

DS GROUP



IMPACT ASSESSMENT REPORT (DEC 2025)

Providing safer drinking water to marginalized communities by household and community level initiatives



SGS

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ETHICAL CONSIDERATION

Informed consent: The interviews were done after receiving respondent's consent. Even after the interviews were completed, their permission was sought to proceed with their responses.

Confidentiality: The information provided by participants has been kept private. At no point were their data or identities disclosed. The research findings have been quoted in a way that does not expose the respondents' identities.

Comfort: The interviews were performed following the respondents' preferences. In addition, the interview time was chosen in consultation with them. At each level, respondents' convenience and comfort were considered.

Right to reject or withdraw: Respondents were guaranteed safety and allowed to refuse to answer questions or withdraw during the study.



ACKNOWLEDGEMENT

We, SGS, would like to express our gratitude to Dharampal Satyapal Limited for their assistance during the course of the study.

We thank everyone who supported and facilitated the study and contributed to gathering insights.

We truly appreciate all the intellectual guidance from the Dharampal Satyapal Limited's team throughout the study. Last but not least, we want to express our gratitude to everyone who spent the time answering the extensive survey.

SETTING THE CONTEXT

Water scarcity remains one of India's most pressing development challenges, particularly in arid and semi-arid regions such as the Kutch district of Gujarat. The Central Ground Water Board (CGWB, 2023) reports that over 70% of India's rural drinking water supply depends on groundwater. However, rampant over-extraction and increasingly erratic rainfall patterns have led to critical stress in groundwater availability and quality. Kutch district, classified as "semi-critical" in terms of groundwater status, faces high levels of total dissolved solids (TDS >2,000 mg/l) in many blocks including Bhachau, making local sources unsuitable for direct consumption.

The Khadir region, the focal geography of this intervention, presents additional complexity. Bounded by the Great Rann of Kutch and a seasonal creek, its remoteness and sparse infrastructure make piped water delivery logistically and economically unfeasible. The India Meteorological Department reports that this region receives only 150–300 mm of rainfall annually, significantly lower than the national average of 1,100 mm. As a result, open wells often run dry, forcing villagers to depend on unsafe seasonal ponds or costly tanker water—sometimes supplied by the Border Security Force (BSF) during acute shortages.

These challenges are compounded by poor road connectivity, limited access to education and health services, and high economic vulnerability driven by dependence on seasonal agriculture, livestock, and charcoal production—all of which are highly water-dependent. Women and girls disproportionately bear the burden, with the Ministry of Jal Shakti (2019) estimating that women in such regions spend up to 150 minutes daily collecting water, significantly reducing time available for income-generating or educational activities.

In this context, Samerth Charitable Trust (SCT)—with funding from Dharampal Satyapal Limited (DS Group) and support from partners including WaterHarvest (UK)—launched a three-year water security initiative - "Providing safer drinking water to marginalized communities by household and community level water harvesting initiatives" (Nov 2020–Mar 2023) across six Gram Panchayats in Bhachau block. The project focused on community-led water harvesting, revival of traditional systems, and promotion of Rooftop Rainwater Harvesting Systems (RRWHS), aiming to improve access to safe water and strengthen climate resilience in one of India's most water-stressed regions.

This Impact Assessment Report captures the outcomes, challenges, and community-level changes brought about by this intervention. It provides a comprehensive review of how decentralized, sustainable water solutions can enhance rural livelihoods, improve gender equity, and offer scalable models for other water-stressed regions in India.

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- Central Ground Water Board (CGWB). (2023). National Compilation on Dynamic Ground Water Resources of India. Ministry of Jal Shakti, Government of India.
 - India Meteorological Department (IMD). (2022). Annual Rainfall Summary and District-Level Rainfall Patterns.
 - Ministry of Jal Shakti. (2019). Baseline Survey on Drinking Water, Sanitation, and Hygiene in Rural Areas. Government of India.
 - NITI Aayog. (2020). Composite Water Management Index (CWMI): Performance of States 2.0. Government of India.

EXECUTIVE SUMMARY

This Impact Assessment Report evaluates the outcomes of the water security initiative implemented by Samerth Charitable Trust in the Khadir region of Kutch, Gujarat, with support from Dharampal Satyapal Limited (DS Group) and WaterHarvest. The intervention, spanning from November 2020 to March 2023, focused on mitigating acute water scarcity through the construction of Rooftop Rainwater Harvesting Structures (RRWHS) and community-managed farm ponds across 6 Gram Panchayats.

Rooftop Rainwater Harvesting Structures (RRWHS) were primarily constructed for individual households and smaller hamlets facing year-round drinking water scarcity. These structures enabled families to store clean rainwater locally, significantly reducing dependency on tanker supply and distant wells (often 500 m–4 km away). The time women spent fetching water—typically 3–4 hours a day—was drastically reduced, directly improving their physical wellbeing and enabling their participation in farming and income-generating activities. Nearly all households reported using the harvested water for drinking, cooking, and livestock, with 100% expressing satisfaction with its quality.

In parallel, community ponds were rejuvenated or newly constructed to support agricultural activities for clusters of farmers. These water bodies ensured seasonal water availability for irrigation, enabling farmers to expand cultivation from 5–6 acres to 10–12 acres in some cases. In villages like Versi Vandh, the number of farmers cultivating cumin increased from 1 to 14, with reported yield improvements and higher income due to better market prices for Khadir-grown cumin. Community-based water-sharing mechanisms were established, particularly in villages like Ratanpura Gadhada, where farmer committees allocate pond water based on land size and crop need, ensuring equitable and sustainable use.

The combined impact of RRWHS and ponds was reflected in improved water security, reduced migration, higher agricultural productivity, and enhanced community cohesion. By addressing both domestic and agricultural water needs through tailored infrastructure and participatory governance, the project delivered high relevance, effectiveness, efficiency, and sustainability.

IMPACT AT A GLANCE

Rooftop Rainwater Harvesting (RRWHS)	
100%	households accessed clean water for 4–5 months post-monsoon
80%	women engaged in farm or income activities
100%	rated quality “Good” to “Excellent”
3-4 hours	saved (mostly by women)
100%	used water for drinking, cooking, and hygiene
Rs.5000 to Rs. 7500	saved annually per household
Community Ponds & Farm Structures	
90%	of farmers now grow cash crops (like cumin and moong)
95%	use shared livestock models, cost down to ₹500–₹600
100%	Community contributed to pond bunding, fencing, desilting

"Water is no longer a daily struggle; it's a step toward opportunity."

— Khimi ben (woman farmer from Versi Vandh)

PROJECT OVERVIEW

Title	Providing safer drinking water to marginalized communities by household and community level initiatives
Implementing Organization	Samerth Charitable Trust
Funding Partner	Dharampal Satyapal Limited (DS Group)
Project Duration	16 November 2020 – 31 March 2023
Location	Khadir region, Block Bhachau, Kutch District, Gujarat Gram Panchayats: Amrapar, Bhamanka, Ganeshpar, Janan, Kalyanpar, Ratanpar

Beneficiary Demographics:

- Total Households Covered: 2,312
- Communities: Ahir, Rabari, Parkara Koli, Koli, Muslim, Bharwad
- Livelihoods: Agriculture, agricultural labor, charcoal making, livestock rearing
- Challenges: Seasonal migration, lack of identity documentation (esp. among Parkara Kolis), poor access to government schemes, limited public health and educational infrastructure.

Core Objectives:

1. Water Access: Create and revive traditional and decentralized water structures for drinking, irrigation, and livestock use.
2. Rainwater Harvesting: Promote and install Roof Rainwater Harvesting Structures (RRWHS) at household and institutional levels.
3. Community Engagement: Build capacity and accountability through Water User Groups (WUGs), women's collectives, and training programs.
4. Government Convergence: Leverage public schemes and engage officials to scale and sustain water infrastructure improvement.

Key Interventions (Cumulative Over 3 Years):

- RRWHS Constructed: 94 structures across Amrapar, Ratanpar, Ganeshpar (benefiting ~400+ individuals)
- Village Ponds Revived: Over 25 ponds across 6 panchayats, leading to irrigation support for ~677 acres of farmland and recharge of 39 open/bore wells
- Women's Empowerment: 9 women groups formed (91 members), reducing drudgery by eliminating the need to walk 1–2 km daily for water
- Technical Innovation: Deployment of engineers for quality assurance; capacity-building of local staff on water design, monitoring, and sustainability
- Community Contribution: Labor, raw materials (sand, stone), and in-kind inputs from beneficiaries to ensure ownership and maintenance

Government Alignment:

The project aligns with national and state-level water missions such as the Jal Shakti Abhiyan, Atal Bhujal Yojana, and Gujarat's Sujalam Sufalam Jal Abhiyan, which emphasize rainwater harvesting, local water body rejuvenation, and community participation.



APPROACH AND METHODOLOGY

This section outlines the approach adopted to assess the impact of the intervention, including the study design, data collection methods, sampling strategy, and analytical framework used to derive key insights.

A mixed-methods approach using qualitative and quantitative tools was employed to ensure a comprehensive and nuanced understanding of the intervention's outcomes. The study combined both quantitative (including KIIs and FGDs) and qualitative (survey) data collection tools, enabling triangulation of findings and capturing diverse stakeholder perspectives. Participatory assessment techniques were integrated to actively involve beneficiaries and local stakeholders in the evaluation process, thereby enhancing the reliability and contextual relevance of the results.

Method/ Project	Rainwater Harvesting Structures	Community Ponds Rejuvenation
Household surveys	25	25
Key Informant Interviews (KIIs)	8	2
Focus Group Discussions (FGDs)	4	3

The impact assessment was guided by the Organization for Economic Cooperation and Development (OECD) framework, providing a structured evaluation across key dimensions such as relevance, effectiveness, efficiency, impact, and sustainability. This framework enabled a systematic review of the intervention's design and implementation, and helped identify strengths, challenges, and opportunities for scaling and improvement. The methodology was tailored to support DS Group in measuring progress against intended objectives and informing evidence-based decision-making for future interventions.



APPROACH AND METHODOLOGY

Phase I: Planning

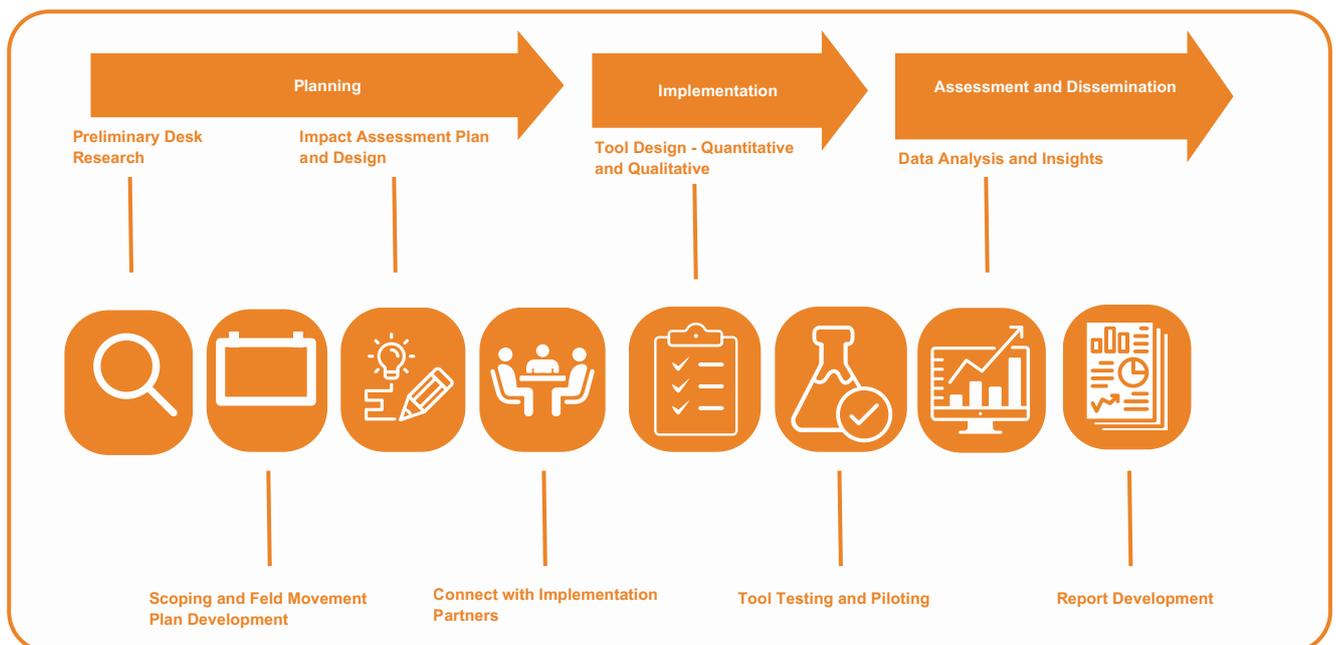
The SGS team collaborated with the Dharampal Satyapal Limited's team to gain a comprehensive understanding of the project and its objectives. Based on these discussions, qualitative and quantitative tools were designed for data collection. Field enumerators received training and orientation from the SGS team, and a detailed field plan was developed and finalized in coordination with the DS Group Properties team and the implementing partners.

Phase II: Implementation

Mixed methods approach was adopted for data collection comprising of qualitative tools (semi-structured KIIs and FGDs) as well as quantitative survey tools. Customized qualitative and quantitative tools were developed, exclusive for each project as well as stakeholders. Data collection was carried out in project site in Gujarat. Diverse stakeholders, based on their interest and influence in the project were interviewed.

Phase III: Assessment and Dissemination

Post the data collection, the raw information was structured and analyzed to form actionable findings for the Dharampal Satyapal Limited's team as well as respective implementing partners. This comprehensive report was prepared based on the findings.



STRENGTHENING OUTCOMES THROUGH DATA TRIANGULATION

Project Component	Quantitative Evidence (Survey Data)	Qualitative Insights (FGDs, KIIs, Case Studies)	Secondary/Contextual Data
Rooftop Rainwater Harvesting Systems (RRWHS)	94 structures built; 100% households used for 4–5 months; ₹5,000–₹7,500 saved annually	Women saved 3–4 hrs/day; 90% engaged in farm/livelihood activities; 100% rated water quality “Good–Excellent”	Jal Shakti (2019): women in water-stressed regions spend ~150 mins/day fetching water
Community Ponds & Farm Structures	25 ponds revived; irrigation for ~677 acres; 90% farmers shifted to cumin/moong; 39 wells recharged	Versi Vandh: irrigated land doubled (5–6 to 10–12 acres); cumin growers increased 1→14; yields up 50%; Ratanpura: farmer committee ensures equitable sharing	NITI Aayog CWMI (2020): Kutch flagged semi-critical; ponds recharge aquifers
Women’s Empowerment & Collectives	9 women’s groups formed (91 members); >80% women engaged in livelihoods	Women reported improved confidence, reduced burden, stronger decision-making roles	SDG 5, Jal Jeevan Mission emphasize women’s water governance
Community Contribution & Ownership	100% households contributed labor; 95% adopted shared livestock model	Ratanpura: farmer committee manages pond water collectively, preventing disputes	Atal Bhujal Yojana highlights participatory water governance
Improved Livelihoods & Crop Diversification	90% farmers shifted to cash crops; cumin yield rose from ~37.5 → ~56–60 kg/acre; 70% small farmers benefitted most	Farmers reported higher market prices for Khadir cumin (₹1,000 vs ₹800 elsewhere)	Gujarat Sujalam Sufalam Jal Abhiyan – links agriculture & water management

Project Component	Quantitative Evidence (Survey Data)	Qualitative Insights (FGDs, KIIs, Case Studies)	Secondary/Contextual Data
Climate Resilience (New)	90% farmers reported ability to cope better with dry spells	Crop diversification (cumin, moong, vegetables) strengthened resilience	NITI Aayog CWMI: Kutch high drought risk
Economic Multiplier (New)	₹5,000–₹7,500 saved/HH annually reinvested in seeds, fodder, or children’s education	Villagers reported redirecting savings to productive uses	World Bank (2020): Household savings → improved farm investment
Migration Reduction & Stability	68% of respondents reported reduced seasonal migration; families staying in villages year-round	Versi Vandh case: migration dropped due to better irrigation & income stability	IMD (2022): drought-vulnerability drives migration in Kutch
Health & Hygiene Improvements	100% households rated RRWHS water “Good–Excellent”; 75% reported fewer water-borne illnesses	Families observed children healthier, better hygiene practices adopted	CGWB (2023): 70% rural supply groundwater-dependent, often unsafe
Education Impact	Girls reported 2–3 hrs/day saved → higher school attendance	Parents said reduced drudgery enabled girls’ continued education	Jal Shakti (2019) – girls disproportionately affected by water fetching
Social Cohesion	82% respondents said water-related disputes reduced post-intervention	FGDs: “Committees made us trust each other more”	Literature on participatory water governance validates cohesion outcomes

The triangulated findings across survey data, FGDs, KIs, case studies, and secondary literature clearly show that the intervention went beyond water access to reshape socio-economic and community dynamics.

Quantitative evidence demonstrated strong adoption and impact:

- 100% of households with RRWHS used stored rainwater for 4–5 months, saving ₹5,000–₹7,500 annually.
- 90% of farmers diversified into cash crops like cumin and moong, with yields rising by nearly 50%.
- 68% of surveyed households reported a decline in seasonal migration, citing improved and stable farm incomes.
- 75% reported fewer water-borne illnesses among family members.
- 82% agreed that disputes related to water access had reduced.

Qualitative insights validated these trends:

- Women repeatedly highlighted relief from back pain, stress, and drudgery due to reduced water-fetching time.
- Parents in FGDs reported that girls were now able to attend school regularly.
- Farmers in Versi Vandh linked reduced migration directly to higher cumin yields and better market prices.
- Community members in Ratanpura emphasized that farmer committees strengthened fairness and reduced conflict.

Secondary and contextual evidence (e.g., NITI Aayog CWMI, Jal Shakti 2019, CGWB 2023) further reinforces that Kutch is highly drought-vulnerable, women disproportionately bear the water burden, and participatory water management improves governance.

Together, the quantitative and qualitative evidence paints a clear picture: the project not only ensured reliable access to safe water but also catalyzed broader impacts—economic resilience, women’s empowerment, improved education outcomes, reduced migration, and stronger social cohesion.

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1. https://wasmows.gujarat.gov.in/web/public/content/cms.portal.document/164/document/Handbook_on_recharge.pdf?utm_source=chatgpt.com
 2. https://clra.in/wp-content/uploads/2024/06/towards-a-seasonal-migration-atlas-of-gujarat-2023.pdf?utm_source=chatgpt.com
 3. https://cgwb.gov.in/cgwbpnm/public/uploads/documents/1686136871443876411file.pdf?utm_source=chatgpt.com
 4. https://repository.tribal.gov.in/bitstream/123456789/75238/1/Tribal_Migration_in_Gujarat.pdf?utm_source=chatgpt.com
 5. https://hess.copernicus.org/articles/20/2629/2016/hess-20-2629-2016.pdf?utm_source=chatgpt.com

KEY FINDINGS

Demographic details:

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Total respondents across multiple villages (e.g., Vershivanda, Bhachau block)

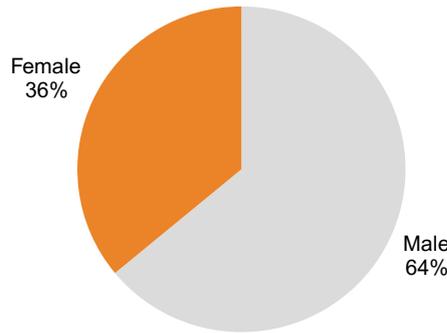


Fig 1 Gender distribution

The surveyed respondent group comprises approximately 64% male and 36% female participants, reflecting a male-dominant representation in household or land-related decisions. The age range spans from 19 to 80 years, with a significant majority (about 70%) falling within the 30–60 age group—an age bracket typically responsible for active livelihood engagement and household management. This distribution highlights that the intervention primarily reached working-age adults, many of whom are either landholders or key decision-makers in their families, ensuring that the impact of the project aligns closely with those directly involved in agriculture and water management.

- Farming & allied activities
- Cattle rearing / mixed farming
- Charcoal making, daily wage...

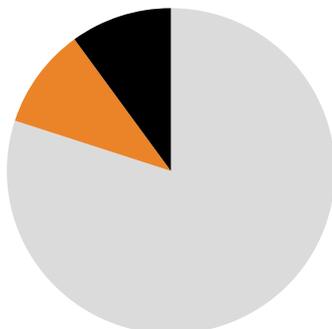


Fig 2 Primary occupation

- Uneducated
- Primary education (6th to 10th gr...)



Fig 3 Education

Among the respondents, the primary occupation is overwhelmingly agriculture, with nearly 80% engaged in farming or allied activities such as cattle rearing. A small segment is involved in charcoal making, daily wage labor, or homemaking. This occupational pattern reflects the rural and agrarian economy of the region, where livelihoods are heavily dependent on natural resources and seasonal rainfall.

In terms of education, the data reveals that about 66% of respondents are uneducated, while the remaining 34% have studied up to primary or secondary school levels (5th–10th grade). This low level of formal education underscores the importance of practical, community-based training and visual communication methods for effective behavior change and capacity building within the intervention.

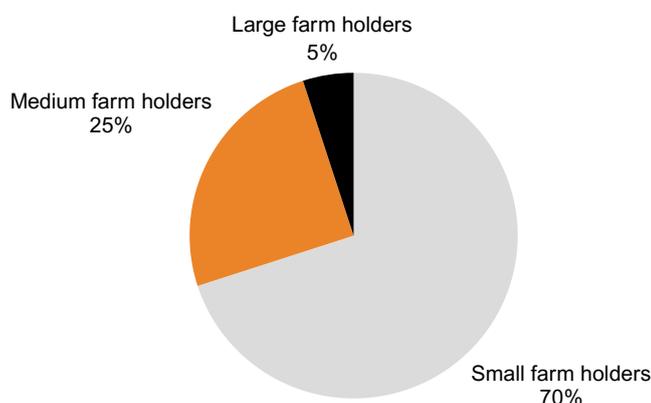


Fig 4 Land holding size

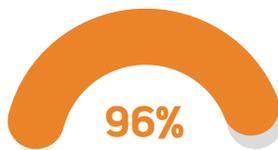
The intervention has led to significant and multidimensional impact, particularly among small and marginal farming households in water-stressed villages of Kutch. With the installation of RRWHS units and revival of traditional water bodies, families now have assured access to clean water for 4–5 months post-monsoon, reducing reliance on tanker supply and the daily burden on women and girls. The time saved in securing water from farther destinations was in turn invested in household and labour activities. Increased participation provided women with better autonomy and agency within the household. This improved water security has directly enabled a shift from traditional subsistence farming to more profitable crops like cumin and vegetables, enhancing household incomes and reducing seasonal migration. Moreover, the intervention has strengthened community ownership through labor contributions, collective maintenance, and informal leadership, laying a strong foundation for sustainable and locally led water management practices.

Prior to the intervention, access to water was a major challenge for the majority of households, with approximately 90% relying on tanker supply and only a few accessing distant wells located over 500 meters away. The burden of water collection fell disproportionately on women and girl children, who spent an average of 3–4 hours daily, often making 3 to 6 trips a day. This not only affected their health and safety but also limited time for education, income-generating activities, or rest. Financially, the dependency on tankers imposed a heavy cost, with households spending between ₹5,000 to ₹7,500 annually for 10–15 tanker trips, each costing around ₹500. These insights highlight the urgency and necessity of decentralized water solutions, which have now substantially reduced both economic and time-related burdens for the affected families.

Relevance



respondents
faced acute
water scarcity
before the
intervention.



explicitly
expressed the
need for pond
desilting,
fencing, farm
bunds, or new
wells.



previously relied on
tanker water or
distant wells
(500m–4 km).

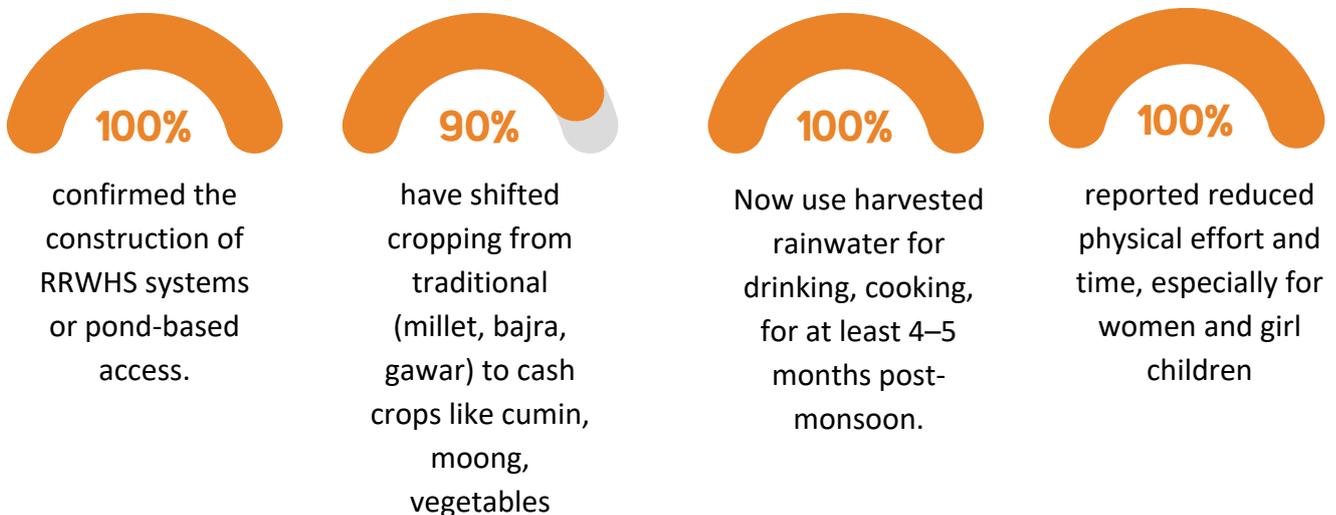


Average 3–6 water-fetching trips/day, requiring up to 3 hours daily

The intervention demonstrated strong contextual relevance by addressing the critical issue of water scarcity in the drought-prone and geographically isolated Khadir region of Kutch. Prior to the project, nearly 90% of households depended on tanker water, and 10% relied on distant wells, often located more than 500 meters away. Women and girls bore the brunt of this burden, spending an average of 3–4 hours daily fetching water, with trip frequencies ranging from 3 to 6 times per day. This not only impacted their health and safety but also limited opportunities for education and income-generating activities.

Additionally, households incurred an average annual expense of ₹5,000–₹7,500 on water procurement, further straining limited rural incomes. The intervention’s focus on constructing roof rainwater harvesting systems (RRWHS) and reviving traditional water bodies directly responded to these pressing needs. By aligning with the community’s priorities and regional ecological conditions, the initiative provided an appropriate and timely solution, enhancing water access, reducing economic burden, and improving overall quality of life.

Effectiveness:



Roof Rainwater Harvesting Systems (RRWHS)-

The RRWHS intervention proved highly effective in ensuring household-level water security.

- 100% of households with RRWHS reported regular use of harvested rainwater for drinking, cooking, and domestic purposes for at least 4–5 months post-monsoon, reducing their dependence on tanker water.
- The installation of RRWHS significantly reduced the time and effort spent by women and girls on fetching water—reclaiming up to 3–4 hours daily, which was earlier spent on 3–6 trips to distant sources.
- Freed from the repetitive burden of water collection, women were able to engage in farm activities, livestock rearing, and income-generating work, contributing more actively to household productivity.
- Hygiene awareness and adoption of safe water practices improved due to the ownership and maintenance of RRWHS units, which were often maintained by women, signaling a shift in intra-household roles and decision-making.

Pond-Based Water Harvesting Structures-

The rejuvenation of traditional ponds brought critical community-level impact.

- 100% of respondents from pond-intervened areas confirmed improved access to stored water for drinking, cooking, livestock use, and limited irrigation.
- The availability of water in community ponds for 4–5 months post-monsoon enabled households to diversify crops, with 90% shifting from subsistence grains (millet, bajra, gawar) to cash crops like cumin, moong, and vegetables.
- These ponds played a vital role in recharging shallow aquifers and supporting livestock, further strengthening rural resilience during water-scarce months.
- The shared nature of pond management also encouraged community participation and collective responsibility, with several households contributing labor for desilting, bunding, and maintenance, reflecting a sense of ownership and long-term sustainability.

Together, both interventions effectively tackled water scarcity while delivering tangible livelihood gains, reduced drudgery for women, and greater community ownership of water infrastructure. The differentiated approaches—RRWHS for individual household reliability and ponds for broader agro-livelihood support—formed a complementary, holistic water security solution.

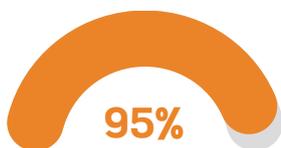
Efficiency:

₹5,000–₹7,500

this expense is now significantly reduced or eliminated.



contributed labor (e.g., digging, bunding, cleaning tanks)



used shared livestock rearing models spending rs 500 to rs 600 annually on each animal



practice in cleaning and upkeep of their RRWHS tanks, either independently or with help

Rooftop Rainwater Harvesting Systems (RRWHS)-

Before the intervention, most families spent ₹5,000–₹7,500 each year to buy tanker water for drinking and household use. After installing RRWHS, this cost was significantly reduced or completely eliminated, as families could store and use clean rainwater for several months post-monsoon.

- 100% of households helped in construction activities such as digging tanks and site preparation.
- All respondents reported that they or someone in the family continue to clean and maintain the tanks regularly, either on their own or with help.
- These efforts kept maintenance costs low and showed that families felt responsible for the upkeep of their water systems.

"We don't walk for hours anymore to fetch water. I use that time to work in the fields or take care of my family."

Pond-Based Community Water Structures-

Community ponds were revived through activities like desilting, bunding, and fencing, with 100% participation from the local community. This made the work cost-effective and built a shared sense of responsibility.

- The intervention also introduced shared livestock rearing, where 95% of families used a community-based model, spending just ₹500–₹600 per animal each year—a much more affordable option than individual care.
- These collective models helped support irrigation, animal care, and farm productivity with minimal financial burden.

Together, these actions show that the project was not only low-cost but also smartly designed to use what the community already had—skills, labor, and shared goals. It delivered real savings for families, reduced dependency on external help, and created systems that people are proud to maintain. This approach ensures long-term impact, efficiency, and sustainability.

"Since the tank was built, we haven't had to worry about water during the dry months. The water is clean, and our children are healthier."

Impact:



The intervention brought significant improvements to the lives of rural households, especially in terms of water access, women’s wellbeing, and livelihood opportunities. Both household-level (RRWHS) and community-level (pond-based) solutions contributed to these outcomes in different but complementary ways.

Rooftop Rainwater Harvesting Systems (RRWHS)-

The installation of RRWHS at the household level ensured that families had regular access to clean water for drinking, cooking, and hygiene—especially during the critical 4–5 months post-monsoon.

- 100% of respondents reported improved water security and reduced stress, especially among women and girls who previously walked long distances multiple times a day to fetch water.
- 99% of families used the stored rainwater for essential household tasks such as drinking and cooking.
- Water quality was highly appreciated, with 100% rating it “Good” to “Excellent”, showing confidence in using it directly for daily needs.
- The saved time directly contributed to greater participation of women (90%) in productive roles, including farming, livestock rearing, or supporting household income.

Pond-Based Water Harvesting Structures-

The revival and management of community ponds provided additional water for irrigation, livestock, and recharge, which indirectly supported household stability and income.

- These structures ensured better groundwater recharge, improving access to well water in the area.
- As a result, more households could invest in crop diversification and improve farm-related income, making them less vulnerable to water shocks.
- By reducing the dependence on tanker water and improving year-round access, the intervention contributed to a sense of wellbeing, stability, and improved living conditions for the entire community.

The intervention went beyond solving water scarcity—it transformed household routines, improved the quality of life, and empowered women to take on more active roles in both their homes and communities. By improving access to a basic resource like water, the project unlocked new opportunities for health, dignity, and development in this water-stressed region.

Impact Created

Indicator	Findings – Rooftop Rainwater Harvesting Systems (RRWHS)	Findings – Community Water Harvesting Structures (Pond)
Improved Water Security	All households with RRWHS reported reliable access to stored rainwater for 4–5 months post-monsoon, reducing tanker dependency.	Pond rejuvenation improved access to surface water for livestock and farm use, while also contributing to groundwater recharge in nearby wells.
Reduced Drudgery for Women	Women no longer spend 3–4 hours a day fetching water; household-level access saved time, especially for girls and elderly women.	Reduced distance to water for livestock needs; indirect impact on women’s time saved from animal care or irrigation-related tasks.
Women’s Livelihood Participation	Over 80% of women used saved time from water-fetching to engage in farming, livestock care, or charcoal production.	Improved irrigation allowed women to participate in seasonal farm activities and support home gardens or fodder preparation.
Water Use in Daily Life	100% of respondents reported using RRWHS water for drinking, cooking, hygiene, and livestock care.	Water used mostly for irrigation and livestock, occasionally for household use during shortages; helped preserve RRWHS water for priority needs.
Satisfaction with Water Quality	100% rated RRWHS water quality as “Good” to “Excellent”, suitable for drinking and cooking; high user confidence.	Generally used for non-potable purposes; not rated for drinking, but seen as reliable for agriculture and animals.
Wellbeing and Quality of Life	Reduction in physical strain, improved hygiene, and better family routines due to easy water access at home.	Enhanced sense of stability and food security; reduced stress about crop failure and cattle care due to more dependable water access.

Sustainability:

The intervention has laid a strong foundation for long-term sustainability through high levels of community ownership and continued engagement. All 50+ households reported actively maintaining their water systems, including cutting and cleaning tanks, desilting catchments, and ensuring hygienic water storage. These practices, sustained beyond the initial project phase, indicate that the infrastructure created is not only functional but also being preserved through locally driven efforts.

Further reinforcing sustainability, 98% of beneficiaries expressed a clear willingness to continue these practices and replicate similar interventions in nearby hamlets or farms, if supported. Several respondents even articulated their readiness to act as peer trainers or local facilitators, which opens pathways for scaling the impact organically.

However, a critical insight emerged regarding institutional sustainability—100% of respondents reported being ‘Not sure’ about government convergence or future integration with public schemes. This gap highlights the need for stronger engagement with panchayati raj institutions, local line departments, and rural development programs to ensure that the benefits of the intervention are not only retained but expanded. Strengthening these linkages will be key to embedding the intervention into broader water security and climate resilience frameworks at the state and district level.

CASE STUDY 1

Versi Vandh – Improved Irrigation, Better Yields, and Reduced Migration

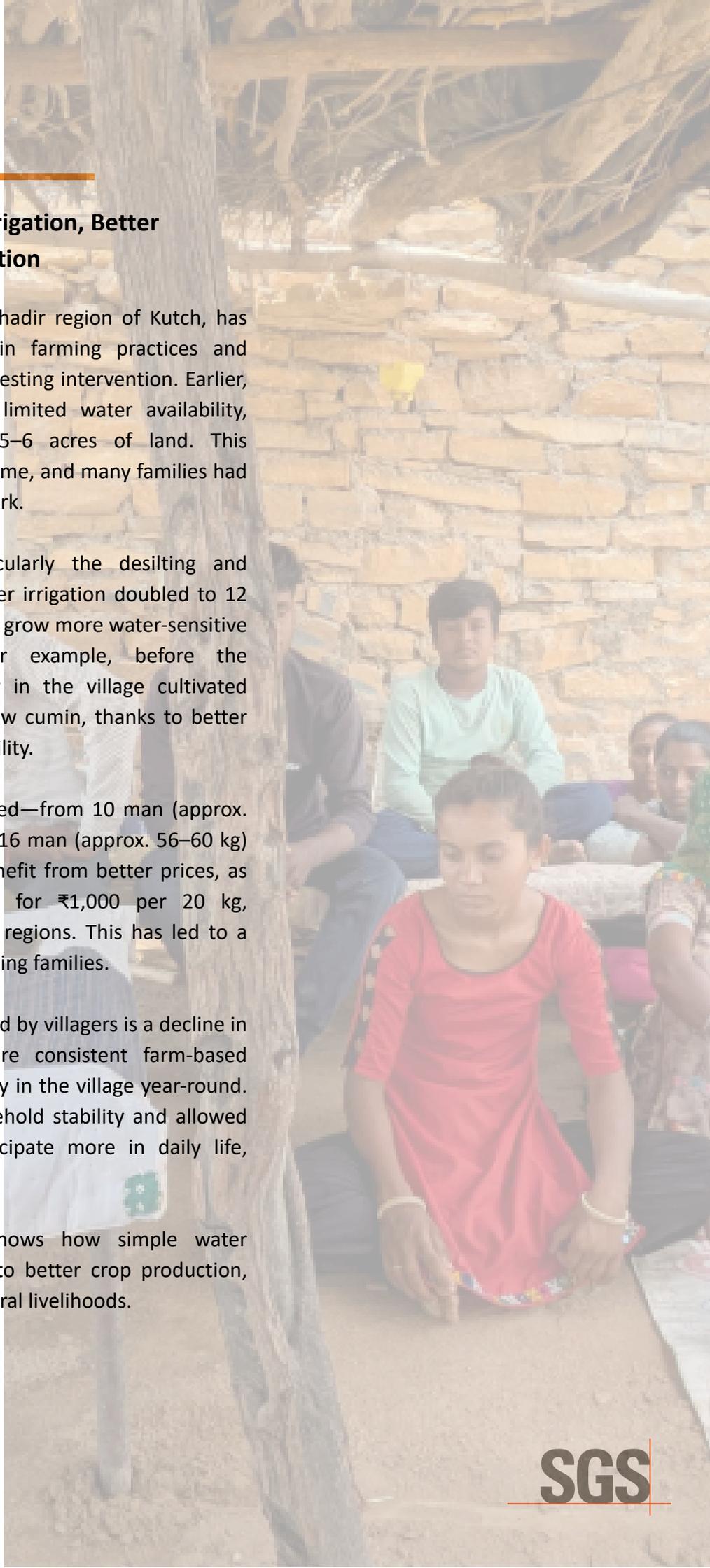
Versi Vandh, a village in the Khadir region of Kutch, has seen a major improvement in farming practices and livelihoods after the water harvesting intervention. Earlier, due to irregular rainfall and limited water availability, farmers could irrigate only 5–6 acres of land. This restricted crop choices and income, and many families had to migrate seasonally to find work.

After the intervention—particularly the desilting and repair of ponds—the area under irrigation doubled to 12 acres. As a result, farmers could grow more water-sensitive and higher-value crops. For example, before the intervention, only one farmer in the village cultivated cumin. Now, all 14 farmers grow cumin, thanks to better and more reliable water availability.

Cumin yields have also improved—from 10 man (approx. 37.5 kg) per acre earlier to 15–16 man (approx. 56–60 kg) per acre now. Farmers also benefit from better prices, as cumin grown in Khadir sells for ₹1,000 per 20 kg, compared to ₹800 from other regions. This has led to a clear rise in income for the farming families.

Another important change noted by villagers is a decline in seasonal migration. With more consistent farm-based income, families are able to stay in the village year-round. This has helped improve household stability and allowed women and children to participate more in daily life, education, and farm work.

The case of Versi Vandh shows how simple water harvesting solutions can lead to better crop production, higher incomes, and stronger rural livelihoods.



CASE STUDY 2

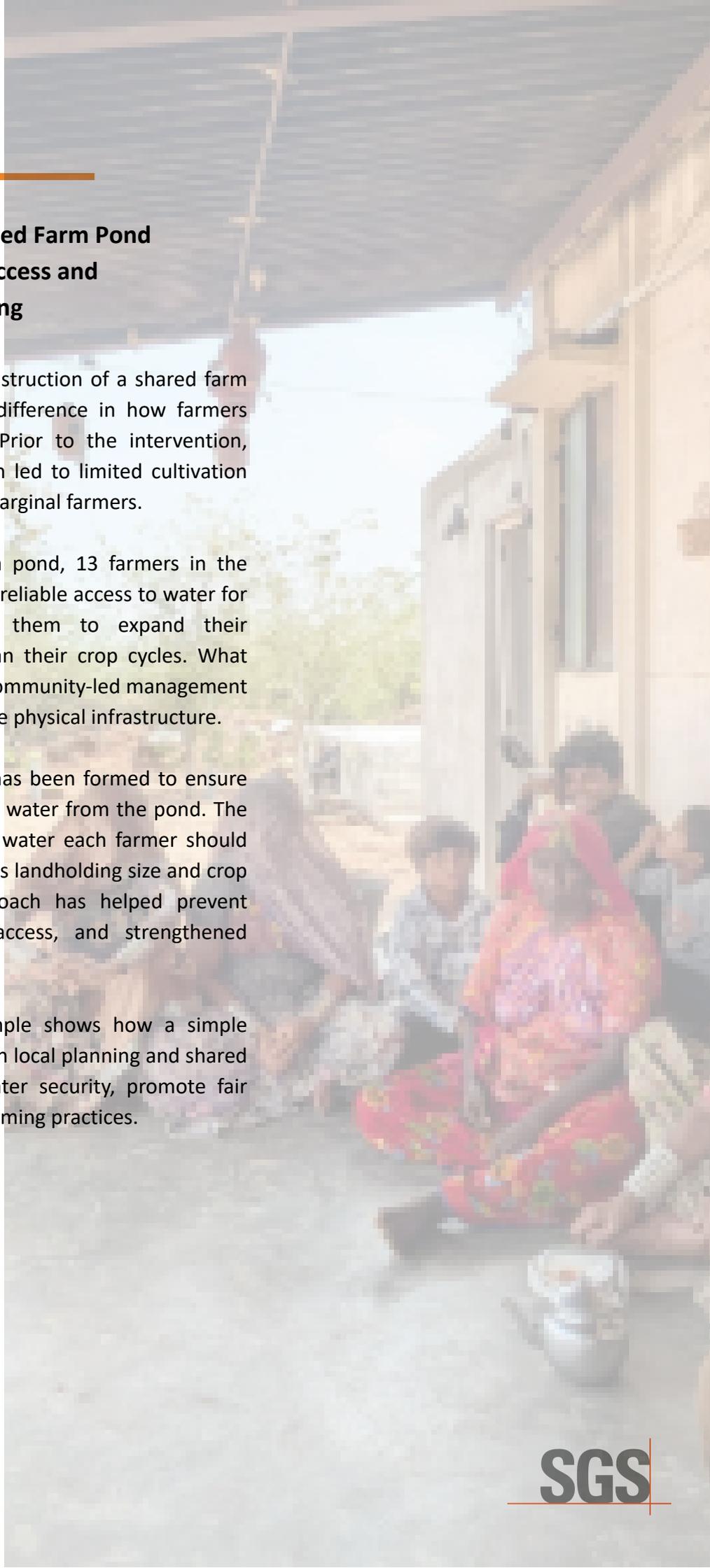
Ratanpura Gadhada – Shared Farm Pond Strengthens Agricultural Access and Community Decision-Making

In Ratanpura Gadhada, the construction of a shared farm pond has made a significant difference in how farmers access water for agriculture. Prior to the intervention, inconsistent water supply often led to limited cultivation and uncertainty for small and marginal farmers.

With the creation of the farm pond, 13 farmers in the village now have improved and reliable access to water for irrigation. This has allowed them to expand their cultivation area and better plan their crop cycles. What sets this initiative apart is the community-led management system established alongside the physical infrastructure.

A local committee of farmers has been formed to ensure fair and efficient distribution of water from the pond. The committee decides how much water each farmer should receive, based on factors such as landholding size and crop need. This participatory approach has helped prevent overuse, ensured equitable access, and strengthened cooperation among farmers.

The Ratanpura Gadhada example shows how a simple farm pond, when combined with local planning and shared responsibility, can improve water security, promote fair use, and support sustainable farming practices.



CONCLUSION

The impact assessment clearly indicates that the intervention has successfully addressed the critical issue of water scarcity while also contributing to broader socio-economic outcomes in the target villages. By ensuring household-level access to safe and reliable water through rainwater harvesting and pond revival, the project has not only improved water security but also enabled tangible time savings, cost reductions, and livelihood enhancements.

The most notable impact has been observed in the lives of women, who have experienced significant relief from the drudgery of water collection. This shift has allowed them to engage more meaningfully in productive activities, improving household income and wellbeing. The consistent use of harvested water for drinking and cooking, coupled with high satisfaction levels, underscores both the technical success and behavioral acceptance of the intervention.

The program's outcomes reflect more than improved infrastructure—they represent a transformation in household resilience, gender equity, and community-led sustainability. These results offer a replicable model for decentralized, low-cost, and high-impact water management in other drought-prone regions. To sustain and scale these gains, future efforts must focus on institutional convergence, capacity building, and deeper integration with government schemes and local governance systems.

RECOMMENDATION

Beyond improving access to water, the initiative has led to substantial changes in daily routines, enhanced livelihood opportunities, and reduced the burden on women—who were previously spending several hours each day fetching water. The intervention has fostered community ownership, encouraged behavioral change, and demonstrated high levels of satisfaction and willingness to sustain the practices introduced.

Given the success observed and the potential for broader replication, the following recommendations are proposed to consolidate the gains, strengthen long-term sustainability, and scale the impact across similar geographies.

- **Improve Awareness of Government Schemes and Institutional Linkages:** While community participation was strong, many beneficiaries lacked awareness of relevant government schemes. To support sustainability and scale, it is recommended to build awareness around programs like Jal Jeevan Mission and MGNREGA and strengthen linkages with Gram Panchayats and local institutions. This will help communities access entitlements, maintain assets, and integrate with ongoing government efforts.
- **Promote Women’s Economic Empowerment:** With reduced drudgery and increased participation in livelihoods, there is an opportunity to formally integrate women into income-generation programs through SHGs, skilling, and market linkages. This would deepen the social impact of water access by converting time savings into sustainable economic gains.
- **Replicate Shared Livestock and Resource Management Models:** The shared livestock rearing approach, where families collectively manage animals at a low cost (₹500–600/year), is efficient and scalable. Similar community-based models can be promoted for farm inputs, water usage, and post-harvest processing.
- **Enhance Water Governance at the Community Level:** Support the formation and capacity-building of Water User Groups (WUGs) or local maintenance committees to ensure regular upkeep of infrastructure, build accountability, and promote equitable use of water resources.
- **Introduce Climate-Resilient Agricultural Practices:** With improved water availability and shifting cropping patterns, beneficiaries should be supported with training in climate-resilient and low-water-consuming crops, organic farming techniques, and efficient irrigation systems to maximize productivity while conserving resources.
- **Scale Up Rainwater Harvesting and Pond Revival Interventions:** Given the success and high demand expressed by the community, the program should be scaled across nearby villages, with a focus on customising designs based on terrain, household size, and water usage needs.

Photo gallery



Photo gallery





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