

NATURAL RESOURCE CONSERVATION THROUGH WATERSHED DEVELOPMENT

Taratgaon Village, Solapur District, Maharashtra

JAN 2023 – MAR 2026

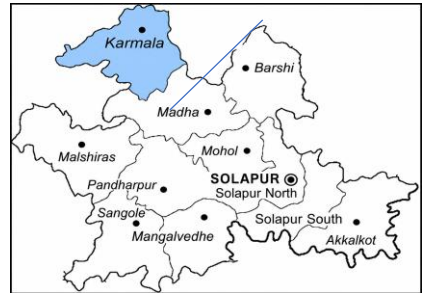


PROGRAM OVERVIEW

Background

Taratgaon Village in Karmala Block of Solapur District, Maharashtra, is a drought-prone rain-shadow region experiencing erratic rainfall, declining groundwater levels, low soil moisture, and limited irrigation, resulting in low agricultural productivity, livelihood insecurity, and migration.

To address these challenges, Safe Water Network India (SWNI), with support from National Bank for Agriculture and Rural Development (NABARD) under the **Watershed Development Fund (WDF)** – Full Implementation Phase (FIP), implemented a **four-year, 2023-2027** community-led watershed development program focused on soil and water conservation, groundwater recharge, climate-resilient agriculture, and strengthening rural livelihoods and village institutions.



Program Components

Component 4: Convergence & Sustainability

Builds long-term sustainability with scheme convergence, technical expertise, and long-term watershed management.

Component 3: Livelihood Enhancement

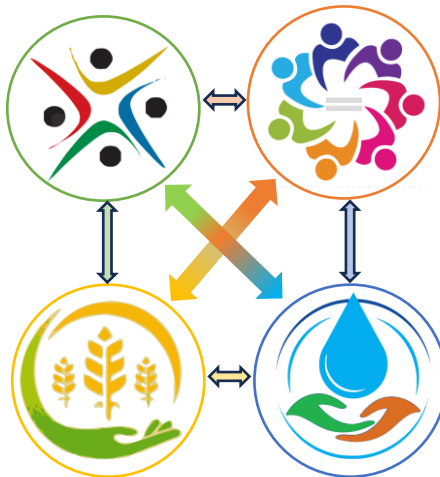
Promotes climate-resilient agriculture, improved farming practices, horticulture, livestock support, and income generation.

Component 1: Community & Social Inclusion

Inclusive participation, especially among women, marginal farmers, and strong village institutions.

Component 2: Soil & Water Conservation

Enhanced water security and ecological resilience through watershed management.



Watershed management serves as a critical link between environmental conservation and sustainable agriculture and development by addressing the complex interplay of ecological, social, and economic factors.

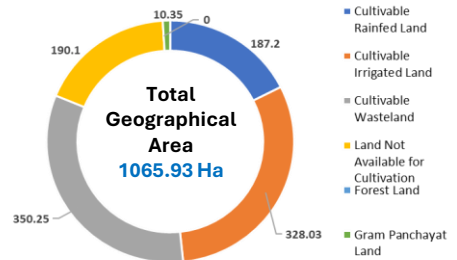
PROGRAM APPROACH

The Program integrates community-led and owned participatory watershed planning, soil and water conservation, climate-resilient agriculture, and livelihoods generation to create sustainable environmental and socio-economic impact. It strengthens local institutions to promote long-term stewardship of natural resources for rural resilience.

Taratgaon Watershed Project Area

S. No.	Particulars	Details
1	Name of the Watershed	Taratgaon
2	Name of Panchayat	Taratgaon
3	Block	Karmala
4	District	Solapur
5	Watershed Code	4D7I1s4
6	Latitude	18°29'75"N to 18°31'74"N
7	Longitude	75°15'75"E to 75°18'77"E

Land Distribution in Taratgaon, Ha



NABARD
NABARD Bhuvan

Enter City or Lat/Long/xyz channel or ID

Data-Provider

Welcome mh_sol_tar_pfa_wdf

Logout
nrsc
Indian Geo-Platform of ISRO

Tools | Bhuvan Store | Home

NABARD Watersheds

Watershed

Watershed on Bhu...

Programme

WDF_RSC(Waters...

State

MAHARASHTRA

District

SOLAPUR

Watershed / Cluster

Taratgaon

Photograph Upload Status

Satellite Data

Geographical/Physical Statistics

Summary of Watersheds

Last Updated on 19 Nov 2025 09:45:02

Photograph Upload Status

State Name	District Name	Watershed Name	Yet to be Moderated	No of photos accepted	No of photos rejected	Total No of Photos
MAHARASHTRA	SOLAPUR	Taratgaon	566	0	0	566
Total			566	0	0	566

Export to XLSX!

Community Participation

Strengthening local ownership through VWCs, SHGs, Panchayats, and farmer groups.

Soil & Water Conservation

Using CCTs, WATs, bunding, recharge ponds to conserve water & improve soil moisture.

Climate-Resilient Agriculture

Promoting drip irrigation, organic farming, crop diversification, and climate-resilient practices.

Livelihood Enhancement

Supporting agriculture, livestock, and poultry through training, demonstrations, and shared resources.

Convergence & Sustainability

Ensuring long-term impact through convergence, monitoring, and community stewardship.

CAPACITY BUILDING PHASE

Pre-CBP (Pre-Capacity Building Phase) is an important component of NABARD watershed projects because it helps prepare the community before the actual implementation of watershed activities begins. The main purpose of Pre-CBP is to build awareness, participation, and ownership among villagers for successful project execution.

Pre CBP Sharamdan Period:- 14/01/2023 to 19/01/2023

Total Number of Families in Watershed:- 132

Landless & Single Parents Families: 19

Number of Eligible Families: 113



Sr.no	Shramadan Period	Proposed land Use	Gat .No	Specific Activities	Treated Area (Ha)	Attendance		Outputs Cum / Nos	Unit Rate Rs	Volume of work done Rs
						Nos	%			
1	14.01.2023 to 15.01.2023	AF	46, 50/1	CCT	1.2	75	66.37%	64.64	147.2	9515
2	14.01.2023 to 15.01.2023	AF	48	FB	1	75	66.37%	125.58	105.22	13214
3	17.01.2023 to 19.01.2023	AF	49,50	LBS		95	84.07%	8	As per MB	51912
4	17.01.2023 to 19.01.2023	AF	48	Desilting	0.2	97	85.84%	232.6	147.2	34239
Total Contribution Rs										108879
Percentage of Contribution (%)										106.3

SOIL AND WATER CONSERVATION MEASURES

- 11,584 cubic meters of water storage potential
- 2802.90 cum of farm bunding completed, generating 1092 work-days and covering 78.51 hectares (ha)
- 1079.27 cum of CCT work completed, covering 83.91 ha
- 5141 cum of WAT work completed, covering 83.11 ha
- 2562 cum of DOHA Model work completed, covering 9 ha

Farm Bunds



CCTs



WATs



Doha Model



Benefited 20 open wells and 30 borewells, ensuring improved irrigation access, enhanced crop productivity, and greater farmer resilience against water scarcity.

FARM BUNDING

Farm bunding work of 2802.90 cum was completed under the watershed project to reduce soil erosion and improve moisture retention in agricultural fields. The activity helped conserve rainwater, enhance soil fertility, and improve agricultural productivity across 78.51 hectares of land. A total of 1092 man-days of employment were generated during the implementation of the work.

- Physical work or volume of earthwork completed: 2802.90 cum
- Total work-days generated: 1092 days
- Area covered: 78.51 Ha



Benefit:

- Reduced soil erosion and improved moisture conservation in agricultural fields.
- Enhanced groundwater recharge and soil fertility in the treated area.
- Improved agricultural productivity and supported sustainable farming practices.

CONTINUOUS CONTOUR TRENCHES

A total of 1079.27 cum of Continuous Contour Trench (CCT) work has been established, covering an area of 83.91 hectares. The trenches were developed along hill slopes to reduce surface runoff, control soil erosion, and improve rainwater infiltration into the soil. The intervention also supported groundwater recharge and promoted vegetation growth in the area.

- Physical work or volume of earthwork completed: 1079.27 cum
- Area covered: 83.91 Ha



Benefit:

- Reduced soil erosion and improved moisture conservation in agricultural fields.
- Enhanced groundwater recharge and soil fertility in the treated area.
- Improved agricultural productivity and supported sustainable farming practices.

LOOSE BOULDER STRUCTURES

A total of **9** Loose Boulder Structures were completed under the watershed project to reduce the velocity of runoff water and control soil erosion in drainage channels. These structures help in slowing down water flow, allowing more water to percolate into the ground and improving groundwater recharge. The intervention also supports moisture conservation and reduces land degradation in the surrounding area.



Benefit:

- Reduced the velocity of runoff water & minimized soil erosion in drainage channels.
- Improved groundwater recharge through enhanced water percolation.
- Supported soil moisture conservation and reduced land degradation.
- Contributed to sustainable water and soil conservation in the watershed area.

WATER ADSORPTION TRENCHES (WATs)

A total earthwork volume of 5141 cum was completed under Water Absorption Trench (WAT) activities, covering an area of 83.11 hectares. The trenches were developed to reduce surface runoff, enhance rainwater infiltration, and improve groundwater recharge in the watershed area. The intervention also helped in soil moisture conservation and supported vegetation growth in the treated area.

- Physical work or volume of earthwork completed: 5141 cum
- Area covered: 83.11 Ha



Benefit:

- Improved groundwater recharge and soil moisture conservation.
- Reduced surface runoff and soil erosion in the project area.
- Enhanced vegetation growth and ecological stability in treated lands.
- Supported sustainable soil and water conservation practices.

SOIL AND WATER CONSERVATION MEASURES

- 13 Recharge Ponds completed. 9 Loose Boulder Structures constructed
- 350 kg of Stylo-Hamata grass seeding across 250 hectares

Recharge Ponds



Loose Boulders



Grass Seeding - Stylo Hamata



Grass Seeding reduces soil erosion, slows runoff, improves water infiltration, and strengthens soil moisture retention for long-term productivity. Recharge Ponds collect rainwater runoff, recharge groundwater, improve nearby well and borewell water levels, and support irrigation during dry periods.

RECHARGE POND

A total of 13 recharge ponds were developed under the watershed project with a combined actual storage volume of 4369.40 cum. The ponds were constructed to enhance rainwater harvesting, improve groundwater recharge, and increase water availability for agriculture and the surrounding areas.

- Number of ponds created: 13
- Total volume created: 9197 cum



Benefit:

- Improved rainwater storage and groundwater recharge in the project area.
- Enhanced water availability for agricultural activities and surrounding communities.
- Supported soil moisture conservation and improved crop sustainability.
- Contributed to sustainable water resource management and drought resilience.

DOHA MODEL

A total earthwork volume of 2562 cum was completed under the Doha Model intervention, covering an area of 9 hectares. The intervention was undertaken to enhance rainwater harvesting, improve groundwater recharge, and conserve soil moisture in agricultural fields. The structure also supports sustainable water availability and helps in improving the overall ecological condition of the project area. Physical work or volume of earthwork completed: 2562 cum
Area covered: 9 Ha



Benefit:

- Improved rainwater harvesting and groundwater recharge in the project area.
- Enhanced soil moisture conservation for agricultural activities.
- Supported sustainable water availability for farming and surrounding communities.
- Contributed to the improvement of the ecological condition and natural resource.

SOIL AND WATER CONSERVATION MEASURES

Soil and Water Conservation works have a significant positive impact on groundwater recharge and improve groundwater levels. Previously, dry wells were recharged after two months of rainfall, but now they are recharged within one week of the first rainfall. Field observations confirmed that water availability increased by 3 months due to project work. Irrigation wells observed water availability till June.

Post Conservation Impact



Groundwater Results from Monthly Well Inventory

BEFORE



AFTER



After the first Rain



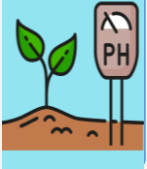
After two months



SMART AGRICULTURE



Automatic Weather Station: AWS was installed under the watershed project to record weather parameters such as rainfall, temperature, and humidity. The system helps in monitoring local climatic conditions and supports better planning of agricultural and watershed activities.



Soil Testing and Issuing Soil Health Card: Soil testing was carried out to assess soil quality and nutrient status of agricultural lands. Based on the test results, Soil Health Cards were issued to farmers to promote balanced fertilizer use and improve crop productivity.



Climate Resilient Varietal Demonstration: Climate Resilient Varietal Demonstrations were conducted to promote drought-tolerant and climate-resilient crop varieties among farmers. The activity supported improved agricultural productivity and climate-resilient farming practices in the area.



Intercropping Demonstration: Intercropping demonstrations were conducted under the watershed project to promote efficient use of land and water resources. The activity helped farmers adopt sustainable farming practices, improve soil health, and enhance crop productivity and income.



Crop Rotation Demonstration: Crop Rotation Demonstrations were conducted to promote sustainable agricultural practices and improve soil fertility. The activity encouraged farmers to adopt suitable crop sequences for better productivity, soil health, and efficient nutrient management.



Pheromone Lure Trap /Yellow sticky trap distribution: Pheromone lure traps and yellow sticky traps were distributed to farmers for pest management. The activity helped in controlling insect pests, reducing crop damage, and promoting sustainable agricultural practices.

CLIMATE-RESILIENT AGRICULTURE

Summer ploughing across 48 acres, benefitting 48 farmers



136 farmers received Soil Health Cards after soil testing



Green Fodder (Napier 5G) demonstration conducted for 25 farmers



Benefit:

- Improved awareness among farmers in soil nutrient management and soil health.
- Encouraged need-based fertilizer application, reducing excessive input use.
- Enhanced soil fertility & crop productivity by scientific soil management practices.
- Promoted sustainable agricultural practices & improved farm productivity.

CLIMATE-RESILIENT AGRICULTURE

Intercropping Demonstration of Black Gram and Pigeon Pea across 73 farmer fields, promoting sustainable mixed cropping practices.



Demonstration of Broad Bed and Furrow (BBF) cultivation in Black Gram + Pigeon Pea intercropping system, covering a total of 45 farmers.



Field observations showed these varieties are well-suited to local conditions, improving adaptability, resilience, and productivity, with crop yields increasing by 20% in the project area.

CLIMATE-RESILIENT AGRICULTURE

Varietal Demonstration of Maize – Rashi 3499 variety promoted across 28 farmers' fields, benefitting 9 farmers across 9 acres of land



Promotion of a Crop Rotation Demonstration with the Maize Rashi 3499 variety, benefitting 21 farmers



GRASS SEEDING – STYLO HAMATA

Grass seeding using Stylo Hamata was carried out over an area of 250 hectares. A total of 350 kg of grass seeds were sown on Continuous Contour Trenches (CCT), Water Absorption Trenches (WAT), and Farm Bunds (FB) to promote soil conservation and moisture retention. The activity helped in reducing soil erosion, improving vegetative cover, and enhancing fodder availability in the project area.

Area covered: 250 HA

Grass seeding: 350 kg on CCT, WAT, and FB



Benefit:

- Reduced soil erosion and improved moisture retention in treated areas.
- Enhanced vegetative cover and ecological restoration in the watershed area.
- Improved availability of green fodder for livestock.
- Strengthened long-term soil and water conservation efforts in the project area.

SUMMER PLOUGHING

Summer ploughing is a deep tillage technique performed across slopes during hot summer months to open the soil crust, kill weeds, and destroy pests/disease spores by exposing them to high temperatures. This practice improves water infiltration, conserves moisture for the upcoming monsoon, and can increase kharif yields.

- Area covered: 48 Ha
- Farmers benefited: 48



Benefit:

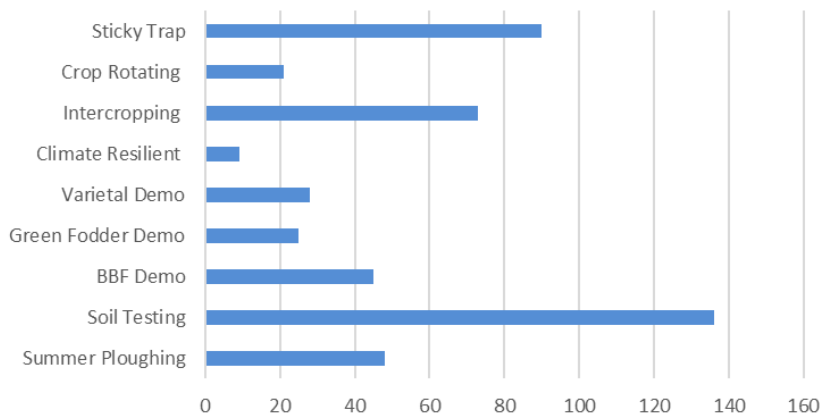
- Improved soil moisture conservation and rainwater infiltration in agricultural fields.
- Reduced weeds, pests, and disease incidence in crops.
- Enhanced soil condition for kharif cultivation and improved crop productivity.
- Promoted sustainable soil and water conservation practices in the project area.

CLIMATE-RESILIENT AGRICULTURE

Integrated Pest Management: Pheromone Lure Traps/Yellow Sticky Traps distributed for eco-friendly pest management, covering 90 farmers.



475 Beneficiaries to Crop Demonstration



The introduction of sticky traps and solar insect light traps has significantly reduced pest infestation in the project area, enabling farmers to reduce pesticide spraying by 1-2 applications per cropping season. This has lowered cultivation costs, promoted eco-friendly pest management practices, improved crop health, and created safer agricultural conditions for both farmers and the environment.

SUSTAINABLE AGRICULTURE PRACTICES

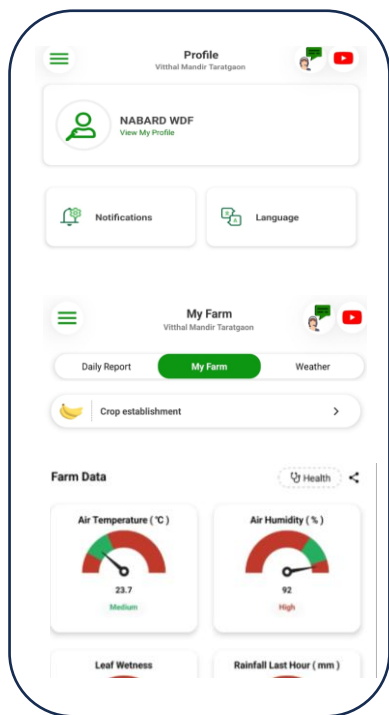
Agriculture today faces increasing challenges from climate change, limited resources, and market uncertainties. This initiative combines technology, improved farming practices, and community participation to promote climate-resilient agriculture, strengthen livelihoods, and improve food security for smallholder farmers.

Automatic Weather Station

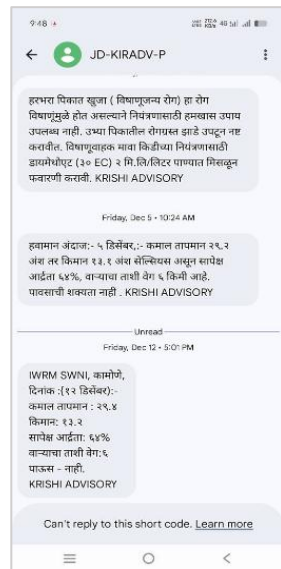
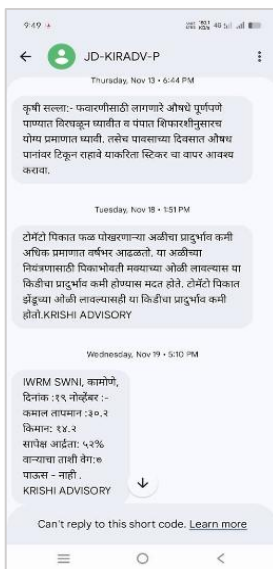


Automated Weather Station installed at the Village Temple

Weather is the most critical factor in agriculture, yet farmers have often relied on guesswork. **Automated Weather Stations** provide hyperlocal, real-time data, enabling informed decisions and shifting farming from reactive to data-driven management.



AWS provides Weather & Crop Advisory to 400 Farmers.



LIVELIHOOD AND WOMEN EMPOWERMENT

Improved farming operations through SHG exposure visits, Mahila Melava meetings, common equipment centers, and provision of agricultural equipment provide farmers and Self Help Group women with access to shared agricultural machinery. This has helped improve livelihoods, reduce labor costs, and support community-based farming services.

SHG Women's Exposure Visit at Ghodegaon, Pune, Maharashtra

An exposure visit to Ghodegaon village, Pune, was organized for SHG women members to enhance learning and knowledge sharing, with **76 women** participating.



Common Equipment Center: 5 seeder machines provided through the Center to support timely and efficient sowing operations. Machine usage records are regularly maintained, and the equipment is made available to farmers at a nominal charge of ₹100 per farmer per day.



Name of the Implementor - Seeder Machine				Village - Taluk		
S.No.	Name of Farmer	Equipment / Date of Use	Amount	Area (ha)	Time charged	Use of seed
Seeder Machine						
1	श्री. राजेश. शिंदे	1	10/01/2025	0.40	100/-	100%
2	श्री. राजेश. शिंदे	2	10/01/2025	0.40	100/-	100%
3	श्री. राजेश. शिंदे	3	10/01/2025	0.40	100/-	100%
4	श्री. राजेश. शिंदे	4	10/01/2025	0.40	100/-	100%
5	श्री. राजेश. शिंदे	5	10/01/2025	0.40	100/-	100%
6	श्री. राजेश. शिंदे	6	10/01/2025	0.40	100/-	100%
7	श्री. राजेश. शिंदे	7	10/01/2025	0.40	100/-	100%
8	श्री. राजेश. शिंदे	8	10/01/2025	0.40	100/-	100%
9	श्री. राजेश. शिंदे	9	10/01/2025	0.40	100/-	100%
10	श्री. राजेश. शिंदे	10	10/01/2025	0.40	100/-	100%
11	श्री. राजेश. शिंदे	11	10/01/2025	0.40	100/-	100%
12	श्री. राजेश. शिंदे	12	10/01/2025	0.40	100/-	100%
13	श्री. राजेश. शिंदे	13	10/01/2025	0.40	100/-	100%
14	श्री. राजेश. शिंदे	14	10/01/2025	0.40	100/-	100%
15	श्री. राजेश. शिंदे	15	10/01/2025	0.40	100/-	100%



LIVELIHOOD AND WOMEN EMPOWERMENT

Mahila Melawa meetings organized to promote women's participation, awareness, and community engagement, with a total of **112 women participating**



Formation of Sayyukta Mahila Samiti:

Sayyukta Mahila Samiti formed to strengthen women's collective participation, leadership, and community-based development activities. The committee encourages women to actively engage in livelihood initiatives, decision-making processes, and social development programs. It also serves as a platform for knowledge sharing, mutual support, and community empowerment.

A large sheet of paper with handwritten text in Kannada. The text is organized into columns and rows, resembling a list or a table. The handwriting is in black ink on white paper. The text appears to be a list of names and addresses, possibly for the Sayyukta Mahila Samiti.

CAPACITY-BUILDING

The Village Watershed Committee meetings were conducted on a monthly basis to ensure the smooth implementation and monitoring of watershed activities. These meetings mainly focused on reviewing the progress of ongoing works, discussing and planning new activities according to the available funds, and verifying bills for the reimbursement process. The meetings also provided a platform for collective decision-making and effective coordination among committee members.



FIP MONITORING VISITS

Full Implementation Phase (FIP) monitoring and inspection by DDM Solapur and the Regional Office teams to monitor project progress.

1st FIP Monitoring Visit by DDM, Solapur



2nd FIP Monitoring Visit by DDM, Solapur



FIP MONITORING VISITS

3rd FIP Monitoring Visit by NABARD RO



4th FIP Monitoring Visit by DDM, Solapur



SUCCESS STORY

Reviving Water Security – The Impact of the DOHA Model and Recharge Ponds in the Taratgaon Watershed Project

Background

Taratgaon village, located in a drought-prone area with black coarse soil, has long faced severe water scarcity due to low water retention, erratic rainfall, and frequent dry spells. Farming depended mainly on rainfall, leading to low crop productivity, dry wells, drinking water shortages, and increasing migration during summer months.



Dried Waterbody during February

The Challenge

- Declining groundwater and dry wells
- Crop losses due to lack of irrigation
- Dependence on tanker water
- Rain-fed seasonal farming
- Increasing migration and water runoff



Dried Well during February

The Intervention

Under the Taratgaon Watershed Project, a major water conservation initiative was implemented through the construction of the **Doha Model** and **Recharge Ponds** to improve groundwater recharge and strengthen water security in the village.



The **Doha Model** involved widening and deepening streambeds, along with creating shallow trenches and bunds across drainage lines. These structures slowed down surface runoff, increased rainwater infiltration, and improved soil moisture retention.

Recharge Ponds were also constructed at critical locations to capture excess rainwater and allow it to percolate gradually into underground aquifers. These interventions were strategically designed to suit the local hydrological and soil conditions.

SUCCESS STORY

Reviving Water Security – The Impact of the DOHA Model and Recharge Ponds in the Taratgaon Watershed Project

Impact

- **2.56 million liters** of water storage capacity created
- **500 hectares** of agricultural land benefited through improved irrigation potential
- **Increased groundwater levels** revived wells and borewells
- **Improved soil moisture retention** reduced irrigation frequency
- **Multiple cropping practices** adopted with better crop productivity
- **Reduced irrigation costs** and dependence on tanker water
- **Less time spent by women** fetching water, improving household well-being
- **Reduced migration** due to more reliable and sustainable farming livelihoods

Community Voices

“Earlier, our wells would run dry by mid-February. This year, thanks to the DOHA work, we had enough water till April. I could grow an additional crop after years.”

Mr. Kantilal Kisan Jadhav
Local Farmer

“Earlier, we used to pray for rain. Even when it rained, the water just flowed away. After the DOHA trenches and Recharge Pond were dug, we saw water staying longer in the soil. My well has water even in May — something we hadn’t seen in a decade.”

Mr. Bhausahab Patil
Local Farmer

Conclusion

The Doha Model and Recharge Pond interventions in Taratgaon demonstrate how scientifically planned watershed activities can restore water security and improve rural livelihoods.

By conserving rainwater and enhancing groundwater recharge, the project transformed a water-stressed village into a more resilient agricultural community. The initiative stands as a successful example of climate-resilient watershed development and sustainable natural resource management.



IMPACT



475 Farmers Benefited

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



Soil and Water Conservation

300 Hectares
Land treated for Soil and
Water Conservation



Assured Irrigation Coverage

100 Hectares
Agricultural land
Both Seasons:
Kharif & Rabi (8% increase
in Rabi crop cultivation)



2.56 Million Liters

water storage created
through Doha Model
interventions



Groundwater Recharge Improved

- 13 Recharge Ponds
- 2562 cum Doha work
- 5141 cum WATs
- 1079 cum CCTs
- 9 Loose Boulder Structures
- 78.51 ha Farm Bunding
- 250 ha of grass seeding



40+

rainwater harvesting
structures created –
through irrigation-based
interventions





Summer Ploughing, Taratgaon, Solapur, Maharashtra



SHG Women Exposure Visits, Solapur, Maharashtra



NABARD Monitoring Visits, Solapur, Maharashtra

VASUNDHARA CORE PRINCIPLES

1 CLIMATE-RESILIENT WATERSHED DEVELOPMENT

Soil and water conservation through watershed treatments, groundwater recharge, and climate-resilient farming interventions

2 COMMUNITY-LED NATURAL RESOURCE MANAGEMENT

Strengthening community participation through VWC meetings, Self-Help Group women, maintenance funds, and farmer-led watershed activities

3 CAPACITY BUILDING & WOMEN EMPOWERMENT

Building climate literacy, livelihood skills, leadership, and agricultural capacities among farmers, youth, and women

4 CONVERGENCE & SUSTAINABILITY

Builds long-term sustainability with scheme convergence, technical expertise, and long-term watershed management.