



DROPS OF GOLD:

WATER MANAGEMENT AND AGRICULTURAL
INTERVENTIONS IN RAJSAMAND, RAJASTHAN

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Rural Livelihoods, Seva Mandir

SBI Youth for India, November '20-'21



Presentation Highlights



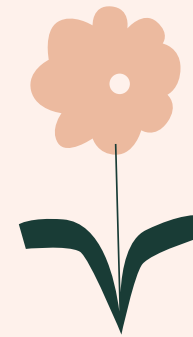
The Context

Rajsamand & its people



The Problem

*Needed improvements
in agriculture and
water management*



The Project

*Achievements so far &
current status*



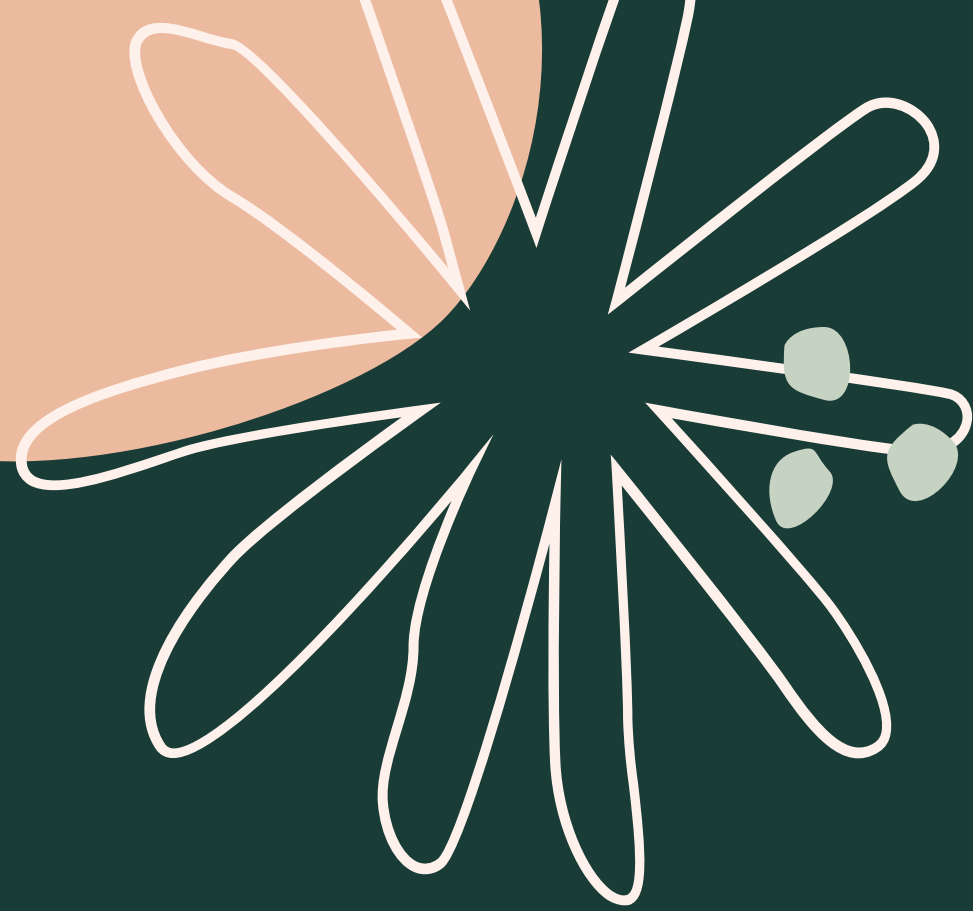
The Challenges

*Setbacks due to
COVID-19 and caste
dynamics*



The Path Forward

*Monthly plan &
sustainability*



Executive Summary

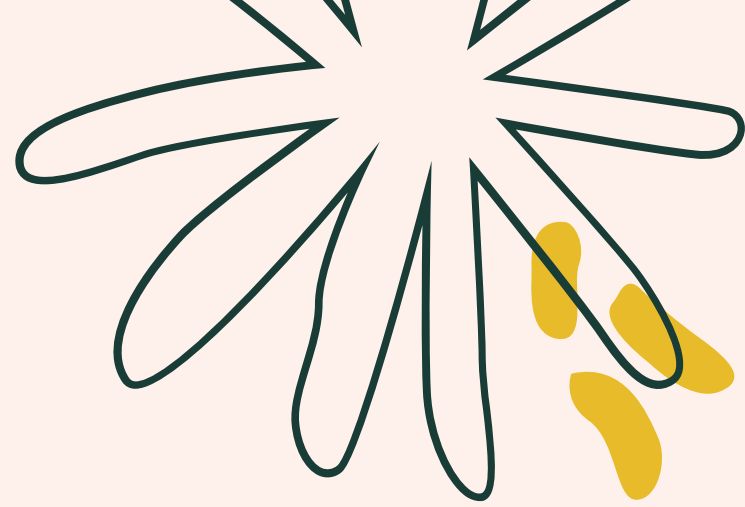
My multi-pronged project focuses on the holistic development of farmers in this water-scarce region by:

1. Promoting village-level water management by repairing and maintaining water harvesting structures, creating public awareness around usage, and documenting indigenous knowledge
2. Boosting the income of farmers by introducing water-efficient agriculture, scaling up interventions through value-addition, and creating more profitable market linkages

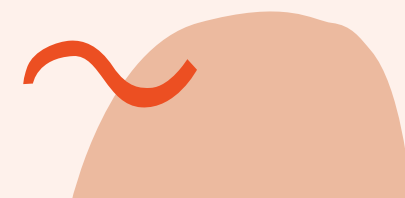
Metrics of success are increased income and increased awareness.



Palle 2021



THE CONTEXT



THE REGION

Rajsamand is famous for marble mining and is a primary supplier for marble throughout India and the world. This has led to significant groundwater extraction for the marble cleaning and cutting process. In addition, marble waste is dumped back into the water, resulting in pollution of drinking water sources and agricultural lands. While toxic, the marble industry is also the primary source of formal employment in the region.

THE FARMERS

Farmers here have historically grown wheat and corn, which are commodities with low prices. In the recent years, Seva Mandir has been introducing floriculture and horticulture, namely marigolds and broccoli, in an effort to boost income.

THE APPROACH

Seva Mandir's projects to enhance livelihoods of farmers are women-centric and focus on three components: jal (water), jungle (community forests and pasturelands), and jameen (the land and farms themselves).

Rajsamand & Its People



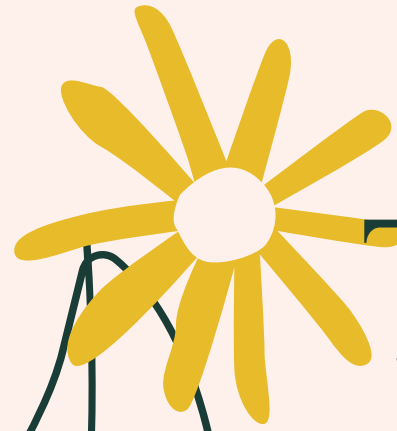
Parsuram Paliwal, Water Warrior
Parsuram Paliwal ji, an elderly resident from Parwat Kheri, points to a local lake that has completely dried up in his lifetime.



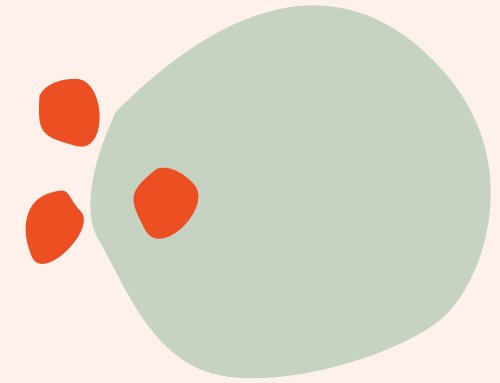
The Villagers of Parwat Kheri
Villagers in Parwat Kheri discuss how an increasing amount of marble mines has blocked water tunnels and aquifers that recharge local water sources.



The Women of Dhanji Ka Khera
Women from Dhaji Ka Khera talk about how agriculture has become impossible in their village due to severe water scarcity.



THE PROBLEM



Needed improvements in agriculture & water management

Jameen (The farms): Markets for produce

The produce grown by local farmers (marigolds and broccoli) are not fetching good prices in the local markets so farmers have stated they need help accessing more lucrative markets.

Due to the region's water scarcity, there is also a need for water-efficient, yet profitable agricultural interventions.

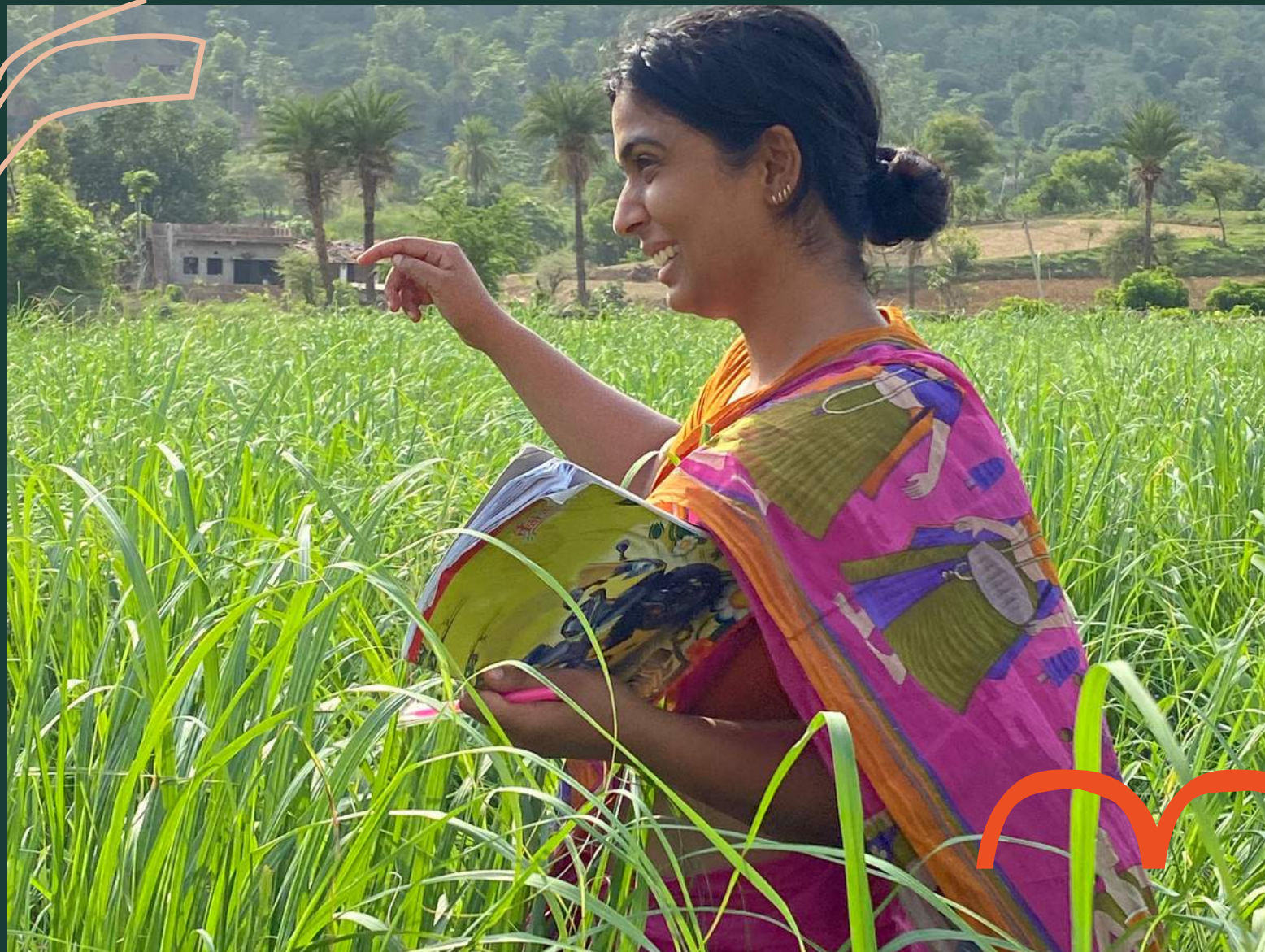
Jal (Water): Groundwater extraction and water scarcity

Groundwater is being extracted at alarming rates and, because of abandonment of traditional water conservation systems, is not being recharged during monsoon season. This has been affecting all water bodies, and by extension, livelihoods.

In addition, water pollution from the marble industry is adding onto water scarcity in the region, leading to lack of clean water.

THE PROJECT

Holistic development of farmers in a water-scarce region



Construct what we need

Repair water structures to more effectively harvest rainfall and recharge community's water sources

Conserve what we have

Improve local agricultural practices to use less water and more efficiently irrigate farmlands

Raise awareness in community to manage water in households

Change what we grow

Introduce water-efficient crops to revitalize farming in the area and improve livelihoods

Chronicle everything

Document indigenous technical knowledge of water management

Milestones Thus Far

Construct what we need (completed)

- 1.4 lakes in 4 villages desilted and deepened for rainfall harvesting

Conserve what we have (completed)

- 1. 30 farmers who have signed up for Aroma Mission (next slide) will take part in water-efficient techniques, such as using Jeevamrit (which reduces the amount of needed irrigation long-term) and water-efficient irrigation systems
- 2. Ongoing meetings with farmers to promote improved irrigation systems
- 3. 40 billboards across ~10 villages to raise awareness on water conservation



Milestones Thus Far (Cont'd.)

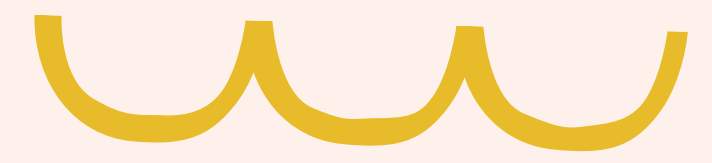
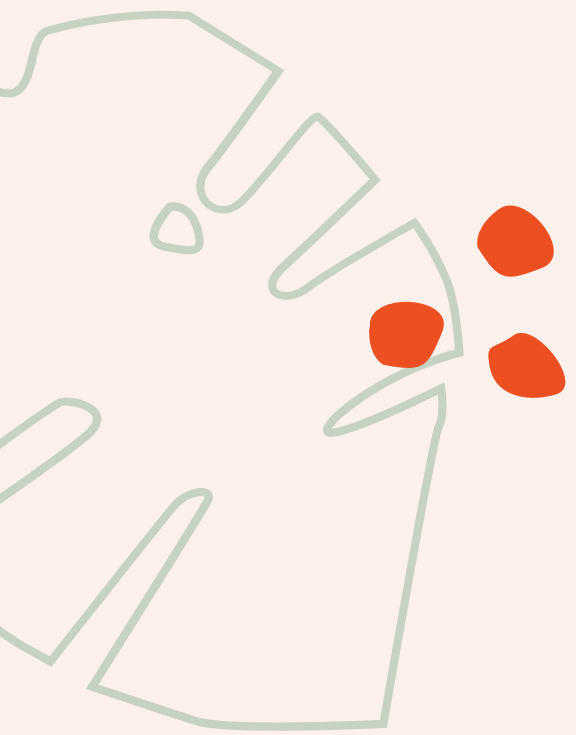


Change what we grow (ongoing)

1. Have 30 farmers signed up to join the Aroma Mission, a government scheme to encourage harvesting highly profitable medicinal and aromatic plants
2. Gathered the funds to construct distillation plants, where farmers can extract oils from new Aroma Mission crops and existing Seva Mandir marigold interventions
 - a. This oil will be collected by Mumbai- and Udaipur-based companies for an extremely high profit

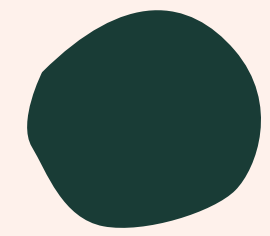
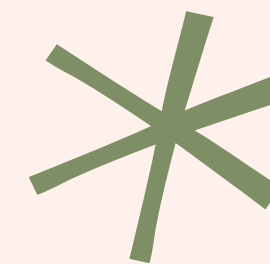
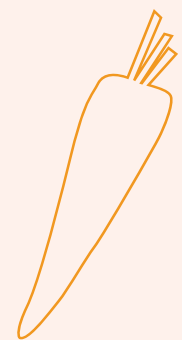
Chronicle everything (ongoing)

1. Began interviewing knowledgeable elders on history of water in their villages



Current Project Status

On track, with full steam ahead



Increasing number of farmers eager to sign up for Aroma Mission under the Seva Mandir banner

Distillation unit will add synergy to existing Seva Mandir interventions

Most project work on water management is completed, with remaining scheduled for 2022

15-crore-INR grant to incorporate my project for the next five years

Community, Seva Mandir, and CIMAP are all excited and have started brainstorming their own ways to scale project



THE CHALLENGES

Setbacks due to COVID-19 and caste dynamics

COVID lockdown in May set back construction work on water structures

1. Donor diverted funds from water management to COVID-relief
 - a. By the time new funds were secured, monsoon season started, meaning we did not hit our goal of water structure constructions.
 - i. The remaining structures (ponds in individual farms and repair on local Gomti Nadi) will be completed next year.
2. Construction halted due to curfew laws

Caste division of farmers continues to pose challenges in setting up a collective value-chain system

1. Enrolling ST and SC farmers in agricultural interventions remains a challenge due to lower time investment available to these groups and fragmented landholding
2. Setting up a distillation unit on common land for all farmers in the program will require continuous monitoring due to local untouchability politics



THE PATH FORWARD

My fellowship & beyond

Next Steps (next 3 months)

1. Training from CIMAP & planting of lemongrass: August 18 - 22
2. Distillation unit to be constructed: end of September
3. Interviews from village elders on history of water management (ITK)

Short-Term Goals (next 1 year)

1. First harvest of lemongrass in ~December, which is expected to significantly increase the income of participating farmers
2. Women-run distillation unit to extract oil from crops and provide employment to local women
3. ITK to be stored in Seva Mandir database

Long-Term Goals (next 5 years)

1. Participation scales up to a few hundred farmers and crops grown will expand from marigold and lemongrass to include rose, chamomile, turmeric, etc. in the next 5 years
2. Women-run unit will expand to include multiple products, including extract and tea
3. ITK to be used to further guide water management

Monthly Plan

August

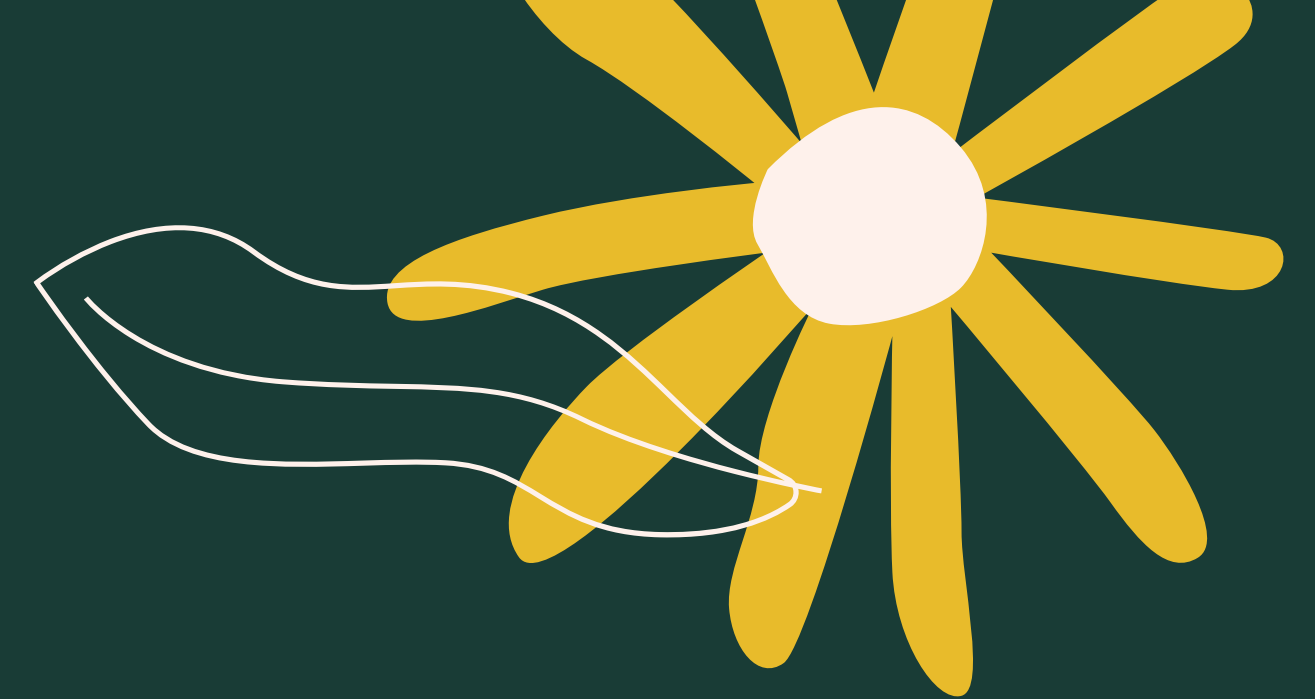
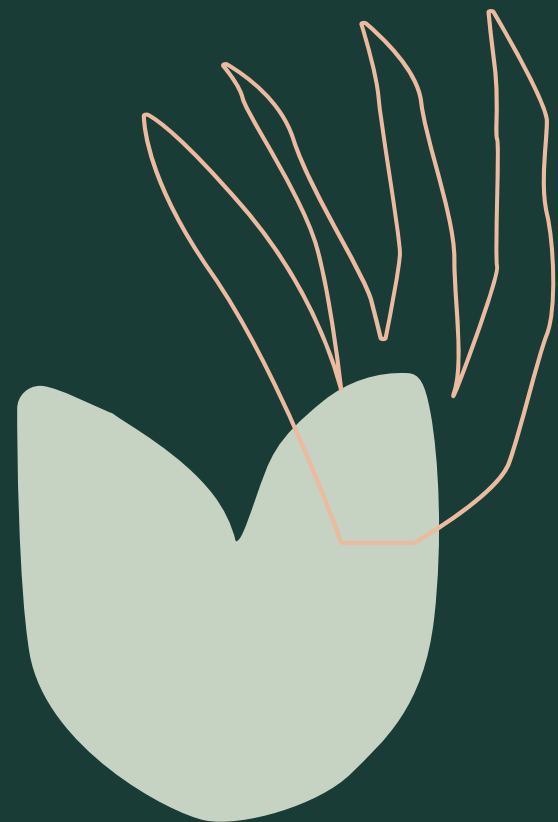
- Train farmers in partnership with CIMAP
- Plant lemongrass with participating farmers

September

- Construct distillation plant
- Start measuring impact of water construction work on groundwater recharge
- Interview village elders on ITK of water management

October

- Establish value chain process of distillation plant
- Connect with Mumbai-based and Udaipur-based buyers for value-added products
- Hand-off project to Seva Mandir



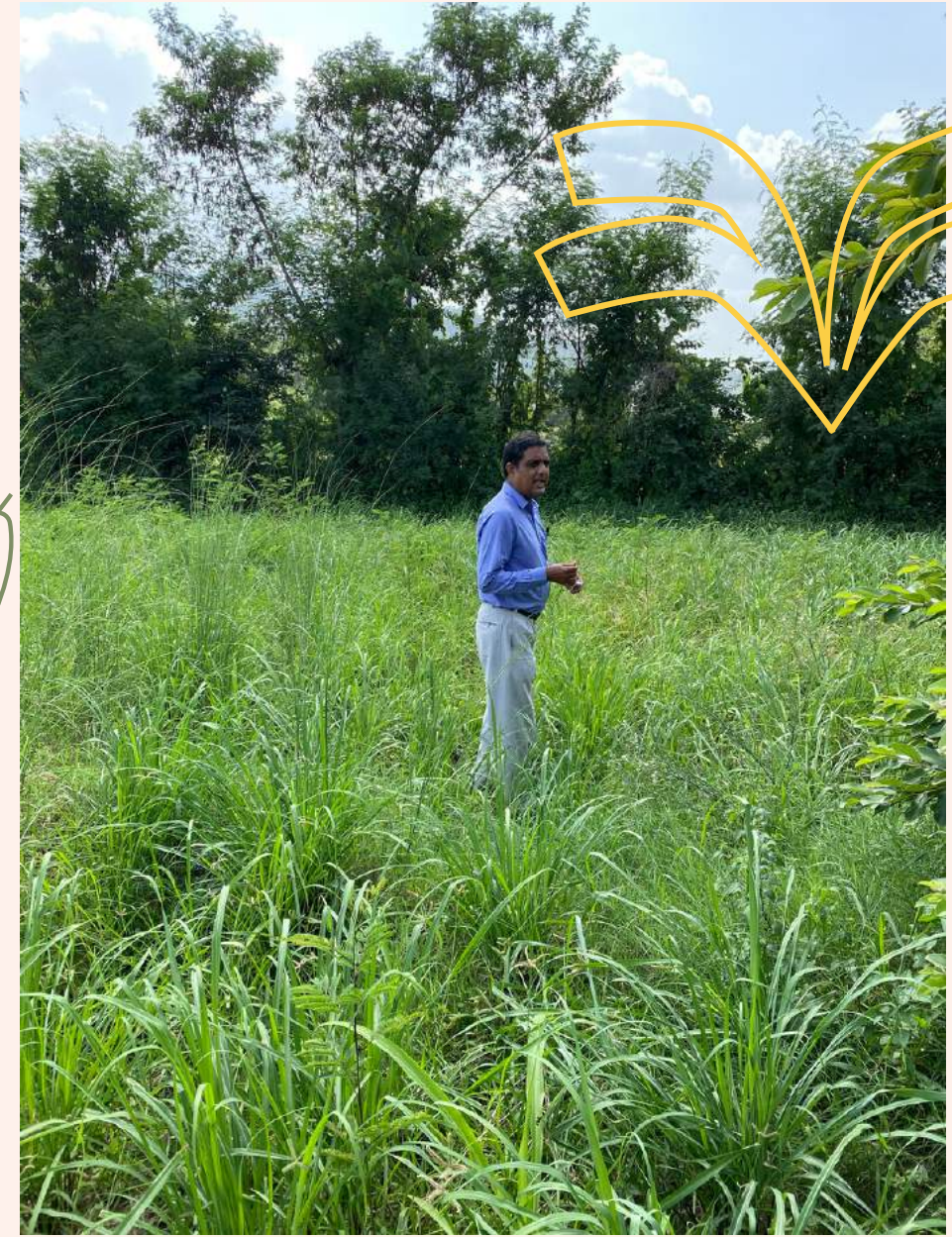
Sustainability

Project has been incorporated into a holistic 5-year plan; working with mentors to create a phased plan

Phase I: Develop water and land resources in the village (recharge groundwater and encourage use of Jeevamrit)

Phase II: Optimize a farmer's individual farm (establish fencing, ponds, and irrigation systems)

Phase III: Incorporate into established value-chain systems (farmers can grow medicinal and aromatic plants and create value-added products to sell at a high-margin)



THANK YOU!

Major Acknowledgments:

Domain Mentors:

- Sunita Jain (overall)
- Tulsiram Suthar (on water harvesting)
- Rajesh Sen (on agricultural interventions)

Local Mentors:

- Shankar Singh Chadana (Block Coordinator)
- Prabhu Lal Meena (Program Associate - NRD)
- Gayatri Chouhan (Program Associate - Women Empowerment)

Nikhitha Jagadeesh for introducing me to Aroma Mission!