Azim Premji Foundation

Safe WATER NETWORK

COMMUNITY-LED LAND RESTORATION AND WATER SECURITY FOR AGRICULTURE

Vasundhara

ENVIRONMENT SUSTAINABILITY AND BIODIVERSITY ENHANCEMENT

PROGRAM OVERVIEW

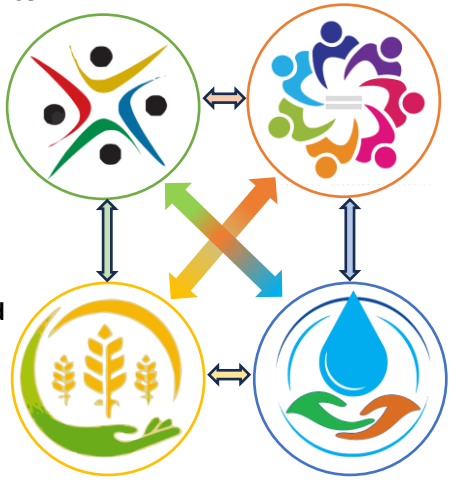
Background

Karmala Block in Solapur (Maharashtra) is a drought-prone, rain-shadow region with ~430 mm annual rainfall, erratic monsoons, and declining groundwater, making agriculture largely rainfed and low-productive. Across six villages, 5,000 farmers spanning 3,493 ha face limited soil moisture and irrigation, restricting Rabi cultivation and leading to migration and low incomes.

To address this, Safe Water Network India, with support from Azim Premji Foundation, launched a community-led IWRM programme focused on watershed restoration, improved irrigation, stronger institutions, and sustainable agriculture to enhance water security and livelihoods.

Project Component

Component 4: Convergence
Creates powerful synergies by bringing together diverse stakeholders, resources, and expertise under a unified strategic vision.



Component 1: Social Equity
Social equity underpins inclusive development, ensuring fair access to resources, opportunities, and decision-making processes for all.

Component 3: Livelihood Enhancement
Economic empowerment through sustainable livelihood opportunities creates pathways out of poverty and builds community resilience.

Component 2: Water Security
Promotes sustainable water management through rainwater harvesting, groundwater monitoring, and water budgeting to enhance resilience, livelihoods, and environmental sustainability.

Together, these interconnected pillars drive holistic development and long-term resilience across diverse communities and regions.

PROGRAM APPROACH

The Program integrates scientific assessment, participatory restoration, and community ownership to create lasting environmental and social impact. This framework ensures ecosystems are not just restored, but sustained through active local stewardship.

Foundation: Baseline Assessments

Understanding Community Needs
Comprehensive surveys identify local priorities, concerns, and expectations for waterbodies restoration outcomes.

Identifying Critical Gaps
Technical assessments reveal infrastructure deficiencies, environmental degradation, and service delivery challenges.

Stakeholder Mapping
Detailed mapping of community groups, institutions, and key influencers enables targeted engagement strategies.

Community Mobilization
Structured awareness programs build understanding, generate interest, and encourage active participation from all segments.

Program Development:

DPR Preparation

1. Prepared DPRs based on engineering surveys, hydrology, community consultations
2. Ensured DPRs align with local priorities, environmental standards, and government guidelines
3. Integrated community concerns—such as water access, safety, livelihood benefits, and encroachment prevention—into restoration plans.

Community-Centric Implementation Model

The implementation model is designed with community participation at its core, ensuring that local voices guide every stage of the restoration process. This participatory approach creates ownership and ensures interventions align with actual community needs.

1. **Panchayat Leadership**
   Local governance bodies provide institutional support and coordinate administrative approvals
2. **Community Leaders**
   Respected individuals mobilize participation and ensure cultural sensitivity in planning
3. **Self-Help Groups**
   Women's collectives contribute local knowledge and support livelihood integration
4. **User Groups**
   Direct stakeholders provide practical insights on usage patterns and priorities

Comprehensive Restoration Approach

Our integrated approach combines engineering solutions, ecological principles, and social considerations to ensure long-term sustainability and community benefit.

Engineering Components
- Structural repairs and upgrades
- Water management systems
- Erosion control measures
- Infrastructure development

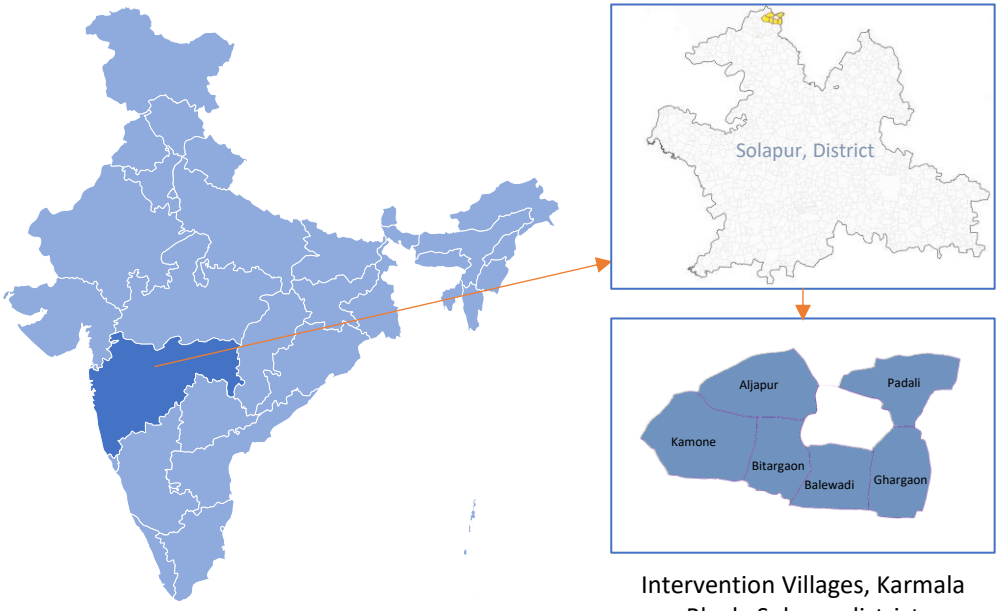
Ecological Components
- Soil health and water quality improvement
- Tree plantation
- Promotion of clean energy

Social Components
- Community engagement
- Livelihood integration
- Equitable access planning

Detailed Project Report

GEOGRAPHICAL COVERAGE

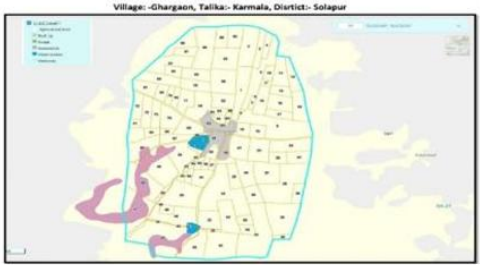
Karmala block in the Solapur district of Maharashtra - the program covers the following six villages: Aljapur, Bitargaon, Balewadi, Ghargaon, Kamone, and Padali.



Intervention Villages, Karmala Block, Solapur district

Project at Glance

WATERSHED DELINEATION



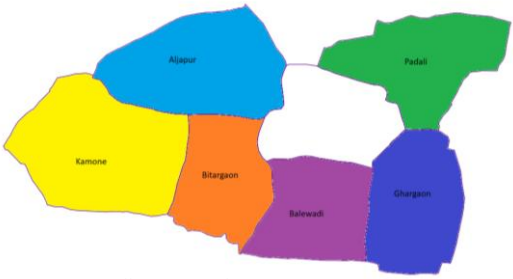
Combines KoboTool data collection with GIS base maps for dynamic visualization of watershed characteristics and field observations.

BASELINE ASSESSMENT

The program covers six villages in Karmala Block, Solapur (Maharashtra): Aljapur, Balewadi, Bitargaon, Kamone, Khargaon, and Padali.

Key Information Areas

- Farmer landholding size
- Rabi cultivation area
- Kharif cultivation area
- Crop productivity (yield, percentage)
- Agricultural income



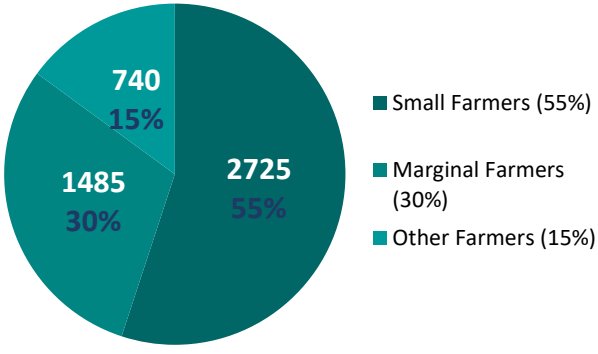
Project Village Boundary Map

WEALTH RANKING

Method: Participatory Rural Appraisal (PRA) / Household Survey
Unit of Analysis: Farmer Household

Wealth Category	Landholding Size	Irrigation Access	Housing Type	Primary Income Source	Annual HH Income (₹)	Key Characteristics
Very Poor	< 1 acre	Rainfed / None	Kutcha	Wage labour, marginal farming	< 75,000	High debt, food insecurity, and migration
Poor	1–2 acres	Limited	Semi-kutcha	Small farming + labour	75,000 – 1,50,000	Low productivity, limited assets
Lower-Middle	2–4 acres	Partial	Semi-pucca	Agriculture primary	1,50,000 – 3,00,000	Moderate inputs, some irrigation
Middle	4–6 acres	Assured	Pucca	Agriculture + allied activities	3,00,000 – 6,00,000	Stable yields, livestock ownership
Better-Off	> 6 acres	Multiple sources	Pucca	Agriculture + business/service	> 6,00,000	Mechanization, savings, market linkages

LANDHOLDING OF FARMERS %



SOIL AND WATER CONSERVATION MEASURES

- 1,075 Ha of soil and Water conservation measures: CCTs, WATs, farm bunding, loose boulder structures, gabions, nala dams, recharge pits, and farm ponds
- 107 rainwater harvesting structures created
- 112 million litres of rainwater harvesting capacity created
- 246 million liters harvested to date

Other measures for natural resource protection included irrigation infrastructure, tree plantations, and climate-smart agriculture to improve farm productivity and support sustainable Rabi crop planning through water budgeting.

Farm Ponds

Farm Bunds

Deep CCT

Doha Model

FARM POND

2 farm ponds were created, one each in Balewadi and Kamone villages, covering an area of 1.6 acres and providing a water-harvesting and recharge potential of 6.3 million litres. These farm ponds provide irrigation water, improve livestock health, reduce soil erosion, increase farm income, and decrease dependence on rainfall.

Balewadi Farm Pond - BEFORE

Kamone Farm Pond - BEFORE

Balewadi Farm Pond - DURING

Kamone Farm Pond - DURING

Balewadi Farm Pond - AFTER

Kamone Farm Pond - AFTER

PROGRAM APPROACH

Farm Bund helped retain rainwater within the field boundary, reduce runoff, and prevent soil erosion. Repairing and maintaining existing farm bunds (ridges or embankments) ensured their continued effectiveness in soil and water conservation. Regular strengthening and reshaping of damaged sections prevented breaches during heavy rainfall and sustained field moisture levels

Contour Trenches: Deep CCT (DCCT)

Trenches were dug along contour lines to capture runoff and increase infiltration. They reduced soil erosion, improved groundwater recharge, enhanced crop yields, and improved water quality. Additionally, they slowed down surface water flow, allowing better percolation and supporting long-term watershed sustainability.

Farm Bund at Kamone

Farm Bund at Balewadi

Deep CCT at Kamone

CCT at Kamone

Doha Model at Balewadi

CCT, Deep CCT, FB Work Drone Shoot Balewadi

GABION STRUCTURES

Gabion structure is an erosion-control measure made from wire-mesh baskets filled with rocks/stones/ concrete and placed along slopes or streams. It stabilizes slopes, prevents soil erosion, protects against flooding and landslides, and stabilizes watercourses.

4 gabion structures developed, including 2 structures with reinforced core walls for enhanced strength and durability.


Gabion structure at Balewadi

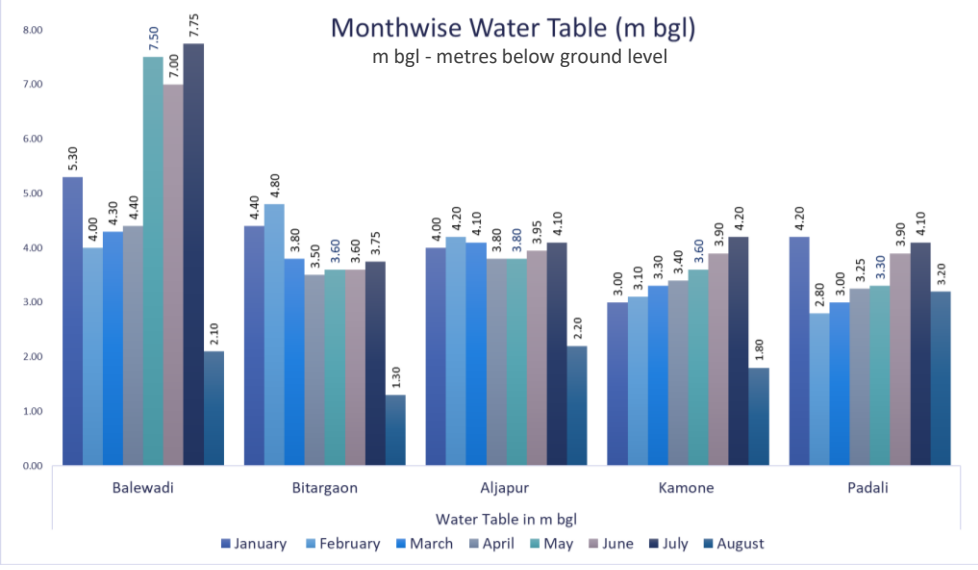

Gabion with core wall at Bitargaon

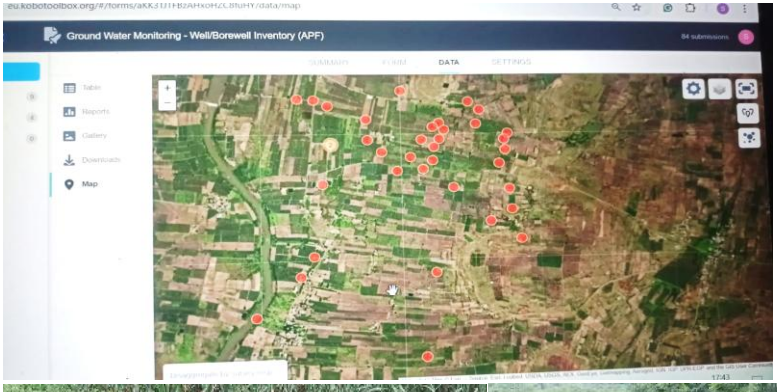

Gabion structure at Aljapur

WELL INVENTORY – WATER TABLE MONITORING

Well inventory, capturing technical, spatial, and usage details of each well, is recorded to monitor well depth, diameter, pump type, year of construction, ownership, and seasonal water-level fluctuations.

An inventory of 50 irrigation wells across six villages.





Groundwater monitoring of 50 irrigation wells

Well Inventory to measure Groundwater Level

COMMUNITY LIFT IRRIGATION SYSTEM

A Community Lift Irrigation System improves equitable access to irrigation and boosts agricultural productivity. It lifts water from shared wells and borewells through a common pumping and distribution network to farmers' fields. Managed by a village committee, it ensures transparent allocation and timely maintenance. The approach promotes efficient water use, crop diversification, stable yields, and sustainable groundwater management.

Irrigation Well: *The community irrigation well improved reliable access to water for agriculture, supporting timely irrigation and increased cropping intensity.*

The well inventory indicates a significant improvement in groundwater levels around the lift irrigation system. Over 100 hectares are already benefiting, with farmers undertaking land development for upcoming seasons. With continued monitoring and expansion, the system is expected to benefit approximately 300 hectares.

Village Kamone Community Irrigation Well Mark Out

Village Kamone Community Irrigation Well Work 50 Feet done

COMMUNITY IRRIGATION WELL

Thirteen community irrigation wells in Padali, Kamone, and Balewadi improved water availability for irrigation and reduced dependence on rainfall. The initiative enabled timely cropping and strengthened agricultural productivity and farmer incomes. It also promoted community-led water management and sustainable groundwater use. Overall, it enhanced climate resilience by ensuring reliable access to water during dry spells.

Well measurement after completion of work

Village Kamone Community Irrigation Well Work 50 Feet work done

Inauguration of Community Irrigation Well at Balewadi

Community Irrigation Well At Balewadi

Community Irrigation Well, Potegaon, Maharashtra

COMMUNITY IRRIGATION BOREWELL

The community borewells ensure water availability during dry periods, reducing irrigation stress and improving crop resilience. Soil and water conservation efforts improved groundwater levels in 134 wells and 344 borewells. As a result, irrigation is now secured for 518 hectares of agricultural land across both Kharif and Rabi seasons.

Community Irrigation Borewell At Padali

Community Irrigation Borewell At Kamone

Motor Installation at Padali

WATERBODY REJUVENATION

Waterbody restoration strengthened local water security and groundwater recharge across a 230 ha catchment. Community ponds and traditional waterbodies were rejuvenated through desilting, embankment strengthening, inlet–outlet treatment, and improved water retention.

Meeting with Block Development Officer

The initiative was implemented in close coordination with PRIs, relevant government departments, and community stakeholders, following due consultations and permissions on Gram Panchayat land.

Size: 0.30 acres
Water Storage Capacity: 4.0 ML

Waterbody Restoration At Balewadi Hiryacha Mal Before Work

Waterbody Restoration Hiryacha Mal Work At Balewadi Work Completed

Size: 0.86 acres
Water Storage Capacity: 8.0 ML

Waterbody Restoration At Ghargaon Damberi Percolation Tank Before Work

Waterbody Restoration At Ghargaon Damberi Percolation Tank Work Done

STRENGTHENING WOMEN SELF-HELP GROUPS

A total of 60 meetings were conducted with 18 Self-Help Groups to build awareness on SHG formation, benefits, and functioning. The initiative focused on capacity building in bank linkages, financial literacy, and identification of viable livelihood options, while strengthening institutions and motivating women to develop feasible business plans. The intervention also enhanced women's participation in Gram Sabha meetings to raise and address women-related issues in local governance (GPDP).
This collective strengthening has improved women's confidence, decision-making capacity, and leadership within the community.

SHG Meeting at Balewadi

SHG Meeting at Padali

WOMEN HEALTH CAMP & NUTRITION TRAINING

In February 2025, an annual health initiative reached over 250 women in the project area, focusing on health awareness, preventive healthcare, and nutrition education. A senior doctor and the medical team conducted five health camps and nutrition training sessions.

Key Activities:

- Awareness sessions on common diseases, preventive healthcare, nutrition, and healthy lifestyle practices
- Health check-ups and blood tests for 40 women, followed by consultations with doctors
- Nutrition education and guidance on sanitation and healthy habits

Key Outcomes:

- Increased awareness of health and nutrition among women and SHG members
- Early identification of health issues and adoption of preventive measures
- Greater adoption of healthy and sanitation practices
- Enhanced participation of women in various project interventions

Health Camp and Nutrition Training, Balewadi

Health Camp and Nutrition Training, Padali

Health Camp and Nutrition Training, Kamone

EXPOSURE VISIT TO MODEL WATERSHED PROJECT

An exposure visit to Hiware Bazar, a model for community-led watershed development, for 50 community members enhanced their understanding of sustainable water management and livelihoods. With improved fodder availability from crop demonstrations, farmers were encouraged to shift toward dairy production and milk marketing, benefiting from better cattle health and higher yields.

Key Learning Objectives

- Learn the Hiware Bazar watershed development model
- Understand water harvesting, soil conservation, and afforestation practices
- Study the roles of VWC, SHGs, and Gram Panchayat
- Interact with farmers on diversified livelihoods

Key Outcomes

- Increased community confidence and motivation
- Awareness of dairy as an alternative to water-intensive sugarcane
- Better understanding of watershed and water conservation practices
- Exposure to structures like check dams, farm ponds, and recharge systems
- Motivation to develop their villages as model villages

Exposure Visit to Hiware Bazar

Exposure Visit Hiware Bazar Season, Popatrao Pawar

SUSTAINABLE AGRICULTURE PRACTICES

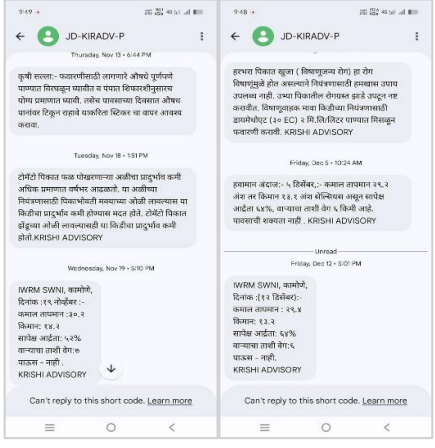
Modern agriculture faces climate, resource, and market challenges. This initiative integrates technology, crop science, and community institutions to build resilient farming systems that enhance livelihoods and food security for smallholder farmers.

Automatic Weather Station

Weather is the most critical factor influencing agriculture, yet farmers have long relied on guesswork. Automated weather stations replace this uncertainty with **hyperlocal, real-time data**, enabling informed decisions and shifting farming from reactive to proactive management.

Farm Advisory

A total of 250 farmers across five villages received timely agricultural advisories directly via SMS on their mobile phones. To maximize outreach and benefits, these advisories were further shared via WhatsApp groups in the project villages, reaching approximately 1,500 farmers.



CROP DEMONSTRATION

Agricultural Varietal Demonstrations: Enhancing Crop Productivity and Resilience

The project implemented crop and fodder demonstrations across villages, exceeding targets (213 vs. 125) and showing strong farmer engagement. Guided by KVKs, agricultural universities, and the Agriculture Department, the initiative improved crop quality, biomass production, and climate resilience, with increased farmer participation and contributions.

Climate-Resilient Maize Variety: Rashi-3499

To address water scarcity, the project introduced **Rashi-3499**, a drought-tolerant maize variety, as an alternative to water-intensive crops like sugarcane and sorghum. With low water needs, high yield, and strong fodder value, it suits Karmala's conditions and supports a shift to sustainable, climate-resilient agriculture, helping farmers conserve water while maintaining productivity.

Climate-resilient farming for Maize crop

Maize Variety: Rashi-3499

Intercropping System: Black Gram and Red Gram Integration

The project promoted intercropping of **Black gram (TAU-1)** and **Red gram (Godavari-2013-41)**, suited to Karmala's conditions. This improved productivity, soil health (through nitrogen fixation), income diversification, and reduced pest risks, offering a proven model for sustainable farming.

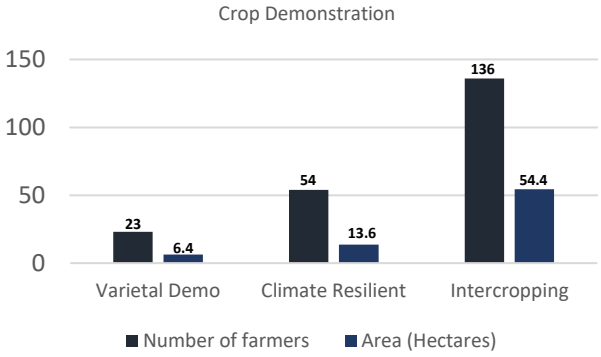
Both varieties demonstrated excellent performance, validating the technical recommendations from agricultural research institutions and providing farmers with a proven model for sustainable intensification of their farming systems.

Seed distribution to the farmer for intercropping

Demonstration of a plot for intercropping

IMPACT OF CROP DEMONSTRATION

The project's reach exceeded all expectations, covering 213 farmers across 74.4 hectares of agricultural land. The distribution indicates strong farmer preference for integrated approaches that combine multiple benefits, particularly intercropping systems that address both productivity and sustainability goals simultaneously. The breakdown of activities reveals strategic diversity in approaches:



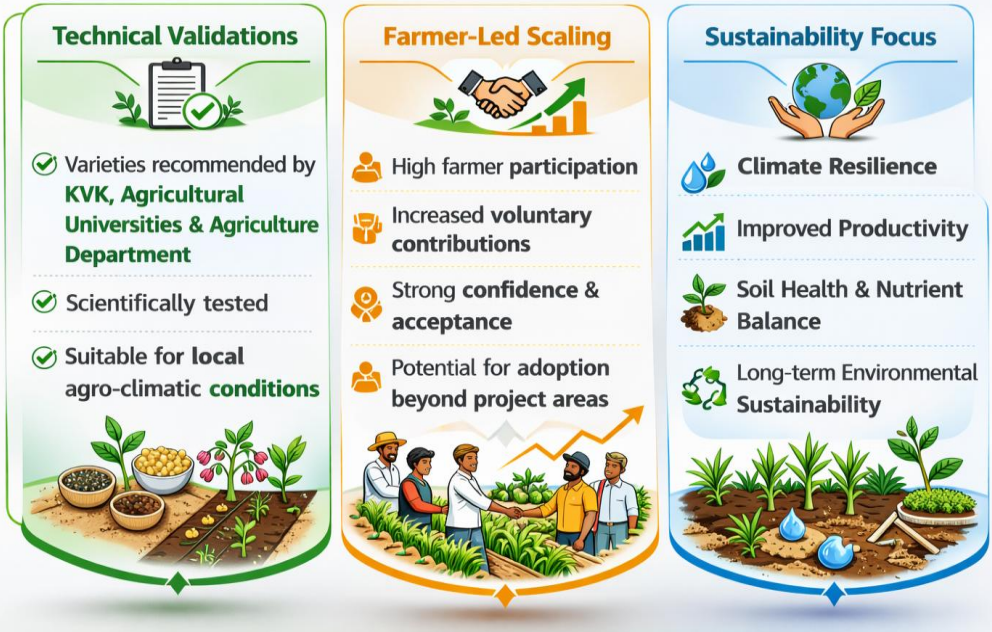
213
Total Farmers Engaged
Participating in crop varietal demonstrations across all intervention types

74.40
Hectares Covered
Total agriculture areas improved under varieties and practices

1.53
Million Liters
Water saved under crop demonstrations, varieties, and practices

Key Performance Insights

Intercropping demonstrations dominated participation (64% of farmers, 73% of area), highlighting strong interest in diversified systems. Climate-resilient crops reached 25% of farmers, while traditional varieties served as smaller but important baseline and entry points.



FODDER FOR CATTLE

Fodder Demonstration Program: Enhancing Livestock Nutrition in Project Villages

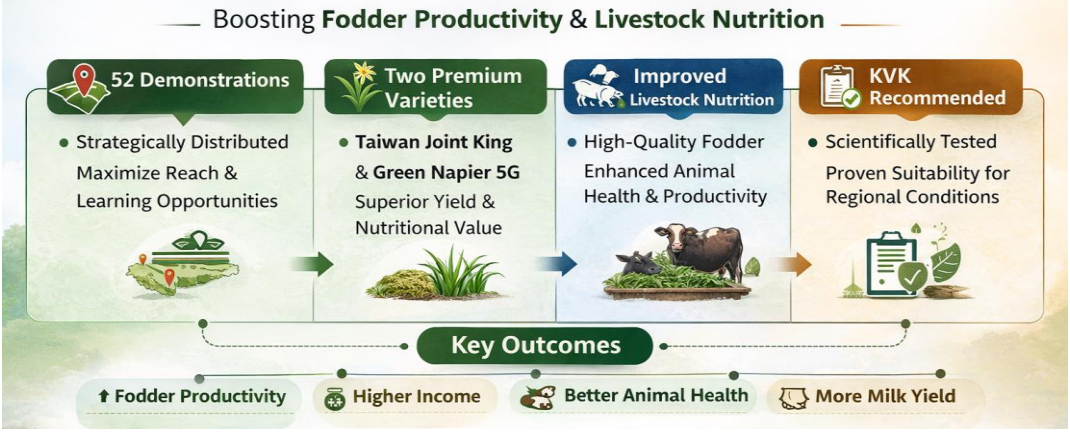
The fodder demonstration program is a strategic initiative to improve livestock nutrition and productivity across our project villages. Through carefully coordinated efforts, we established 52 demonstration sites featuring Taiwan Joint King and Green Napier 5G fodder varieties. Each demonstration was implemented in partnership with farmers who recognized the need for high-quality feed to support their livestock.

52
Demonstration sites across 06 villages

38.04
Hectares of Land for fodder production

1058
Tons of fodder production every year

02
Premium varieties promoted for fodder production Taiwan Joint King and Green Napier 5G



IMPACT OF FODDER DEMONSTRATION

- 52 fodder demonstrations were conducted
- 52 farmers using improved Napier varieties (5G and Taiwan Joint King)

These efforts are expected to generate about 4,000 tonnes of biomass by project end. The initiative also strengthened farmers' skills in scientific fodder cultivation, including spacing, nutrient management, and systematic harvesting.

Napier grass is grown in the fields as a result of fodder demonstrations

Improved water availability from project interventions boosted Napier fodder growth and livestock productivity. One farmer expanded his herd from three to twenty cows due to reliable year-round water and off-season fodder. The cows now yield about 20–30 liters of milk per day, strengthening household income. Nutritious Napier feeding also improved milk fat content and market value, enhancing overall dairy profitability.

Fodder is procured from the fields for the livestock

Farmer beneficiary

ORGANIC BIO-FERTILIZER: JEEVAMRUT

- Jeevamrut is a low-cost, liquid organic bio-fertilizer made from fermented cow dung, urine, jaggery, pulse flour, and soil. It acts as a microbial booster, enhancing soil fertility, nutrient availability, and crop yield by supplying beneficial microbes, carbon, and nutrients, thereby reducing the need for chemical fertilizers.

- Jeevamrut typically has 1.97% Nitrogen, 0.172% Phosphorous, and 0.29% Potassium, along with beneficial micronutrients and complex microbes. It has a pH of ~4.93. Typical micronutrients are manganese (47 ppm), copper (50 ppm), iron, and zinc. Jeevamrut is also a great source of natural carbon for soil.

15,000 liters

Jeevaamrut Prepared

Uses in the Rabi and Kharif crops to improve microbial activity in the soil across the project area

16.35

Hectares Covered

Total agricultural areas where Jeevaamrut was applied

75

Farmers adopted

Applying in the crops for improvement of soil and crop health

JEEVAMRUT – Organic Fertilizer

A natural microbial culture that enhances soil fertility and plant health

INGREDIENTS (For 200L Mix)

- Cow Dung: 2–10 kg (local Indian breed preferred)
- Cow Urine: 2–10 liters
- Jaggery: 200 g – 2 kg
- Pulse/Gram Flour: 200 g – 2 kg
- Soil: 1 handful (garden soil or near a banyan tree)
- Water: 40–200 liters

HOW TO PREPARE

- **Mix:** Add all ingredients to a drum with water.
- **Activate:** Stir clockwise 2–3 minutes to stimulate microbes.
- **Ferment:** Cover with a wet jute sack and keep in shade.
- **Daily Stirring:** Stir 2–3 minutes, morning and evening, for 3–7 days.
- **Filter & Use:** Filter before using, especially for drip irrigation.

READY IN

✓ 3–7 days, rich in beneficial microbes

BENEFITS

- Boosts soil microorganisms
- Enhances nutrient availability
- Reduces chemical fertilizer use
- Improves crop quality

WATER BUDGETING

A village **water budgeting exercise** assessed water availability (rainfall, surface water, groundwater) and demand across domestic, livestock, agricultural, and institutional sectors. Using a participatory approach with the Gram Panchayat and the community, it identified periods of water stress, deficits, and high-water-use crops. The findings informed an action plan on crop planning, efficient irrigation, groundwater regulation, and conservation, strengthening community ownership and long-term water security.

Water Budgeting Exercise, Balewadi

Water Budgeting Exercise, Bitargaon

WATER BUDGETING – VILLAGE WATER AVAILABILITY

1. NATURAL GROUNDWATER RECHARGE

	35%	**57.53**
Total	Only 30-40% is usable for crops	**20.14**

2. GROUNDWATER RECHARGE (RAINFALL)

Water cycle		**Total Water Requirement (Cr Litres)**
Soil Moisture	20%	57.53
Water lost due to Evaporation	20%	57.53
Naturally available as Groundwater	10%	**28.77**
Water flowing out of the village	50%	143.84

3. SURFACE WATER RECHARGE (ARTIFICIAL)

Treatment Structure	**Number**	**Total water storage capacity (m^3)**	**How many times the structures are filled by rain**	**Total artificially available groundwater (Crore Litres)**
Percolation Ponds	1	2500	1.50	3.75
Cement Check Dams	0	0	2.00	-
Earthen Nala Bund	35	5000	2.00	10.00
Soil Nala Bunds (ha)	0	0	1.00	-
Farm Ponds/Storage Ponds	5	1800	2.00	3.60
Continuous Contour Trenches (Ha.)	0	600	1.00	0.60
Gross				**17.95**
Net (Recharge efficiency)				**8.98**

4. SURFACE WATER RECHARGE (River/canal supply)

Source	**Total Number of Pumps**	**Water thrown out per hour (Litres)**	**Days/hours pump runs per year**	**Days pump runs per year**	**Total water import (Crore Litres)**
Canal	0	45000	180	8	0
Water lift by individual farmers from River	25	60000	200	6	180
Lakes	0	30000	150	6	0
River / Lift irrigation scheme	0	40,000	120	5	0
Total					**180.00**

* Stays in the Soil. During Monsoon: Soil moisture will be higher (potentially reaching 10-20% or more depending on soil depth and rain intensity), but not a permanent high percentage.

WATER BUDGETING – VILLAGE WATER DEMAND

1. AGRICULTURAL CROPS				
Kharif Crops (Monsoon Crops)				
Crops	**Water Requirement (m^3/Ha)**	**Total Area (Hectares)**	**Total Water Requirement (Cr Litres)**	**Reference/Data Source**
Urad (Black Gram)	3500	100	35.00	FAO / MH Agri Dept/ICAR–IIPR
Maize	5000	40	20.00	FAO/ICAR
Pigeon pea (Arhar)	2000	120	24.00	FAO / ICAR
Moong bean	3000	50	15.00	State Agri Dept
Pulses	0	0	-	
Vegetables (Mixed)	3000	20	6.00	FAO
Gross total		330	100.00	
Net Total	**Cultivable area**	30%	**30.00**	
Rabi Crops (Winter season)				
Crops	**Water Requirement (m^3/Ha)**	**Total Area (Hectares)**	**Total Water Requirement (Litres)**	**Reference/Data Source**
Jowar (Sorghum)	2100	20	4.20	FAO
Wheat	4000	150	60.00	ICAR, 4–5 irrigations assumed
Chickpea / Harbara / Green Gram	3500	50	17.50	
Onion	4000	20	8.00	
Maize	4500	35	15.75	FAO
Gross total		275	105.45	
Net Total	**Cultivable area**	75%	**79.09**	
Summer Season				
Crops	**Per Hectare water requirement**	**Total Area (Hectares)**	**Total Water Requirement (Litres)**	**Reference/Data Source**
Fodder Crops - Napier	10000	60	60.00	FAO fodder crop water requirement guidelines
Sugarcane	22500	250	562.50	ICAR–SBI
Gross total			622.50	
Net Total	**Cultivable area**	90%	**560.25**	
2. DOMESTIC + LIVESTOCK				
Total Water Usage	**Total Number**	**Water required per day (L)**	**Crore Litres per annum**	**Reference/Data Source**
A. Humans	1139	55	2.29	CPHEEO norms (55 Lpcd – rural Maharashtra)
B. Hybrid cows and buffaloes	197	100	0.72	BAIF / NDDB livestock water norms
C. Indigenous cows and buffaloes	598	35	0.76	BAIF livestock norms
D. Goats/Sheep's Population	654	10	0.24	ICAR small ruminant norms
E. Poultry Farm-Birds	1054	2	0.08	Poultry water requirement – ICAR
Net Total			**4.09**	
3. INDUSTRY / OTHERS				
Net Total * **	1	1350	**0.05**	DPR / CSR planning norm for villages
4. SYSTEMLOSS/WASTAGE				
			-	

* CPHEEO norms (55 Lpcd – rural Maharashtra), BAIF / NDDB livestock water norms, ICAR small ruminant norms & Poultry water requirement – ICAR
** DPR / CSR planning norm for villages
***No major industries in the village; estimated for small rural enterprises (flour mills, dairy, workshops) as per CSR/DPR thumb rules

WATER BUDGETING - WATER BALANCE STATEMENT

Water Availability

Source	Volume (Crore Litres)
Natural Groundwater Recharge	20.14
Groundwater Recharge (Rainfall)	28.77
Surface Water Recharge (Artificial Storage)	8.98
Surface Water Recharge (River / Canal Supply)	180
Total Water Incoming in the village (A)	**237.88**

Water Demand

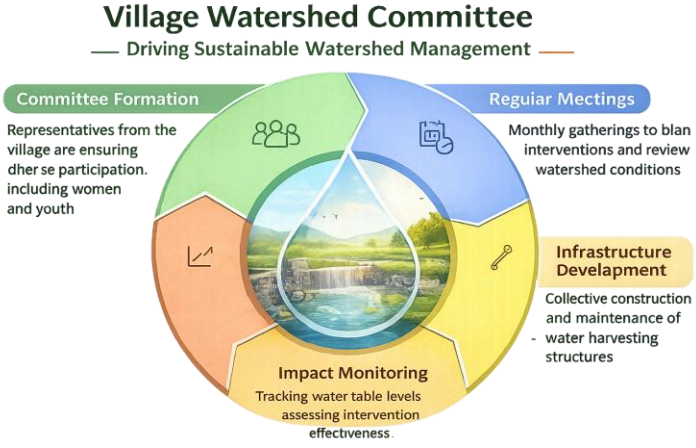
Sector	Volume (Crore Litres)
Agriculture (All Crops)	669.34
Domestic + Livestock	4.09
Industry / Others	0.05
System Loss / Wastage	0
Total Water outgoing in the village (B)	**673.47**

Water Balance Statement	
Item	**Crore Litres**
Total Availability (A)	**237.88**
Total Demand (B)	**673.47**
Surplus / Deficit (A-B)	**-435.59**

CAPACITY-BUILDING

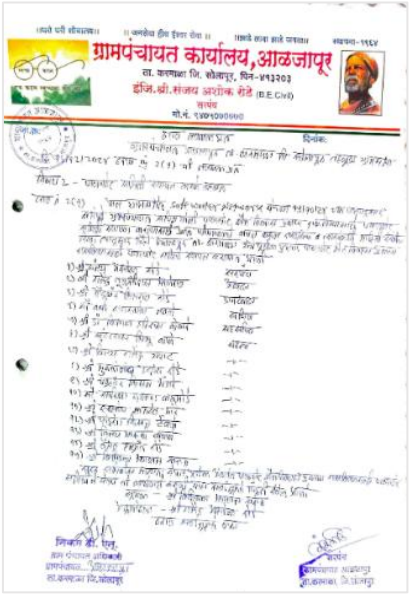
Village Watershed Committees (VWCs)

Water is vital for agriculture, but increasingly unpredictable. A total of six Village Watershed Committees were created to promote collective resource management, bringing communities together to ensure water security for entire villages rather than just individual farms.



Each VWC is responsible for overseeing water resource management and soil conservation within its catchment area. These committees bridge the gap between traditional community governance and modern water management science.

Village Watershed Committee Meeting



Gram Panchayat approval of VWC

FARMER FIELD SCHOOL

Empowering Farmers through Farmer Field Schools

13 FFS formed across six villages.

Farmer Field Schools promote hands-on, peer-to-peer learning—blending traditional knowledge with scientific practices. This approach enables farmers to test, adapt, and adopt locally relevant solutions, driving sustainable and confident decision-making.

1 Field Observation

Participants examine crops together, identifying growth stages, nutrient deficiencies, pest damage, and beneficial insects. This develops diagnostic skills that transfer across crops and seasons.

2 Group Analysis

Farmers discuss their observations, sharing experiences and debating management options. The facilitator guides rather than lectures, helping the group discover solutions through structured discussion.

3 Experimentation

Participants design and implement their own trials comparing different practices. This hands-on experimentation builds confidence and generates locally validated knowledge.

4 Knowledge Sharing

Successful farmers present their results to peers, creating a multiplier effect as innovations spread through social networks beyond formal training participants.

304
Farmers Trained
Participants in FFS sessions across all villages

50
Training Sessions
Conducted over the project period

87%
Practice Adoption
Of participants implementing at least one new technique

TRAININGS

A comprehensive training initiative successfully equipped 182 farmers across the project villages with essential knowledge of sustainable agriculture. The program covered six critical areas, creating a multiplier effect through master trainers who will lead community-wide agricultural transformation.

Organic Farming

Natural nutrient cycling, cover crops, mulching, and organic amendments to build fertile, biologically active soils without synthetic chemicals.

Water Conservation

Mulching, contour bunding, micro-catchments, and drip systems to optimize water use efficiency amid increasing scarcity.

Soil Health Management

Five principles: protect soil surface, minimize disturbance, maintain living roots, promote biodiversity, integrate organic matter.

Zero Budget Natural Farming

Low-cost methods using locally available materials for compost, biofertilizers, and natural pest repellents, reducing input costs dramatically.

Disease Identification

Early recognition of crop diseases through visual symptoms and integrated pest management strategies for sustainable control.

Kitchen Gardening

Small-space techniques for nutrient-rich vegetables, promoting household nutrition and income diversification.

182
Farmers Trained
Direct beneficiaries equipped with practical, sustainable farming skills

6
Core Training Areas
Comprehensive curriculum covering critical agricultural practices

Master training program on sustainable agriculture

CONVERGENCE

A comprehensive water resource development program is underway in Kamone Village and surrounding areas, combining government funding, community contributions, and sustainable infrastructure under the convergence model. This collaborative initiative addresses water scarcity and agricultural needs through strategic investments in solar systems, irrigation wells, and water retention structures.

Total Investment
₹2.28 Crore
Combined funding from convergence programs, MGNREGA, and community contributions

Work under Convergence

- 25 Solar System installations
- 9 Irrigation Wells development
- 9 ENB structure repairs
- 1 Community Farm Pond

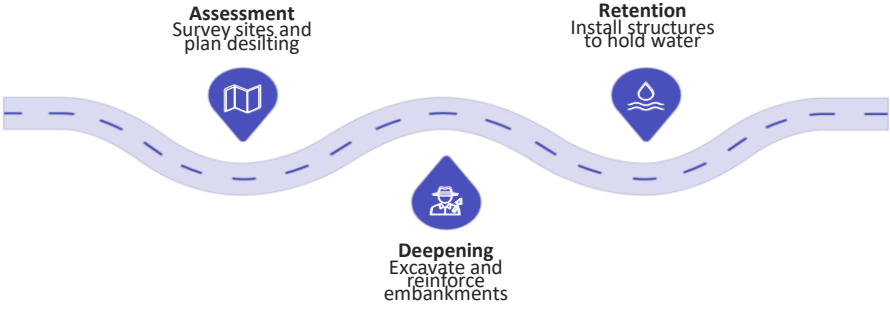
Convergence Funding Allocation

Solar Systems
₹82.50 lakhs
25 solar-powered irrigation systems to reduce energy costs and promote sustainable farming

Irrigation Wells
₹45 lakhs
9 wells to improve groundwater access and irrigation efficiency across agricultural lands

Community Contribution
₹11.85 lakhs
Local investment demonstrating strong community ownership and commitment to project success

MGNREGA Infrastructure Proposal



A proposal of ₹1.34 crore has been submitted under MGNREGA to repair, desilt, and deepen 9 ENB structures to improve water storage, irrigation efficiency, and groundwater recharge.

Collaborative Success Model: With a total investment of ₹2.28 crore, this initiative showcases a strong convergence of government support, community effort, and sustainable solutions to strengthen long-term water security and agricultural productivity.

CONVERGENCE

Meeting with Block Development Officer

Meeting with Executive Engineer, SWC Department, for Proposal Kamone ENB Repair

Taluka Agriculture Department for convergence

Meeting with Dy. Tahsildar for Submitting Proposal Kamone ENB Repair Under MGNREGA Convergence

Meeting with Say Trees Environmental Trust Officer for various inputs

IMPACT – YEAR 1

1438
Farmers Benefited

- *Improved water access*
- *Reduced drought risk*
- *Better crop productivity*
- *Climate resilience*

Soil and Water Conservation

686.61 Hectares
Land treated for Soil and Water Conservation

Assured Irrigation Coverage
753 Hectares
Agricultural land
Both Seasons:
Kharif & *Rabi*
(8% increase in Rabi crop cultivation)

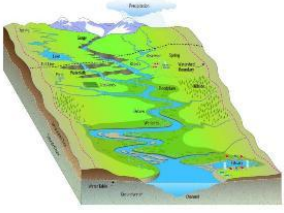
1.53
Million Liters
water saved due to various farm interventions

911.83
Million Liters
Rainwater Harvesting & Groundwater Recharged

40
rainwater harvesting structures and irrigation wells created

Click the image to visualize the work

Click the Earth image for Balewadi Work Dron Shooting

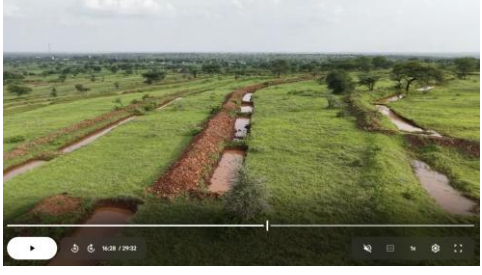


Click the Watershed image for Kamone Work Dron Shooting

GALLERY

Karmala Watershed Development
https://photos.app.goo.gl/ccUiS42RzaB2Y4xq8

Soil & Water Conservation Measures
https://photos.app.goo.gl/QumiLcFokrnroXXq7



Drone Shoot Video, Kamone
https://drive.google.com/file/d/1vEDJpFaD33o9Dd3nPqcMwAJrQXXJhYDr/view

Drone Shoot Video, Balewadi
https://drive.google.com/drive/folders/1VGNr_YFsXP2FoKYaOSwpR-R9G-QwBqmn

Vasundhara
ENVIRONMENT SUSTAINABILITY AND BIODIVERSITY ENHANCEMENT

Community Irrigation Well, Potegaon, Maharashtra

Health Camp & Nutrition Training, Kamone, Maharashtra

Exposure Visit to Watersheds, Hiware Bazar, Maharashtra

VASUNDHARA CORE PRINCIPLES

1 ECOSYSTEM-CENTERED STEWARDSHIP

Protection, restoration, and rejuvenation of natural resources in urban and peri-urban ecosystems

2 COMMUNITY-LED RESTORATION

Empowering communities through livelihood-focused eco-restoration

3 CAPACITY BUILDING

Strengthening local institutions and building bio-entrepreneurship skills of youth and women

4 KNOWLEDGE DISSEMINATION

Natural resource conservation approaches and methods; water budgeting for a watershed to promote water for Rabi crops

Safe WATER NETWORK

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