

UNCHARTED WATERS

INNOVATIONS FOR SUSTAINABLE WATER USE IN AGRICULTURE

TEAM VILGRO AND HUF

Villgro's programs incubate social enterprises that potentially lie at the intersection of unique innovation, high impact and sustainable scale. They address the challenges of building a sustainable world in an equitable and inclusive manner.

The Hindustan Unilever Foundation (HUF) supports and amplifies scalable solutions to help address India's water challenges, specifically for rural communities that intersect with agriculture. HUF works with mission-based organisations, communities, technical experts, innovators and governments to find the most effective solutions.

WE NEVER KNOW THE
WORTH OF WATER TILL
THE WELL IS DRY

THOMAS FULLER

THE IMPENDING WATER CRISIS

3

By 2030, India will have only half the water we need if we continue to use it the way we do now.¹ Nearly 80% of the country's freshwater is consumed by agriculture, most of it very inefficiently.² In fact, we use almost two times the amount of water used by comparable countries to grow one unit of food.³ With most of India's rural households dependent on agriculture, millions of lives are at stake.

The complexities of the challenge have inhibited stakeholders from finding solutions on their own. While NGOs don't have access to the latest innovations, tech-savvy social entrepreneurs don't have access and reach to farmers and communities.



Water-intensive crops like rice, wheat, cotton and sugarcane are cultivated in large areas with inefficient usage of water.

4

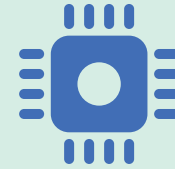
THINKING FRESH

In 2019, Villgro and the Hindustan Unilever Foundation (HUF) came together to help address this enormous problem. The collaboration launched

TECHNOLOGIES FOR COLLECTIVE GOOD IN AGRICULTURAL WATER USE,

a program to identify and support social entrepreneurs to solve India's agricultural water crisis. The goal was to enable collaboration between the most innovative and impactful startups and NGOs in the water sector. The dual objectives were to help the startups scale and to infuse an entrepreneurial, efficacy-built DNA in HUF's NGO water portfolio.

PROGRAM OBJECTIVES



Identify and scale technologies that lead to water savings in agriculture directly or indirectly



Facilitate partnerships between startups and NGOs



Drive technology adoption on large-scale field crops



Identify and promote enterprises run by women entrepreneurs

IDENTIFYING THE STARTUPS IN AGRICULTURE AND WATER

3500+

STARTUPS REVIEWED
BY VILGRO

31

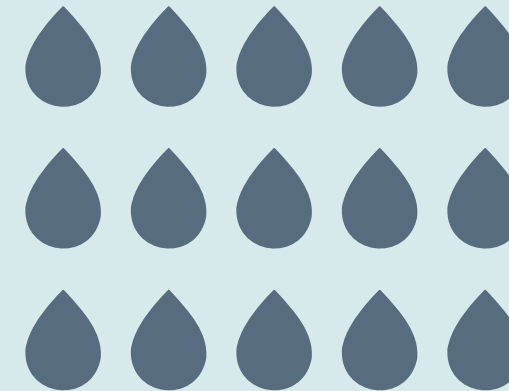
STARTUPS SHORTLISTED
AND INVITED FOR THE
PITCH

15

STARTUPS SELECTED
FOR DUE DILIGENCE

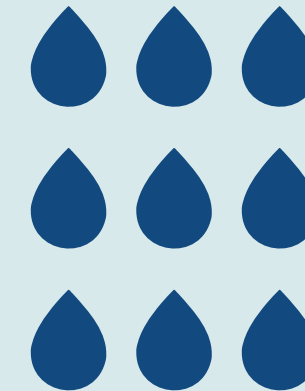
9

STARTUPS CHOSEN FOR
THE AG-WATER PROGRAM



The business models of these companies were evaluated by a jury on their impact potential and financial viability.

The information was further validated through physical field visits, stakeholder consultations and expert reviews.



The nine most impactful startups were chosen for the program after the due diligence analysis and a review by an investment committee.

NINE INSPIRING STARTUPS. THREE IMPACTFUL COHORTS.

The social entrepreneurs were divided into three groups based on the nature of their work.

THE TECH PIONEERS

Startups chosen for their novel technological solutions that lead to more efficient use of water in agriculture.

CULTYVATE

CULTYVATE

Smart irrigation and automation using Internet of Things (IoT) devices, crop models, low energy wireless communication and artificial intelligence



URDHVAM

A robotics-based borewell recharging technology that increases the water-yielding capacity of a borewell



OSCILLO

Low-cost farm mechanisation product that reduces water use in paddy cultivation



KRITSNAM

Data-driven water management solutions for ground and surface water that enable equitable distribution for agricultural, drinking and industrial purposes

THE MARKET CREATORS

Startups who strengthen the agricultural value chain by helping farmers access the market with their water-efficient crops. Women entrepreneurs are in focus in this cohort.



MYHARVEST FARMS (MHF)

Promotes climate-resilient agriculture by converting farmers to chemical-free farming, enables Direct-to-Consumer (D2C) market linkage



ONGANIC

Creates a B2B market for organic produce of indigenous rice varieties and spices



GREENSUPPLY

A one-stop solution for farmers, providing a full stack of agri-services from inputs to advisories

THE EARLY-STAGE INNOVATORS

Early-stage startups who need help to test their ideas. The program enabled this cohort to validate their solutions and tools on the field through a bootcamp model.



AANA CROP

Soilless mat-based paddy transplanting that has the potential to revolutionise rice growing by reducing water usage and increasing productivity



EKATVAM

Water accounting tools that enable participatory water management at the village level

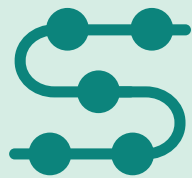
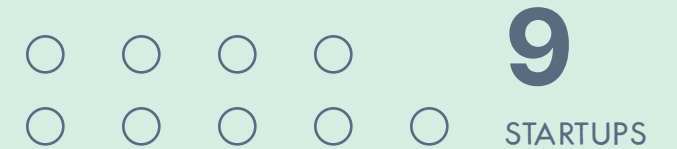
OUR COMPREHENSIVE TOOLKIT

An array of tools is used to help the startups achieve their goals and scale.



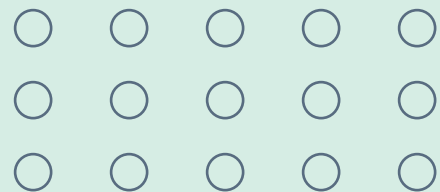
IMPACT MONITORING

Villgro supports the entrepreneurs by setting impact metrics and creating frameworks for building them.



DIAGNOSTIC PANELS

Experts evaluate the capabilities of the enterprises and help them translate their visions into execution-focused blocks of 100 days.

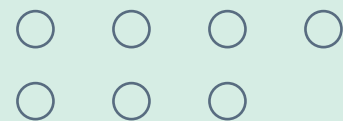


15
PANELS



TECHNICAL ASSISTANCE

Creates long-term value for the enterprises by helping them in specific areas where they lack expertise like product design, piloting or market research.

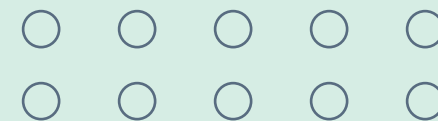


7
INITIATIVES



MENTORING

Subject matter experts provide the enterprises with valuable insights into brand-building, networking and negotiating



10
ENGAGEMENTS



FIELD TRIAL

HUF facilitates partnerships with grassroots organisations so that the enterprises can test and validate their technologies in the field and prepare to scale



3
TRIALS

MULTIDIMENSIONAL IMPACT

Over three years, the program identified, accelerated and scaled-up some of the prominent enterprises working in the agricultural water space today. It had considerable success across multiple dimensions.

1300 CR.

LITRES OF WATER MONITORED TO ENABLE DECISION-MAKING

160 CR.

LITRES OF WATER SAVED⁴

20 CR.

LITRES OF GROUNDWATER RECHARGED⁵



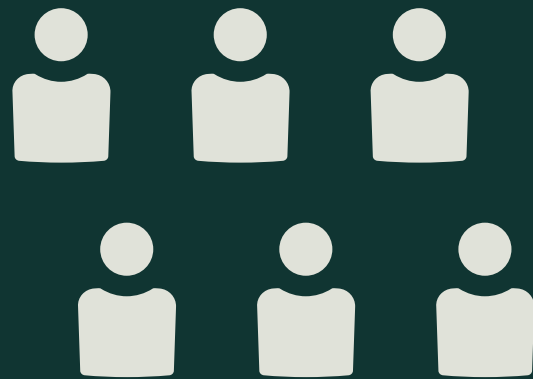
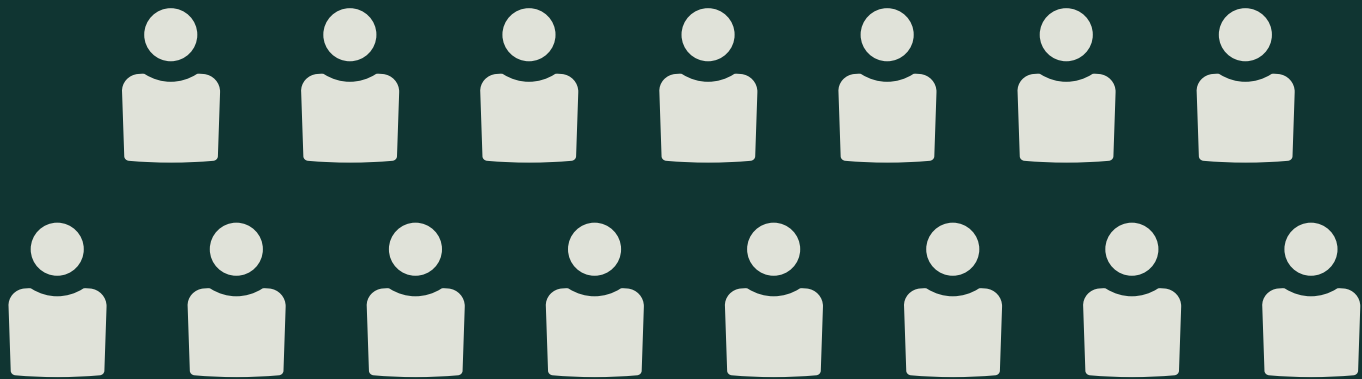
30 CR.

RUPEES WORTH OF FOLLOW-ON FUNDING RAISED BY THE STARTUPS



2,500

ACRES UNDER SUSTAINABLE CULTIVATION



21,000

LIVES TOUCHED

IMPACT BY GEOGRAPHY

The startups operated across the length and breadth of the country.



IMPACT BY SDGs

Villgro and HUF follow the universally accepted United Nations Sustainable Development Goals (SDGs) and the work of the startups who were part of the ag-water program aligned with many of these goals.



THE STARTUPS MAKING WAVES

CASE STUDIES

IRRIGATING SMART WITH CULTYVATE

PROBLEM

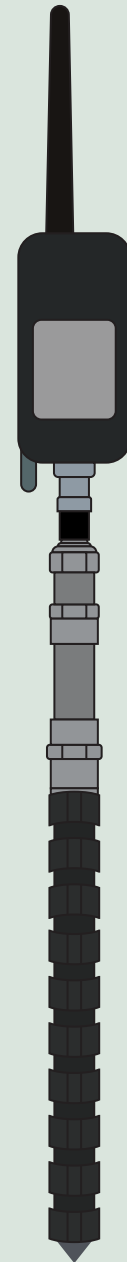
Small and medium-scale farmers don't have the tools to predict the precise amount of water required to irrigate their crops and end up using 50% more than needed. They also tend to over-fertilise their land and manage pests and diseases in unscientific ways. The result: up to 40% loss in yield and revenue, in addition to increased power consumption and excessive release of greenhouse gases.

SOLUTION

CultYvate's IoT-enabled cloud-based Smart Irrigation System provides precise irrigation and fertigation advisories based on the crop needs. A soil moisture sensor (fixed in the field) understands the water demand based on the type of the crop, its age, the soil texture and daily weather conditions.

The program helped CutYvate at all stages: from developing the product to distributing it through a partnership with the Centers for International Projects Trust (CIPT).

The sensor measures soil moisture levels and sends data every 30 minutes to cloud servers.



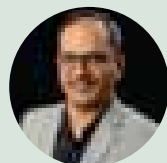
IMPACT

 **>600**
FARMERS REACHED

 **>1,200**
ACRES UNDER SUSTAINABLE CULTIVATION

 **>150^{CR.}**
LITRES OF WATER SAVED⁶

 POTENTIAL TO REDUCE EMISSIONS AND GENERATE CARBON CREDITS



MALLESH TM,
FOUNDER AND CEO,
CULTYVATE
<http://www.cultyvate.com/>

RECHARGING GROUNDWATER EFFORTLESSLY WITH URDHVAM



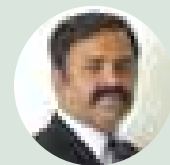
PROBLEM

India is the largest user of groundwater in the world with an estimated consumption of 230 cubic kilometres, over a quarter of the world's total. More than 60% of irrigated agriculture and 85% of drinking water supplies are dependent on groundwater.⁷ Today, an increasing number of aquifers are reaching unsustainable levels due to exploitation. While rainwater replenishes surface water, it is not sufficient to recharge deeper aquifers resulting in water shortages in borewells. According to a World Bank report, if the current trends continue, around 60% of India's aquifers will be in a critical condition in 20 years.



SOLUTION

Urdhvam's Bore Charger uses robotics and IoT to harvest rainwater from shallow aquifers and store them in deep confined aquifers. The unique patented process has the potential to revive existing, failed and low-yielding borewells. This highly sustainable recharge system is very easy to set up and doesn't require any construction, space, or surface water source. The solution increases the rainwater recharge of a borewell by 2 to 20 times and improves bore yield by up to 60 lakh litres. It also results in longer life for the borewells and better quality water.



RAHUL BAKARE,
CEO AND FOUNDER,
URDHVAM



VINIT PHADNIS,
CTO AND FOUNDER,
URDHVAM
<http://borecharger.com/>



FARMER IMPACT



RAJARAM BHOGIL,
DANDEGAON,
MAHARASHTRA

Land owned: **2 acres**

Average pump running time
before Bore Charger: **1 hour**

Average pump running time
after Bore Charger: **2 hours**

Estimated recharge through
Bore Charger: **1413 cu m**

Increase in income after Bore
Charger through other crops:
20 to 25%

IMPACT



>1,400

BOREWELLS RECHARGED



>20^{CR.}

LITRES OF WATER
RECHARGED⁸



>15,000

LIVES IMPROVED

LOW-COST FARM MECHANISATION WITH OSCILLO



PROBLEM

The number of agricultural workers in India is expected to drop by 25.7% by 2050⁹. Affordable mechanisation processes, especially for labour-intensive crops like paddy, have the potential to cover some of this shortfall.

Transplanting paddy seedlings plays a vital role in the paddy cultivation cycle. While mat-based transplanters are available in the market, the high price of the technique means that most small farmers can't afford to adopt this new method.



SOLUTION

Oscillo developed a semi-automatic transplanter for non-mat paddy transplanting. It reduces the farmers' labour costs and the drudgery involved in manual transplanting. It promotes efficient water usage and its ergonomic, light-weight design makes it easy for women farmers to use as well. To help small farmers further, Oscillo has also developed a range of affordable farm machinery that includes an electric weeder and an electric poultry racker.

The program helped Oscillo develop the product and test it on the field with on-ground support from the Foundation for Ecological Security (FES).



PRAJWAL M,
CEO AND FOUNDER,
OSCILLO



SHIVANAND SURESH,
CTO AND FOUNDER,
OSCILLO
<https://oscillomachines.com/>



IMPACT

 **>40**

FARMERS REACHED



ONE OF THE WINNERS OF
TECHTONIC - INNOVATIONS
IN AGRITECH

An initiative that supports innovative technologies for small and marginal farmers from the Bill & Melinda Gates Foundation and Social Alpha.

DATA-DRIVEN WATER MANAGEMENT WITH KRITSNAM

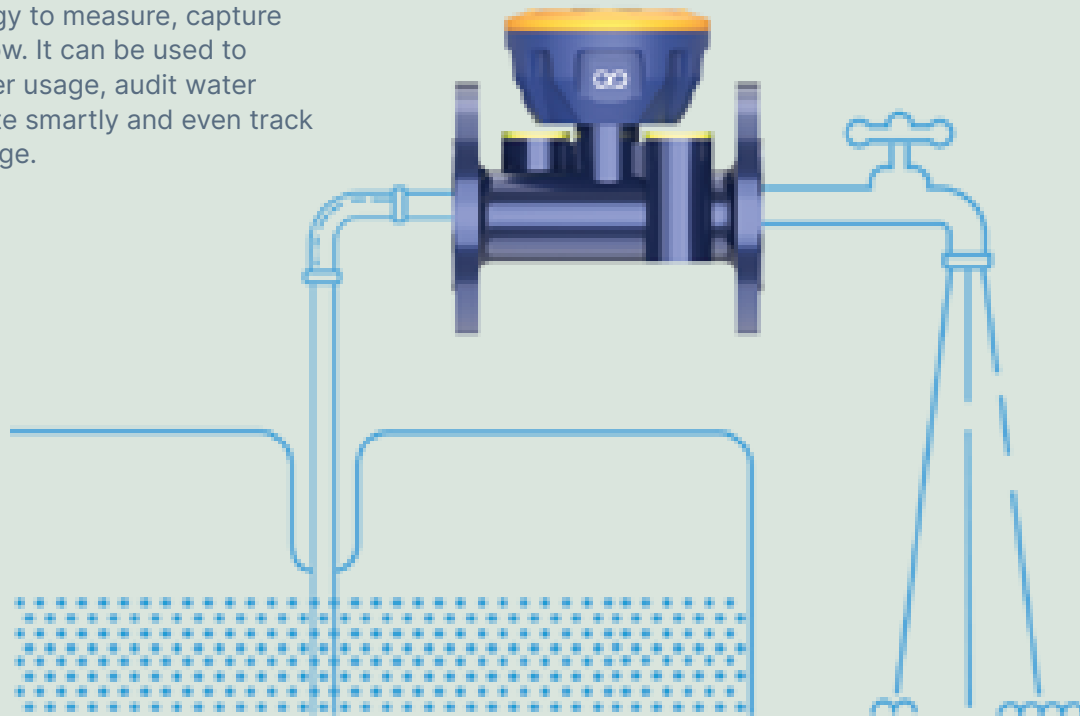


PROBLEM

Every year, India faces high water stress. With 80% of the freshwater used for agriculture, there is a pressing need for scientific water management. Mismanagement of water supply has resulted in water scarcity while the lack of scientific methods for water distribution in irrigation has led to poor crop outputs. The need of the hour is for technologies that can help with the day-to-day decision-making on water supplies.

SOLUTION

Kritsnam empowers customers with water intelligence. The company's decision-making systems for water management are developed using a combination of ground IoT sensors, remote sensing, user inputs and crowdsourcing data. Dhaara Smart, Kritsnam's battery-powered flow metre, uses ultrasonic technology to measure, capture and report water flow. It can be used to monitor groundwater usage, audit water consumption, irrigate smartly and even track domestic water usage.



GOVERNMENT IMPACT

- Kritsnam is working with the Karnataka Government's Advanced Centre for Integrated Water Resources Management (ACIWRM) on a project to develop a robust and reliable water distribution mechanism based on crop types, growth stages and meteorological parameters. The goal is to ensure that the right amount of water is provisioned at the right time for the optimum growth of crops.

- Kritsnam played a major role in assisting the Central Water Commission (CWC) monitor the water level status during the 2021 Ganga floods, using their radar-based flood-water monitoring technology.

- Kritsnam is also working with the Administrative Staff College of India and the Hyderabad Municipal Water Supply and Sewerage Board. The team surveyed 102 sites to build a robust and reliable solution for effective consumer water metering.

IMPACT

 **>1300^{CR.}**
LITRES OF WATER MONITORED

 **>15^{CR.}**
OF FOLLOW-ON FUNDS RAISED

MOU

WITH TECHNOLOGY DEVELOPMENT BOARD FOR PRODUCTION AND COMMERCIALISATION OF DHAARA



K. SRI HARSHA,
FOUNDER,
KRITSNAM



VINAY CHATARAJU,
CO-FOUNDER,
KRITSNAM
<https://kritsnam.com/>

CHEMICAL-FREE FARMING WITH myHARVEST FARMS



PROBLEM

Farmers are constantly worried about their erratic income. They are forced to use more and more pesticides and fertilisers to maintain their harvest levels and this adds more strain on their budget and the degradation of land. Worse, the harmful chemicals in the pesticides and fertilisers adversely affect their consumers.

SOLUTION

myHarvest Farms (MHF) ensures a steady source of income for natural farmers by linking them to the market. As a direct-to-consumer company, MHF is able to offer its consumers chemical-free, fresh produce of the highest quality. The enterprise supports the farmers with SOPs for natural farming and helps them grade and pack their produce. MHF also promotes farming practices that save water and improve soil health and farm productivity.

The program helped MHF improve their supply chain and operational efficiencies through digitisation.

IMPACT



>90

FARMERS REACHED



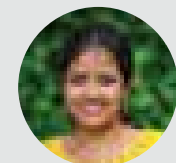
>180

ACRES UNDER SUSTAINABLE CULTIVATION



>10^{CR.}

LITRES OF WATER SAVED¹⁰



ARCHANA STALIN,
FOUNDER,
myHARVEST FARMS



STALIN KALIDOSS,
CEO & FOUNDER,
myHARVEST FARMS
<https://myharvestfarms.com/>



FARMER IMPACT



RAMESH,
THIRUVALLUR

Before natural farming with MHF

- Grew limited varieties of crops
- Spent almost 60% of total expenses in a season on pesticides and controlling pest attacks
- Suffered from ill health due to the chemicals in the pesticides
- Sold to local sellers and got meagre margins

After natural farming with MHF (since 2020)

- Does multicrop farming and follows sustainable practises
- Gets advice on sowing, fertigation and pest management
- Reduced water usage by 25% to 30%
- Increased profits with fair prices and low pesticide costs
- A role model for young farmers who want to take up natural farming



SELECTED FOR ACCELERATORS

- WRI's Land Accelerator 2022
- Acumen's - India Climate Resilient Agriculture Accelerator 2021



STARTUP OF THE YEAR

Agritech category at the Meity Nasscom Women Entrepreneur Awards 2020-21

GOING ORGANIC WITH ONganic

PROBLEM

Nearly half of the Indian farmers don't want the next generation to follow in their footsteps as the income tends to be low and the costs high.¹¹ The lack of formal education in agricultural best practices and in organic farming means that the farmers are also missing out on opportunities for growth and expansion.

SOLUTION

ONganic enables farmers to adopt organic agricultural practices that are cost-effective and climate-resilient. The enterprise has developed a B2B market linkage model for organic farmers that fetches better prices for their produce and increases their income. ONganic focuses on specialty rain-fed rice varieties that are indigenous to East India and command a premium in the market.

The program helped ONganic with building supply chain efficiencies, sales strategies and marketing.



EKTA JAJU,
CEO AND FOUNDER,
ONganic FOODS
<http://onganic.in/>



IMPACT



500

FARMERS REACHED DIRECTLY



>5000

FARMERS REACHED THROUGH FPOs



>1,000

ACRES UNDER SUSTAINABLE CULTIVATION



PROMOTION OF SUSTAINABLE FARMING PRACTICES



SELECTED TO PARTNER WITH WOMEN ON WINGS

FULL STACK AGRI SERVICES UNDER ONE ROOF WITH GREENSUPPLY



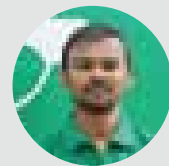
PROBLEM

90% of the farmers in Bihar are small and marginal.¹² They have to deal with multiple people to go from seed to market and are dependent on middlemen to sell their produce. Due to the low levels of digital literacy, most farmers are unable to access quality services through mobile applications.

SOLUTION

GreenSupply offers a full stack agri service for farmers under one roof at their villages in Bihar. The supply-chain infrastructure helps farmers increase their income through all-encompassing solutions that cover everything from technologies and machineries to advisories and market linkages.

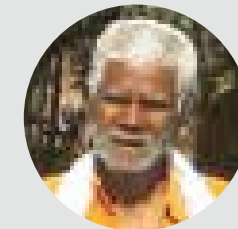
The program helped GreenSupply with Impact measurement and monitoring.



RAJESH KUMAR,
CEO AND FOUNDER,
GREENSUPPLY
<https://greensupply.co.in/>



FARMER IMPACT



SURESH VERMA,
LAL BHASARA,
PATNA DISTRICT

- Used to go to the local mandi 8km away to sell his seasonal vegetables and had to pay a commission of 6% to the mandi agent.
- Joined GreenSupply Suvida Kendra after it opened in his village. Saved on logistics cost and did not have to pay commission to an agent anymore.
- Now spends more time farming and also gets advice from the Suvida Kendra on when and what to grow to get the best prices in all seasons.

IMPACT

>1,300
FARMERS REACHED

>130
JOBS CREATED THROUGH SUVIDA KENDRAS AND SUPPLY CHAIN OPERATIONS

SOILLESS PADDY TRANSPLANTING WITH AANA



PROBLEM

Paddy transplanting is a labour-intensive process and involves a lot of drudgery. The paddy farmers face an acute labour shortage. They also resist mechanisation as they are not able to procure quality paddy seedlings that are required for the process.

SOLUTION

After three years of extensive research, Aana Crop Solutions developed BAMINI Technology, a soilless medium on which quality paddy seedlings can be grown. This superior paddy nursery mat is ideal for mechanical transplantation and also suitable for the South Indian wetland conditions.

The program assisted Aana with customer acquisition strategies and streamlining their business operations.



IMPACT



>150

ACRES OF PADDY
SUSTAINABLY MANAGED



>60

FARMERS REACHED



JAYANIVAS V,
CEO AND FOUNDER,
AANA CROPS

<https://aanacropsolutions.com/>



TRACKING WATER USAGE WITH EKATVAM



PROBLEM

Due to the extraction of unregulated groundwater and the lack of participatory water resource management, India is heading towards a severe water crisis. Over 10,000 Indian villages are at risk of groundwater overexploitation and the lives of millions of farmers are likely to be affected.¹³ Decision-makers are at a disadvantage as there is no accurate data available to evaluate water risk at village levels.

SOLUTION

Ekatvam aims to equip village communities with digital and non-digital tools that provide visibility on the water condition in their villages and also simulate multiple corrective scenarios. The enterprise targets B2B and B2G markets, with potential customers in initiatives led by NGOs, CSRs and the government.

The program helped Ekatvam develop its products and business models. It also facilitated a partnership with BAIF Institute for Sustainable Livelihoods and Development (BAIF Livelihoods) for the enterprise to pilot their solution in Maharashtra.



RISHABH RAVICHANDRAN,
FOUNDER,
EKATVAM



PIYUSH BHANDARKAR,
FOUNDER,
EKATVAM

<https://ekatvaminnovations.com/>



Midas is a multi-stakeholder water accounting tool that helps farmers and decision-makers identify and evaluate water risks in their village through a mobile application.



THE MIDAS TOUCH

Ekatvam implemented the MIDAS tool in 10 villages of Talaja and Rajula blocks of Gujarat. It helped the Coastal Salinity Prevention Cell (CSPC) track water usage and prioritise supply-demand side interventions.

IMPACT



86

VILLAGES EMPOWERED
WITH PARTICIPATORY WATER
MANAGEMENT TOOLS



>250

FARMERS REACHED WITH
THE MIDAS APPLICATION



SELECTED FOR

- World Research Institute's Land Accelerator program
- Imagine H2O Asia Cohort 4 program

DILIP ZALA,
CLUSTER COORDINATOR,
TALAJA BLOCK, CSPC,
GUJARAT

"The MIDAS tool provides valuable insights into water availability and usage in our region, which is critical for our efforts to promote sustainable agriculture. The user interface is well-designed and easy to navigate, which is important for our field staff who may not have a technical background. The ability to generate reports and export data is also helpful for our data analysis and reporting needs."

AI FOR AGRICULTURE

A PILOT PROGRAM FOR FINDING SUSTAINABLE SOLUTIONS

Villgro, Google and HUF joined hands to create AI for Agriculture, a 6-month pilot accelerator that developed and deployed solutions to tackle water sustainability using Google's AI and ML tools. These were then tested in the field. The program brought together experts, NGOs and farmers with four agriculture startups: CultYvate, Satyukt, Neoperk and Atsuya.

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CULTYVATE

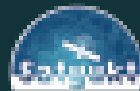
SMART DATA MODEL WITH CULTYVATE

THE PLAN

The pilot proposed to provide irrigation advice to paddy farmers by building a model that used data from ground sensors and crop information from satellites.

THE EXECUTION

The project was implemented with ICAR-Indian Institute of Rice Research (ICAR-IIRR) as pilot partners on a controlled plot of one acre at the ICAR-IIRR campus and with 30 farmers covering 30 acres in Kampasagar in Telangana during the Rabi season.



APP-BASED IRRIGATION WITH SATYUKT

THE PLAN

The goal of the pilot was to reduce irrigation cycles using Sat2Farm, a satellite-based smartphone application that provided irrigation advice to farmers with the help of satellite data, weather forecasts and crop information.

THE EXECUTION

Satyukt partnered with the non-profit PRADAN and implemented the pilot in Bhankura, West Bengal. Over 500 farmers participated in the program with mustard, wheat and potato being the crops in focus.

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INTELLIGENT INSIGHTS WITH ATSUYA

THE PLAN

The pilot aimed to deploy Atsuya's AONE™ solution to give farmers comprehensive knowledge regarding their farm and the condition of their crops - from the quality of water, soil and air to the quantity of energy consumed.

THE EXECUTION

Sensors were deployed in a one-acre Banana farm in Namakkal, Tamil Nadu to analyze water quality and soil health. Drone scouting covered another 12.6 acres and studied topography and surface elevation, crop health, vegetation stress and bio-nutrient needs.

LET'S REIMAGINE AGRICULTURE TOGETHER

41

The ag-water program gave us an opportunity to work with some of the finest innovative and impactful startups in the field. Despite the complexities involved, our multi-stakeholder approach helped us make a considerable impact on the society and the environment. Indeed, no challenge is too big when all of us come together.

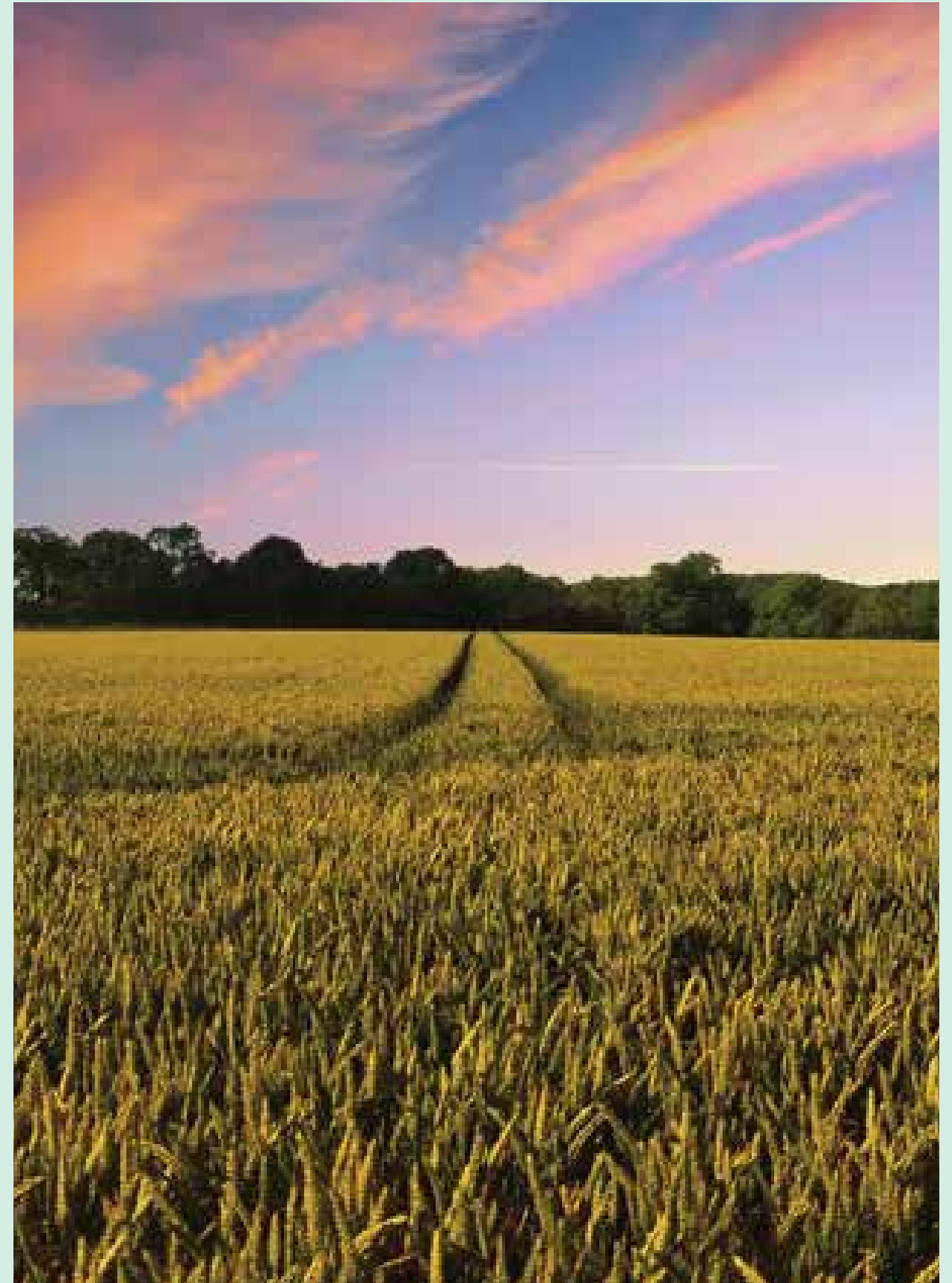
This program is just our first step in uncharted territories and we are keen to engage with you much more in working towards

| **Reducing Pressure on Land and Water Systems**

| **Making Smallholder Farmers Climate-resilient.**

Do join us in our efforts to create a more sustainable planet.

TEAM VILGRO



42

SOURCES & DISCLAIMERS

1. 2030 Water Resources Group (WRG)
2. Observer Research Foundation
3. <https://www.indiabudget.gov.in/budget2016-2017/es2015-16/echapvol1-04.pdf>
4. Out of the 160+ Cr Lts of water saved, 68 Cr Lts of water saved is assured by 3rd party verification. For 92+ Cr Lts of water saved, the data collection mode was based on startups' self-reporting on the frameworks that Villgro's M&E and Portfolio Management team shared. The same ensured efficiency and standardization in data collection efforts.
5. Out of the 20+ Cr Lts of water recharged, 11.4 Cr Lts of water recharged assured by 3rd party verification. For 8.6+ Cr Lts of water saved, the data collection mode was based on startups' self-reporting on the frameworks that Villgro's M&E and Portfolio Management team shared. The same ensured efficiency and standardization in data collection efforts.
6. Out of the 150+ Cr Lts of water saved, 54 Cr Lts of water saved is assured by 3rd party verification. For 96+ Cr Lts of water saved, the data collection mode was based on startups' self-reporting on the frameworks that Villgro's M&E and Portfolio Management team shared. The same ensured efficiency and standardization in data collection efforts.
7. The World Bank
8. Out of the 20+ Cr Lts of water recharged, 11.4 Cr Lts of water recharged is assured by 3rd party verification. For 8.6+ Cr Lts of water saved, the data collection mode was based on startups' self-reporting on the frameworks that Villgro's M&E and Portfolio Management team shared. The same ensured efficiency and standardization in data collection efforts.
9. Business Insider
10. The water saved number is assured by a 3rd party verification.
11. Gaon Connection
12. The Wire
13. Central Ground Water Board (CGWB)

The mode of data collection for the startup impact metrics was based on self-reporting by startups on the frameworks shared by Villgro's M&E and the portfolio management team. The same ensured efficiency and standardization in data collection efforts.

The views expressed herein are those of Villgro. They cannot be taken to be the official opinion of Hindustan Unilever Foundation in any way.

Get in touch with us at
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to join us in our efforts to create
a more sustainable planet.