

6th Ideal Village Conference At Stanford University

Large scale plan for farm ponds in India to improve groundwater resources

Desh Deshpande – Sept 29-2021

Our Approach to Ideal Village in India





Dedicated Staff and Infrastructure Support the Programs



Deshpande Foundation Headquarters

- State of the art auditorium
- Computer-based classrooms
- Architected interactive meeting spaces

Deshpande Skilling Campus

- 6 Acre Campus, 300,000 sq. ft. space
- 16 Computer-based learning laboratories
- 16 Classrooms



Deshpande Startups Incubator

- Largest in India with 100,000 sq. ft. space
- 8,500 sq. ft. ESDM Cluster
- 12,000 sq. ft. Maker's Lab

Dedicated Staff and Infrastructure

- Two Locations: Hubballi and Nizamabad
- Three State of the Art Campuses
- Nizamabad Campus Work in Progress
- 700+ Staff



FARM POND – The Specific Solution







Deshpande Foundation's FARM POND Journey

Phase 1: 2013-2015 Grant based - 150 Ponds

- Learnt to build farm ponds
- Proved that farmers can make more money
- TOTAL INVESTMENT: 3.5 crores
- Farmer's Contribution = 0
- DF and other Donors: 3.5 crores

Phase 3: 2021-2027 Financial Model - 100,000 Ponds

- TOTAL INVESTMENT: 800
 crores
- Farmer's Contribution = 200 Crores
- Loans to Farmers: 600 crores
- GIS technology, cloud compute

Phase 2: 2015-2020 Donor Assisted - 6000 Ponds

- Farmer's paid 55K per farm pond
- TOTAL INVESTMENT: 48 crores
- Farmer's Contribution = 33 Crores
- DF and other Donors: 15 crores
- Developed reliable processes

Overview of our TECHNOLOGY





 $(1PB=10^{15} bytes = 1000 terabytes)$

How we use **TECHNOLOGY**



- We apply the best in class TECHNOLOGY to these 4 PHASES
 - ASSESS Analyze and understand the current condition
 - PLAN Explore, build consensus, Create Action Plan
 - **IMPLEMENT** Build infrastructure, Implement the Plans
 - **SUSTAIN** Operate and Maintain, Quantify impact
- Rural Transformation Technology Center

Asset utilization index - how busy a farm plot is





Evaluate Options, Generate Action Plan





Village Action Plan (VAP)

To identify all water related activities which helps in improving 'ease of living' of village community. (To be prepared by GP and/ or its sub-committee, i.e. VWSC/ Paani Samiti/ User Group etc. and to be approved in *Gram Sabha* before submitting to DWSM. ISA is to provide handhold support)

1.	Date of preparation:
	Date of approval in Gram Sabha:
	Date submitted to DWSM:
2.	Village name:
	GP name:
	Block name:
	District name:
	State name:
	Village census code:

(No. of habitations and habitation names, if applicable)

I. GP Resolution

 Aspiration of village community: FHTC to _____number of rural households by year ______ with water supply in adequate quantity of _____ locd of prescribed quality* on a regular basis, i.e. _____ no. of hours everyday alongwith water supply to _____ no. of cattle troughs and _____ no. of washing/ bathing blocks.

We, the village community, take the responsibility to own, manage, operate and maintain our in-village water supply infrastructure. We will respect and protect our water bodies and will not contaminate them. We will manage our greywater and save our fresh water.

It is resolved to pay ____ % of capital cost, calculated share of O&M cost and contribute in managing water supply system.

*water quality certificate to be issued by PHED/ RWS Dept.



Static paper data versus Dynamic digital data







Today - Watershed planning teams use paper topography maps, compass and hand filled spreadsheets. They are limited by the quality of data in the print. Lack contextual information like rainfall, water table etc.. **Future** - Planning teams can use digital tools and Immersive experiences to plan the "future state" of their village. Take advantage of additional layers of contextual data like rainfall, aquifer maps etc. Explore many options quickly and safely..

Deshpande Foundation

Live Operations Dashboard for FARM PONDS



Micro Entrepreneurship | Agriculture | Skilling | Startupshubo.biswas@dfmail.org

Capabilities and Services offered by the RTTC



Plan and Execute

- Optimally locate each Farm Pond
- Organize logistics support (fuel, machines, people)
- Generate work orders, job sheets
- Schedule Start, Stop time of individual tasks
- Track real-time progress based on data from field
- Highlight delays, interruptions with root cause
- Allow corrective action, mitigation to be planned and delivered to field
- Display infrastructure providers in the vicinity



Assess Work Area

- Evaluate system trends
 State, District, Taluk, Village
 level GIS insights, data
- Assess historical patterns
- Evaluate Macro, Micro weather, soil moisture, hydrogeology patterns

Call Center Support

- IVRS
- Knowledge Bank
- Toll Free Number/ Telephone exchange
- Missed call tracker
- Support staff

Monitor Impact

- Track activity index like number of crops, irrigation events
- Monitor water utilization
- Coordinate FPO activities
- Manage distributed inventory
- Track Inputs/Outputs

AR/VR/Immersive

- Allow Augmented Reality, Immersive experiences
- Visualize "Village of the Future"
- Experience fly-through simulation



- 1) Co-create the solution with the farmers
- Work through the solution so that the intervention guarantees both increased income and helps the water levels (sustainability)
- 3) Get to the point where the proof is assured
 - 1) Farmers willing to pay
 - 2) Big Backlog
- 4) Then use technology and financial engineering to scale