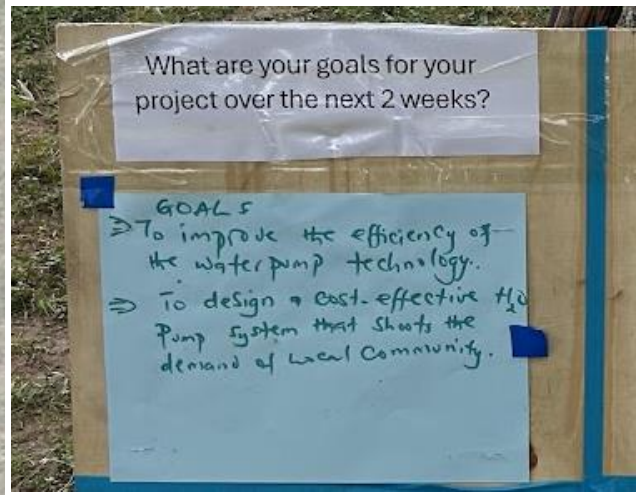




PATH STATEMENT:

Farmers spend 4-6 hours a day collecting water from streams to water their crops. Our IWI water pump cuts this time in half and also improves farmers' accessibility to water during the dry season. We all know water is life; the IWI water pump will make us thrive!





What do you want to learn?

- What to learn:
- Current of water usage and water pumps
 - Current situation
 - Learn about the different crops
 - Learn people's needs
 - Learn on the water source
 - Learn pump flow rate of the system
 - Size of the tank

Who do you need to meet?

Who do you need to talk to?

- Farmer (8)
- Farmer groups
- Partners
- Local leader

CO-CREATION GOALS:

To improve the efficiency of the water pump technology.

To design a cost-effective H₂O pump system that shoots the demand of local community.

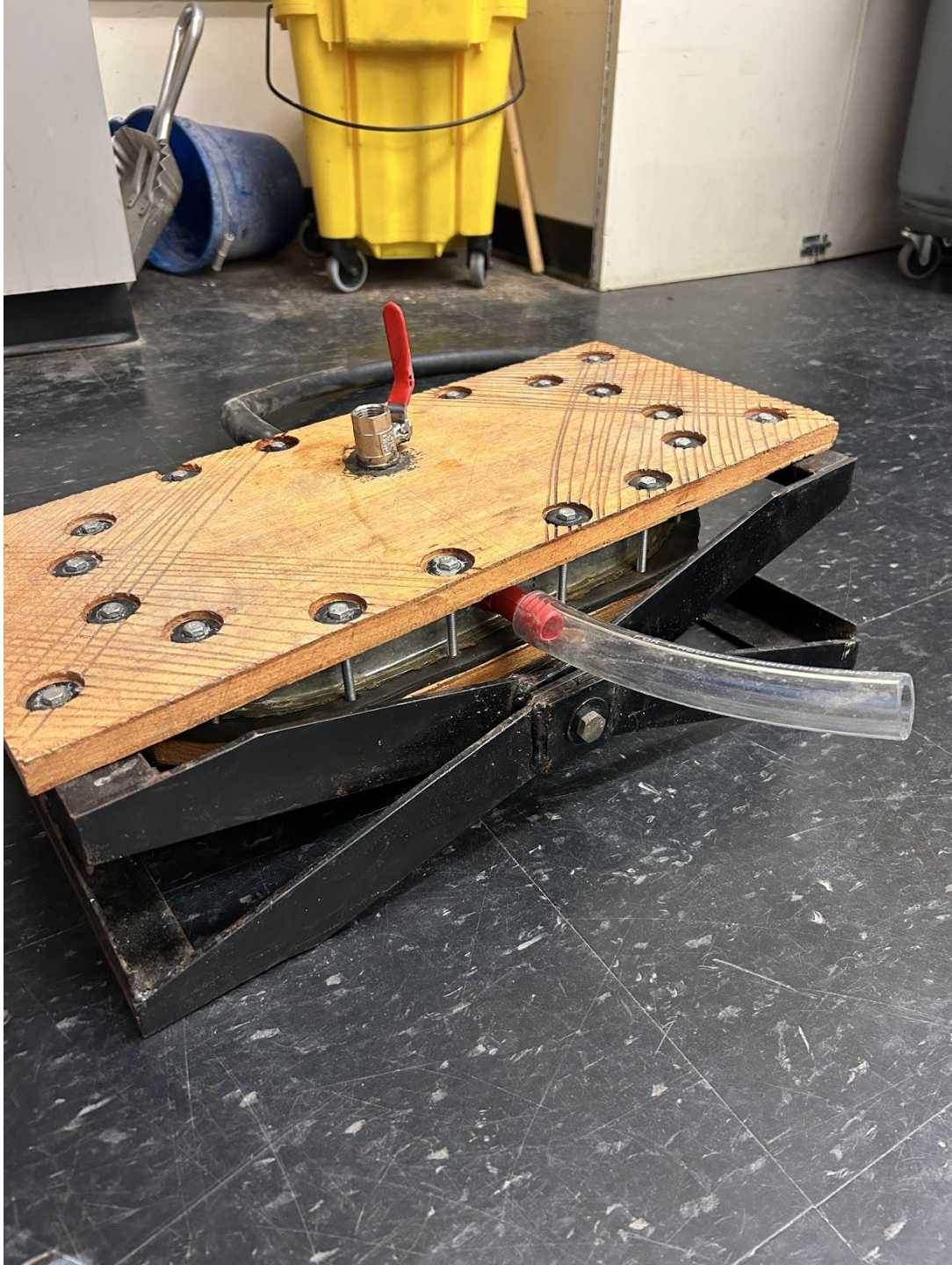
How will you learn it?

- Speak with community members / NGO / local leaders
- Visit gardens/sites of interest
- Observe the current water pumps & irrigation system
- Use the water pumps
- Take a tour of the camp

Where do you need to go?

- gardens
- Farmers' accommodation
- NGO offices

INVEST



KEY STAKEHOLDERS:

End users who will use the pump on a daily basis.

Farmers



Coordinate shared resources and influence adoption within communities.

OAAA (farmers group)



Provide on-the-ground support and connect the project to local communities.

Kulika Uganda



Manage agricultural training in the camps and support implementation.

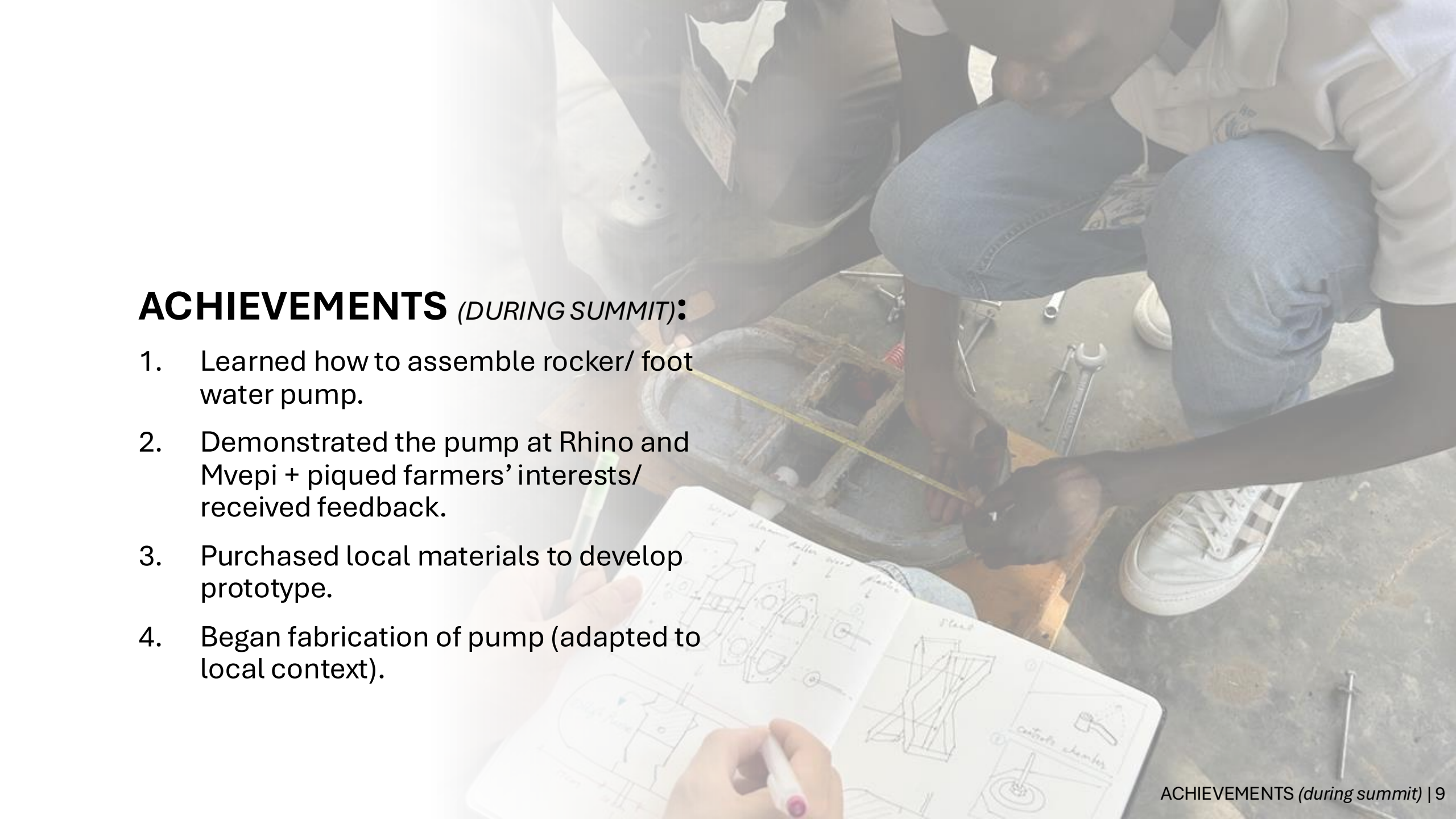
Andre Foods International



Designed, tested, and iterated the pump based on feedback from local partners.

Our team





ACHIEVEMENTS *(DURING SUMMIT):*

1. Learned how to assemble rocker/ foot water pump.
2. Demonstrated the pump at Rhino and Mvepi + piqued farmers' interests/ received feedback.
3. Purchased local materials to develop prototype.
4. Began fabrication of pump (adapted to local context).

A photograph of a classroom with wooden desks and colorful chairs. A projector screen is visible in the background, and a projector is mounted on the ceiling. The room has large windows and a drop ceiling with fluorescent lights.

ACHIEVEMENTS *(AFTER SUMMIT)*:

1. IWI-Uganda successfully fabricated a pump using locally sourced materials.
2. IWI-US applied for MYCP Igniting Impact micro grant.
3. IWI-Uganda and IWI-US collaborated on a manual to demonstrate how to fabricate the pump.
4. IWI-Uganda and IWI-US are ideating jigs to facilitate more stream-lined pump fabrication.



1

Step 1: Wood Platforms. Use the Aluminum Jig to trace out the outline. Cut 2 wood sheets into according shape, and drill holes (diameter 0.5cm). Install the metal valve into the larger hole (Need to have the lever to seal).

1:10 X1

2

Step 2: Metal Chambers. Take a 100cm long metal C-beam, with the cross section dimension of 3cm*5cm. Mark the points every 38 and 38cm alternatively (twice). Use the tin snip to trim the horizontal members of the C-beam (top and bottom). Fold it inwards to form a rectangle, weld the joint.

1:20 X1 1:10 X1

3

Step 3: Use the same C-beam, cut into lengths of 18cm, 18cm, 7cm. Drill the holes as demonstrated and weld together in a H shape, then weld into the rectangular frame.

1:5 X2 1:5 X1

4

Step 4: Prepare 4 pieces of hard rubbers (recommend using tire, 1cm thick) into demonstrated dimensions. Drill holes into them and secure on to the C-Beams with bolts, nuts and washers. They seal and release water flow under the exerted pressure. MAKE SURE 2 RUBBERS ARE SECURED ON THE OUTSIDE OF THE CHAMBER WHERE THE METAL VALVE EXISTS (DOTTED CIRCLE). Then insert 2 hose connectors to the chambers, seal with silicon if needed.

1:5 X4 1:2 X2

5

Step 5: Rubber Pump. Prepare a sheet of hard rubber 44*24*1cm and 4 plastic discs with diameter of 9cm. Assemble as demonstrated on both sides of the rubber with nuts, washers and 14cm long bolts.

1:5 X1

6

Step 6: Assemble in the order (from top to bottom) of Top platform, metal chamber, rubber pump and bottom platform. Secure with 20 long bolts. Raise each bolt with 3 nuts and washers at the back of top platform, and both sides of the bottom one. Flip the pump as demonstrated.

1:1 X60

7

Step 7: Find or fabricate metal bracing, make sure it can include at least 1cm in diameter to fasten the rod. At the central line of the pump, secure 3 to 4 brackets with screws.

1:1 X3

8

Step 8: Prepare wooden base elements as demonstrated, for the horizontal element, drill 2 larger counterbore to fit the bolt head in. For the side anchor pieces, the hole needs to fit a metal sleeve bearing (a tube) to reduce friction and prevents the wear in the softer material.

1:10 X1

9

Step 9: Assemble 3 Wooden pieces and secure with screws. Make sure the counterbore side of the horizontal element is facing upwards as demonstrated.

1:5 X2 1:10 X2

10

Step 10: Secure the base onto the pump by aligning the 2 bolts with the holes of the horizontal element, secure with nuts. Insert the 34cm long bolt through the side element and the bracing. Secure with a nut and a washer on the other end.

1:5 X3 X1

11

Step 11: Connect the rubber pipes to the hose connectors on both sides. The inner diameter of the pipe should be 2cm. The installation is then complete.

1:1 X3

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Step 12: Final assembly. The pump is now ready for use.

1:1 X3

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Step 13: Final assembly. The pump is now ready for use.

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Step 14: Final assembly. The pump is now ready for use.

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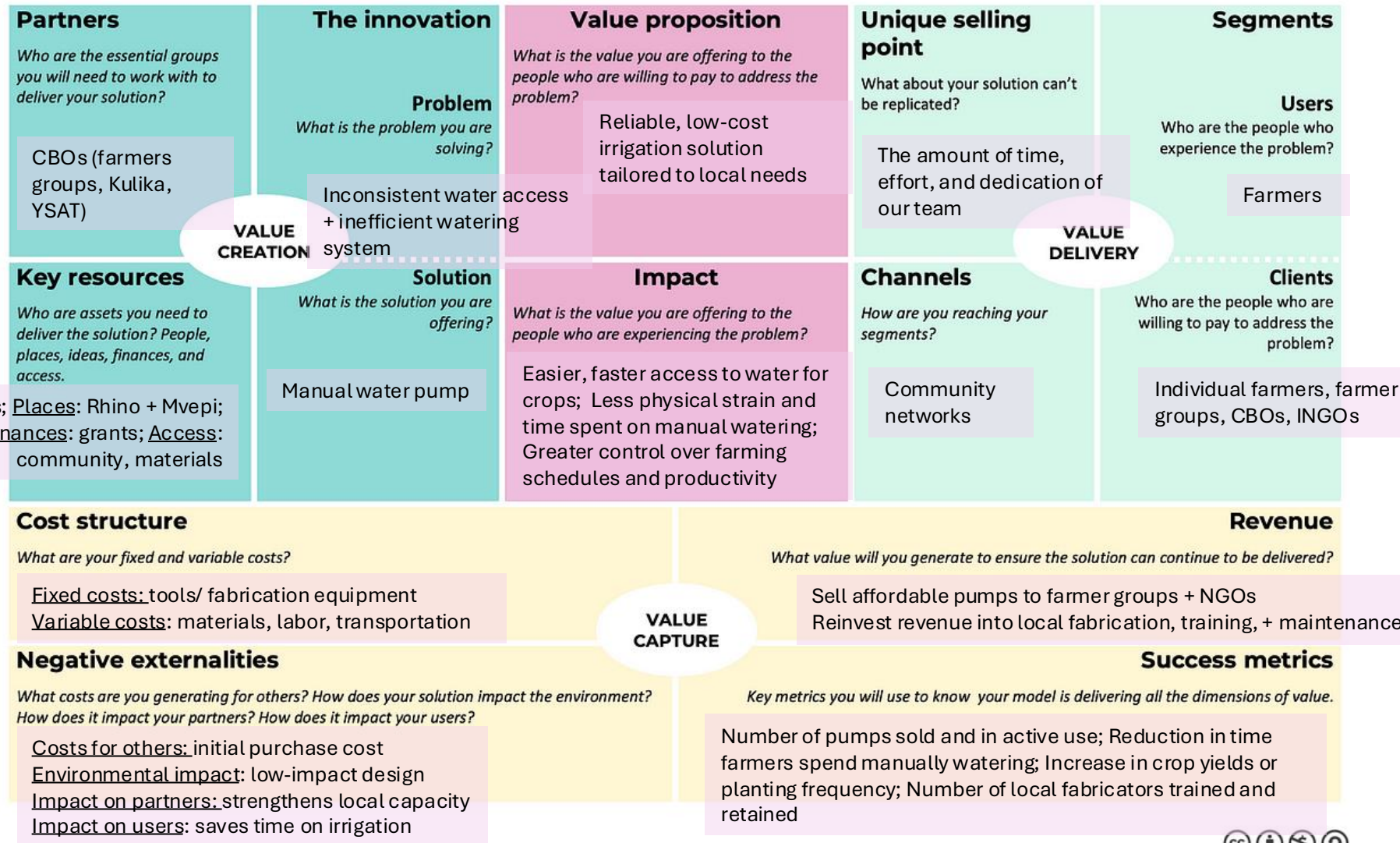
1:1 X3

Maker Model Spectrum

“I’m very happy that you
said it’s made local here”
- Samuel, farmer in Imvepi



Humanitarian Innovation Business Model Canvas



FUTURE PLANS:

1. IWI-Uganda will replace the metal base with a wooden one, to decrease cost of materials and overall cost of pump to farmers.
2. IWI-US will continue to apply for grants.
3. Both teams will continue to communicate via WhatsApp chat and weekly video/phone calls.

Datum / Date
"I'm very happy that you said it's made local here"
- Samuel, Farmer @ Imvepi
"We look forward to implementing this to solve our challenges"

