



aQysta
Innovating for Impact

The Barsha Pump

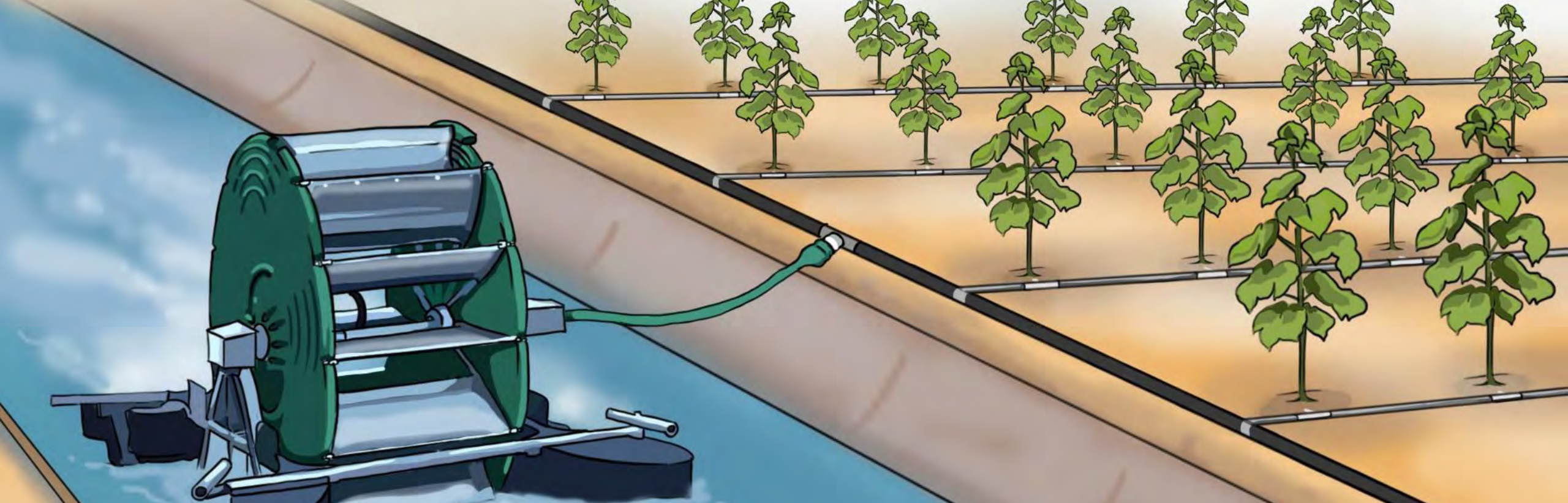
1.6 billion
people
suffer from
Economic
Water Scarcity



- Zero Emissions
- Zero Operating Costs
- Virtually no maintenance
- 24/7 Operations



ALL RIGHTS RESERVED
PATENT
PENDING
ALL RIGHTS RESERVED



70% Cost Savings
(compared to conventional pumps)



2-5x Yield Increase
(v. rainfed Farming)

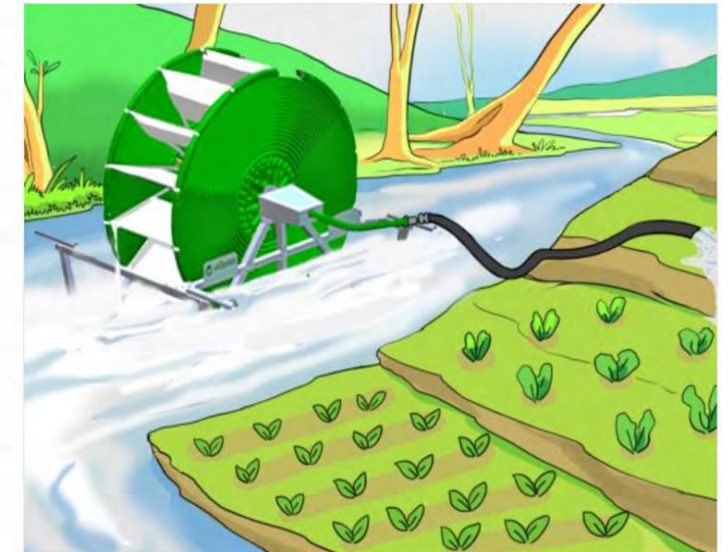


50 % Water Savings
(at no additional cost with drip)

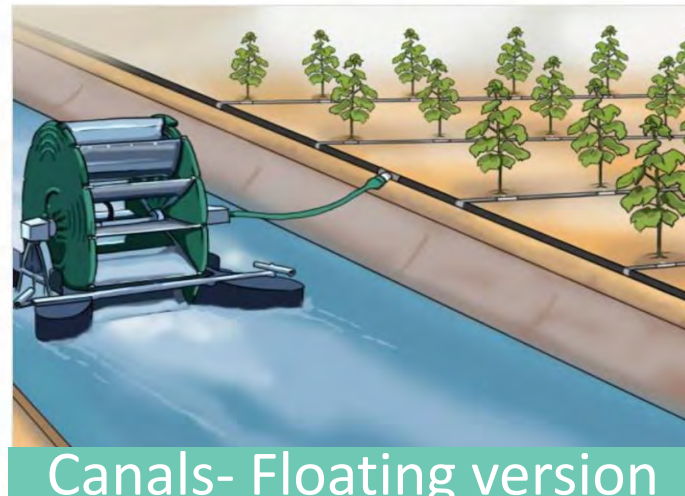
Product - Barsha Pump



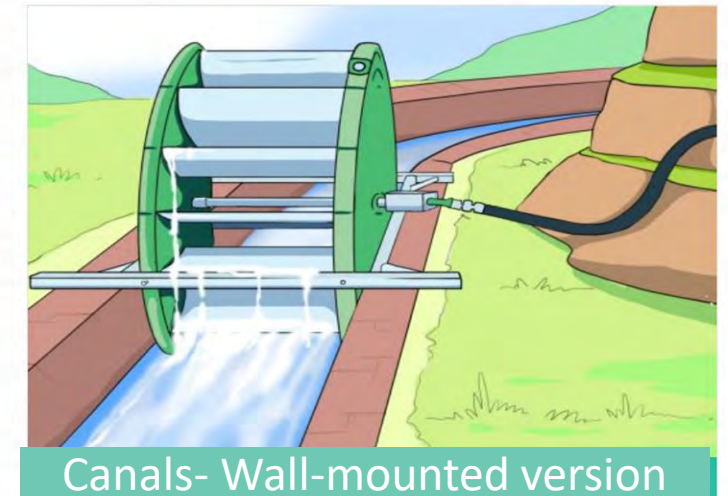
Rivers- Floating version



Rivers- Standing version



Canals- Floating version



Canals- Wall-mounted version



Global Traction



200

Hectares of land Irrigated



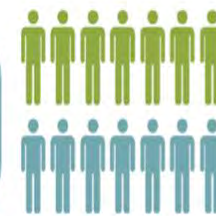
300

Millions Litres of Water Pumped



5000

Number of people Served



100

Tons of CO2 emissions Saved





The International aQysta Team – 30 Members, 8 Nationalities



Partners & Customers

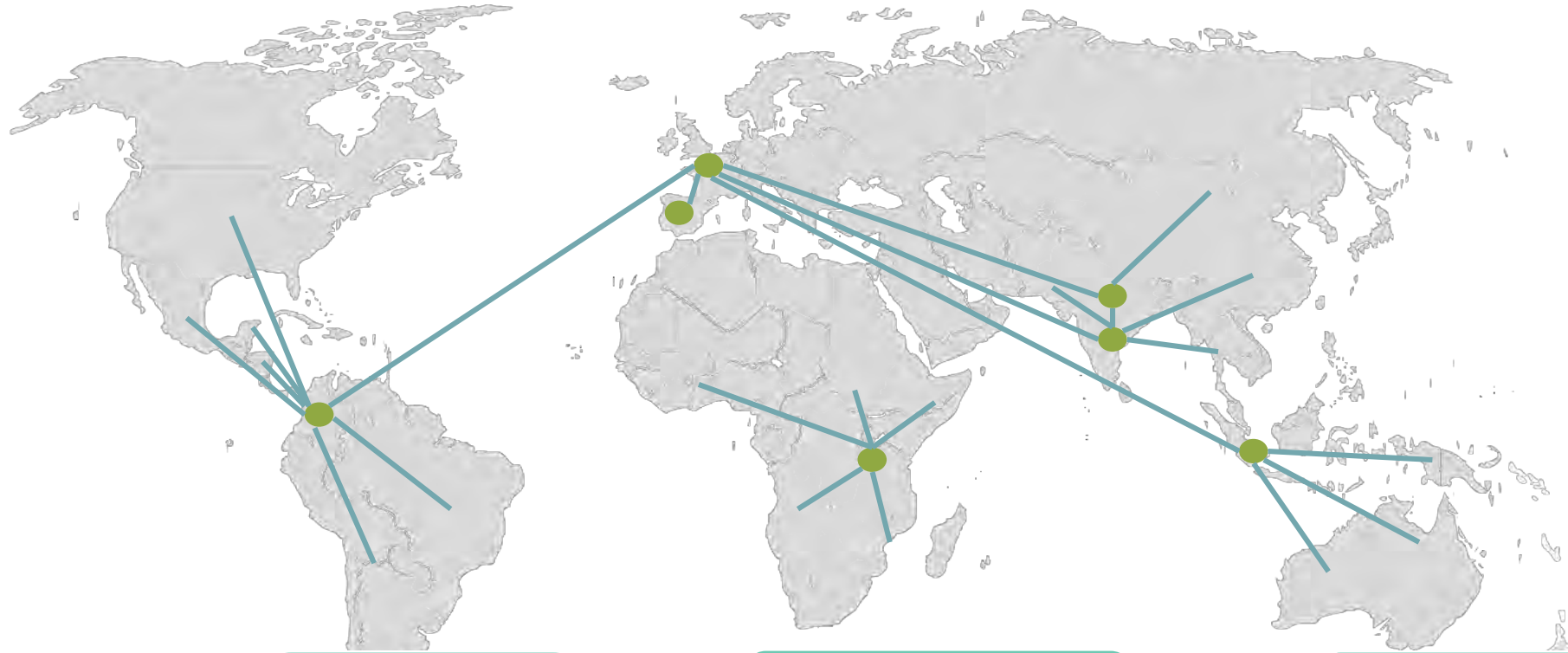


SIEMENS | Stiftung





Distribution - Hubs & Spokes Strategy



aQysta
Regional Hubs

Distributor

Distributor

Distributor

Farmers

NGOs

Government



From Barren to Green in 3 months





Example Case: Nepal



Arjun Karki
Ratmate, Sindhuli, Nepal
Sunkoshi River



Distance: 300 meters
Height: 14 meters



Flowrate: 0.4 l/s (35,000 liters per day)
Storage Tank+ Furrow Irrigation



Storage Pond: 15,000 litres



Crops: Vegetables, Maize, Paddy (Nursery)
Total Area Covered: 1 hectares



Also used for cattle farming



Example Case: Indonesia









Man in striped polo shirt and blue shorts.

Man in black polo shirt with "alulu enco" logo and black pants.

Green canopy of the motorized boat.

Man in grey t-shirt and dark pants.

Man in white t-shirt with a graphic and dark pants.

Black pontoons of the motorized boat.







After 3
Months!



Lessons Learnt, Insights
& Way-forward



Ability and Willingness to Pay

- Farming as a Profitable Business
- Irrigation – Public or Private Good?

Two Scaling Mechanisms

- Government Subsidy
- Financing Mechanism to spread up-front costs



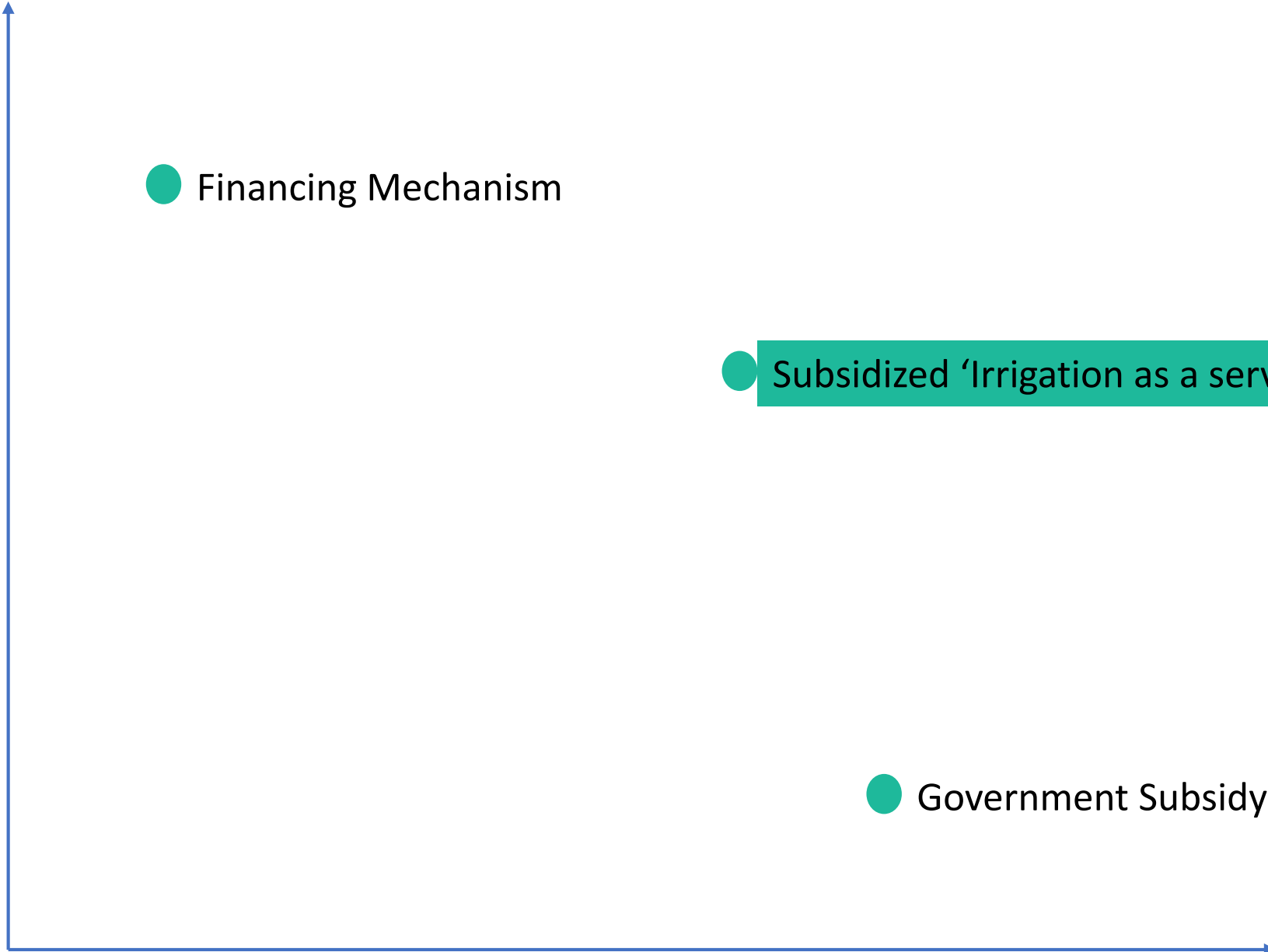
Impact

● Financing Mechanism

● Subsidized 'Irrigation as a service'?

● Government Subsidy (hardware)

Scale



Smallholder
agriculture
and Irrigation
demands are
both highly
variable



Water Source



Land Size



Type of Crop



Irrigation Method



Technology Roadmap

2016

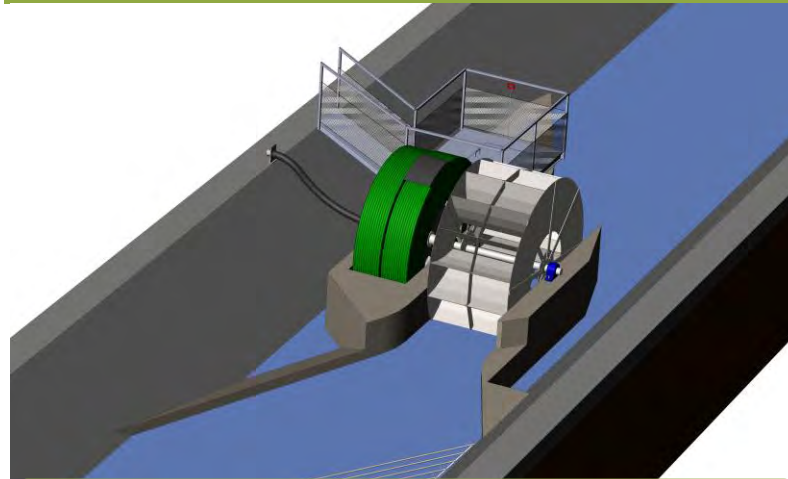
Barsha Pump



- Head: 20 meters
- Flowrate: 40,000 liters per day
- Land served: 2 hectares

2019

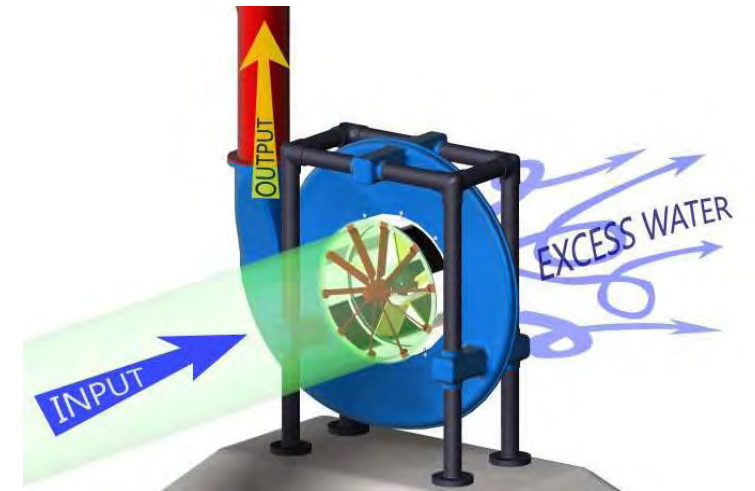
HyPump



10x
more powerful than Barsha pump

2020

Integrated Turbine Pump (ITP)



100x
more powerful than Barsha pump



Government Policy and Innovation



- Government is risk averse by nature, with bureaucracy involved in the decision-making process.
- 'wait and see' approach
- **Government support for trading, not innovating**



Innovation is an iterative process and takes time

- Needs patience from all stakeholders
 - Patient Capital

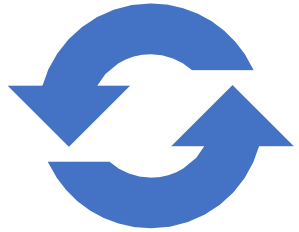
Concept Stage

Experimental Prototype

Demonstration Unit

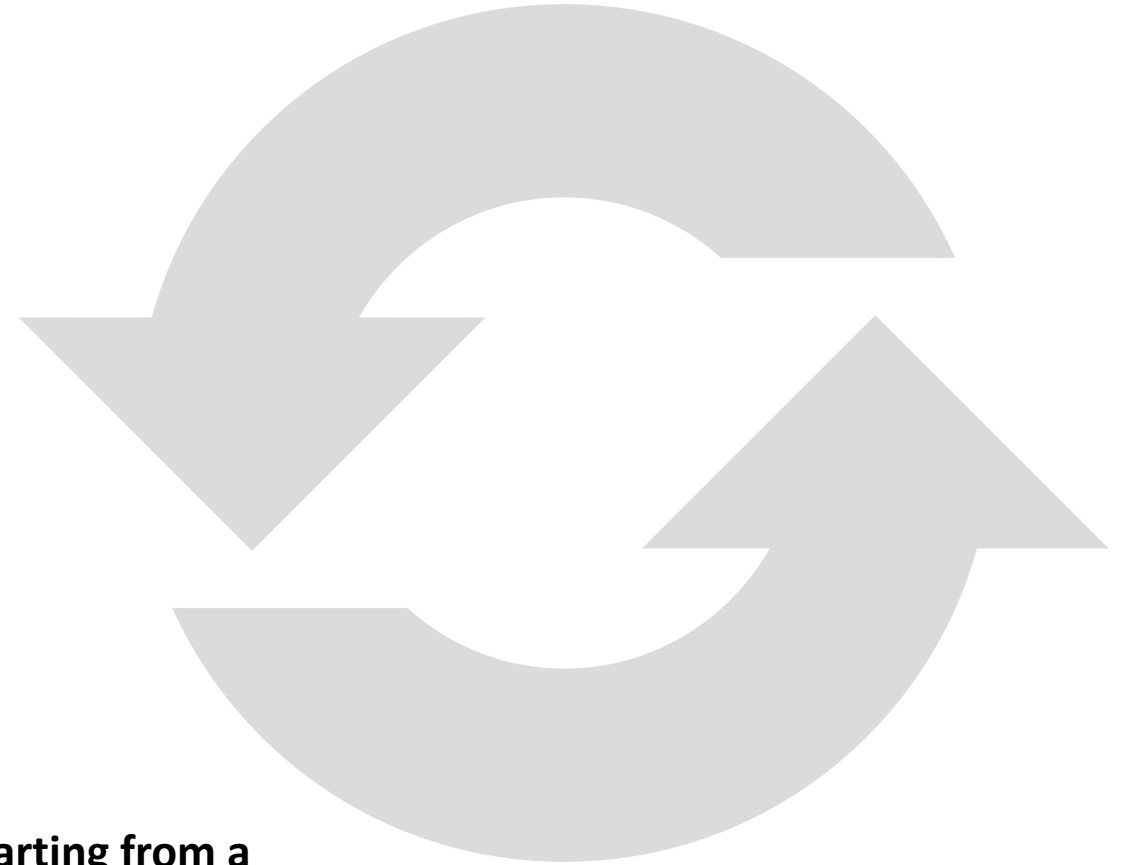
Commercial Product






Innovation Ecosystem Support

- **Bringing an innovation to the market, starting from a developing country is way more challenging**
- **Non-governmental organizations as early adopters of innovative technology**
- **Gap from demonstration to scaling**





Policy Level discussions for Water-powered pumps

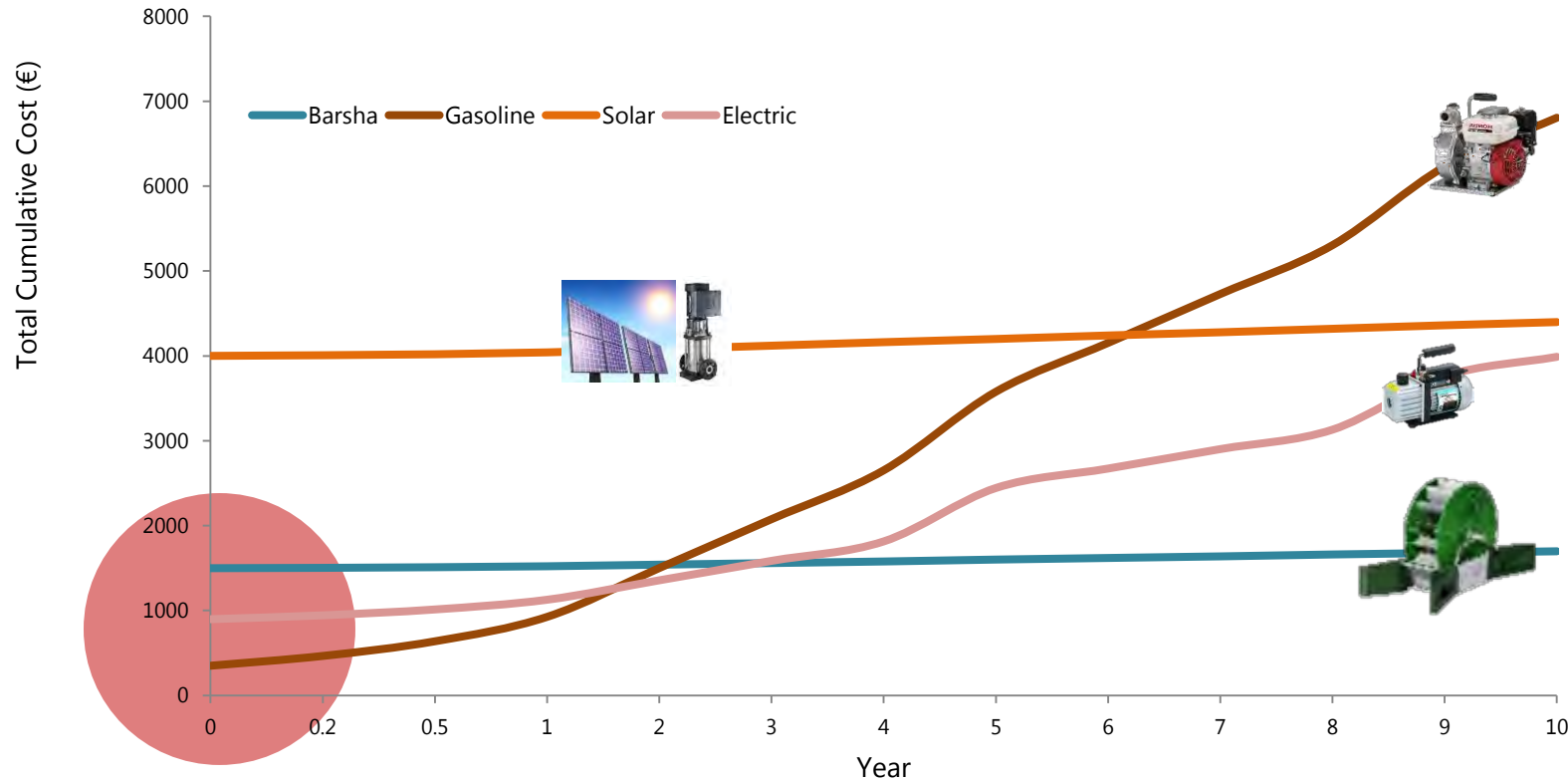
- Renewable Energy Solution beyond Solar
- Creating Rhetoric space for Water-powered pumps



Let us Irrigate better, together!



Competition Analysis



Barsha Pump

- Barsha Pump: €1,600
- 28 cubic meters per day to 15 meter

Diesel Pump

- Fuel Price/Liter: €1.16 (incl. transport)
- Price: €371
- Annual Fuel Cost: €557

Solar Pump

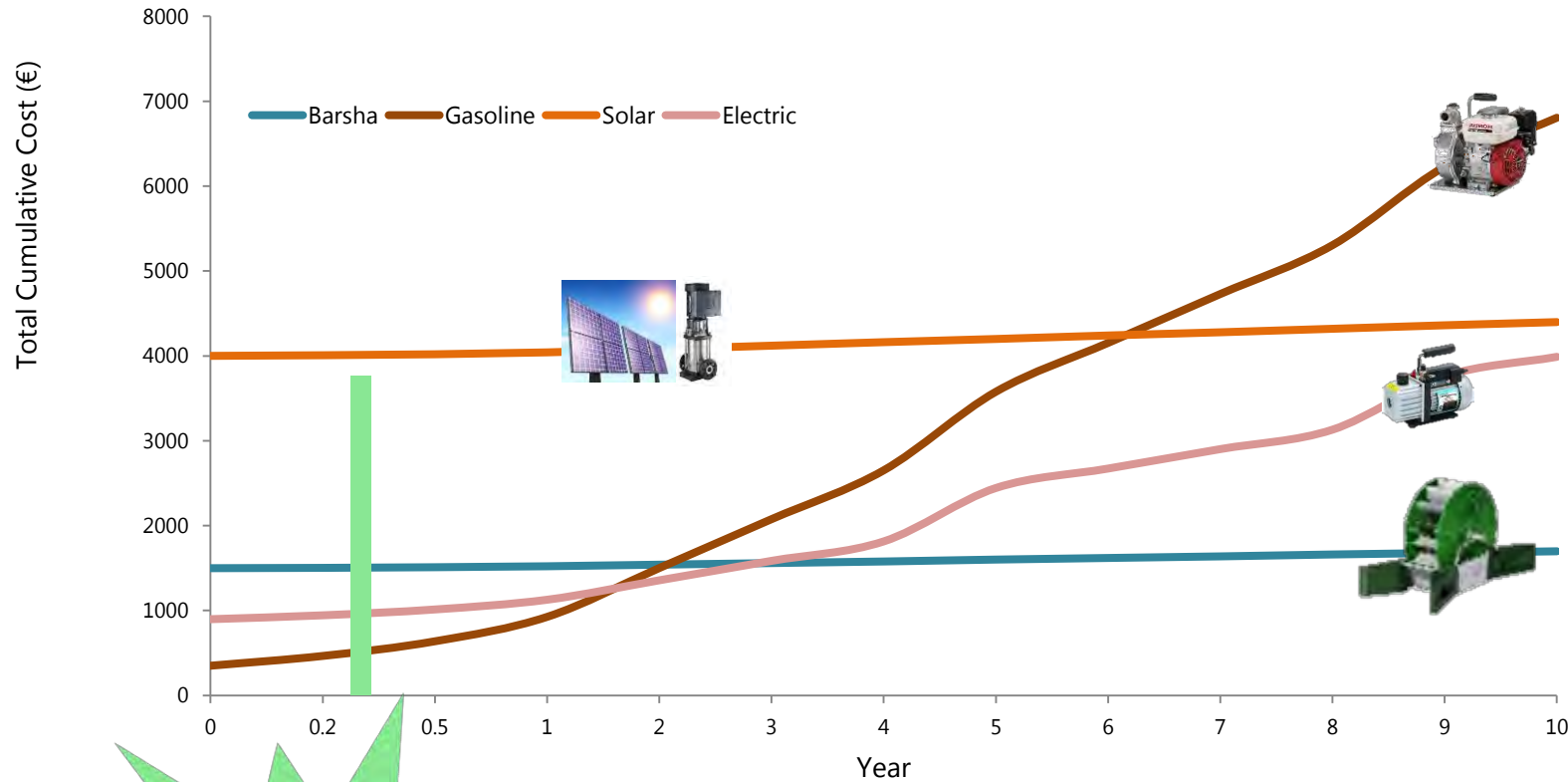
- €3,816
- €424 for Installation

Electric Pump

- €424
- Infrastructure: €530
- Electricity: €0.09/kWh
- Annual Electricity Cost: €200



Competition Analysis



Income from harvest in 3 months

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