

# MOBILISING COMMUNITIES TOWARDS A RESILIENT FUTURE

ANNUAL REPORT 2022-23



# ACRONYMS

<b>ARA</b>	Adaptation Research Alliance
<b>CBD</b>	Convention on Biological Diversity
<b>CRA</b>	Climate Resilient Agriculture
<b>CSO</b>	Civil Society Organisations
<b>CSR</b>	Corporate Social Responsibility
<b>EbA</b>	Ecosystem-based Adaptation
<b>ECOBARI</b>	Ecosystem-based Adaptation for Resilient Incomes
<b>FPO</b>	Farmer Producer Organisation
<b>LDN</b>	Land Degradation Neutrality
<b>LST</b>	Land Surface Temperature
<b>MGNREGA</b>	Mahatma Gandhi National Rural Employment Guarantee Act, 2005
<b>NbS</b>	Nature-based Solutions
<b>NGO</b>	Non-Governmental Organisation
<b>NRAA</b>	National Rainfed Area Authority
<b>NWP</b>	National Water Policy
<b>PPCP</b>	Public-Private-Civil Partnership
<b>ROI</b>	Return on Investment
<b>SCI</b>	System of Crop Intensification
<b>SDG</b>	Sustainable Development Goal
<b>SHG</b>	Self-Help Group
<b>TCM</b>	Thousand Cubic Metres
<b>UN</b>	United Nations
<b>VDC</b>	Village Development Committee
<b>W-CReS</b>	WOTR Centre for Resilience Studies
<b>WGS</b>	Water Governance Standard
<b>WOTR</b>	Watershed Organisation Trust
<b>WSD</b>	Watershed Development





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♦ COMMUNITY HEROES ♦

# HARVESTING HOPE

*Indrapal Singh Masharam's  
Revolutionary Journey*



In the parched hilltop village of Chilka in Chhattisgarh, Indrapal Singh Masharam gazed at his arid land. He often wondered if his family was destined for a life of scarcity, toiling on only half of their inherited property, the remaining parched due to an obstinate water crisis. Every evening, Indrapal, his wife Sumitra, and their children Sugriv and Kusum, would huddle around their dinner, sharing tales of their long, demanding days, shadowed by the fear of an unpredictable climate.

However, in the heart of this disheartened farmer, burned a quiet yet resilient flame. Indrapal was a man of perseverance, and as

he looked upon his fellow villagers, equally mired in adversity, he felt a spark of audacious hope. They were all heroes of their own tales, battered but unbowed.

In 2019, the winds of change began to whisper across Chilka. The 'Natural Resource Management through Watershed Development of 8 villages in Korea District of Chhattisgarh' project, launched by HDFC Bank Parivartan and WOTR, introduced a beacon of hope. For Indrapal, the information gathered at the Village Development Committee (VDC) meetings ignited an opportunity, the key to unlock their shared destiny.



His journey from despair to determination began. Rallying his neighbours, Jawahar Singh, Karan Singh, Ramkumar Singh, and Jaykaran Singh, Indrapal proposed the construction of a community well on his own land. The fervour of his ambition moved his comrades, and together they pooled in Rs. 30,000, kickstarting the transformative endeavour.

May 2021 heralded a new era for Chilka. The fruits of their collective labour now stood proudly on Indrapal's farm—an 18 ft. diameter wide well, a monument to their unity and resilience. This well didn't just hold water; it contained the dreams, determination and dignity of an entire community.

The arrival of this community well was nothing short of a revolution. As water began to nourish Indrapal's once-barren land, so did it feed the

*The people speak  
in hushed tones of  
reverence for Indrapal,  
the man who dared to  
dream and led them  
on a path towards a  
sustainable future.*

hopes of 8-10 neighbouring households. The once desolate plots now flourished, cultivating an additional 12-13 acres of land.



Indrapal Singh Masharam's story transformed from one of a struggling farmer to a community hero. He was no longer just Indrapal, the humble farmer; he was a symbol of hope, a beacon of resilience, a visionary who turned adversity into an opportunity for his community.



Indrapal Singh Mahararam, 60-year-old farmer from Chilka Village, Chhattisgarh

Today, Chilka thrives. The people speak in hushed tones of reverence for Indrapal, the man who dared to dream and led them on a path towards a sustainable future. Indrapal's journey is a testament to the power of collective action and the transformative impact of sustainable initiatives, a real-life hero who turned the tide of destiny for his community. His legacy will continue to inspire generations, a beacon of hope in the arid lands, illuminating the power of unity and vision. ■



## WOTR AT A GLANCE

**4.95**

**MILLION PEOPLE  
IMPACTED**

**10**

STATES

**61**

DISTRICTS

**5,107**

VILLAGES

**2.45**

**MILLION HECTARES  
OF LAND TREATED**

**5,53,500**

PEOPLE FROM **27 STATES OF INDIA** AND **63 COUNTRIES** TRAINED

**>1.7**

LAKH WOMEN SUPPORTED BY

**14,729 SHGs**

**SUPPORTED**

**20,251 + 57**

FARMER MEMBERS

FPOs

**FROM**

**720**

VILLAGES

**59,535**

HOUSE-  
HOLDS IN

**243**

VILLAGES PRACTISING  
**WATER STEWARDSHIP**

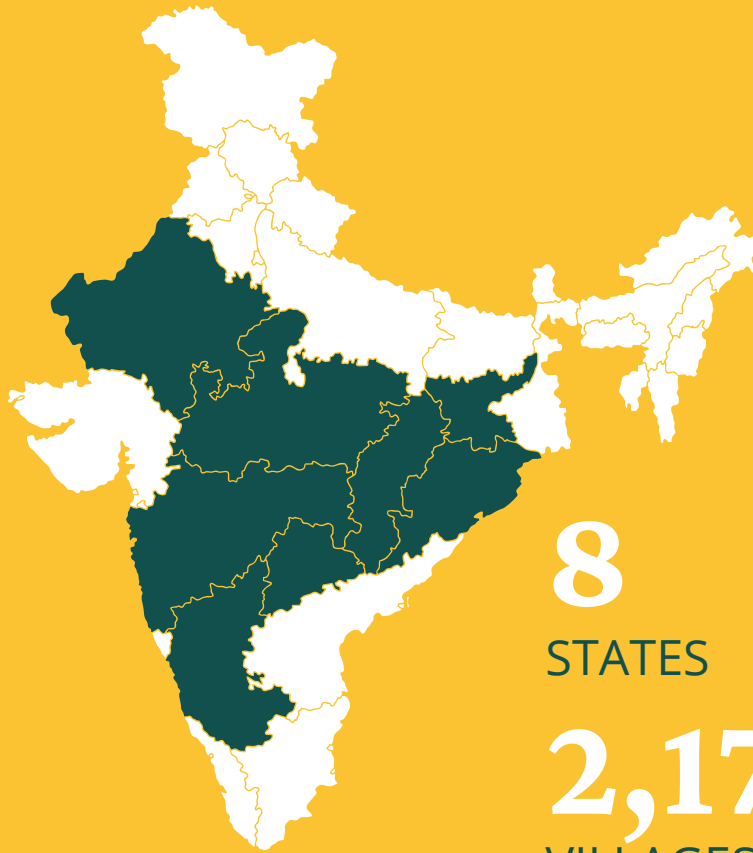
**141**

AGROMET  
STATIONS  
INSTALLED  
ACROSS

**6**

STATES

## WOTR IN 2022-23



8 STATES 31 DISTRICTS

2,175 VILLAGES



### RAJASTHAN

*Districts: Karauli, Udaipur, Sawai Madhaopur*



### KARNATAKA

*District: Bidar*



### TELANGANA

*Districts: Narayanpeth, Sangareddy, Rangareddy, Khammam*



### MADHYA PRADESH

*Districts: Mandla, Annupur, Chhindwara, Damoh, Dhar*



### CHATTISGARH

*Districts: Koriya*



### ODISHA

*Districts: Ganjam, Raygad, Gajpati*



### MAHARASHTRA

*Districts: Aurangabad, Raigad, Ahmednagar, Beed, Nashik, Pune, Nagpur, Gadchiroli, Dharashiv (Osmanabad), Solapur, Jalna*



### JHARKHAND

*Districts: Khunti, Gumla, Giridih*



# 2,300,000+



PEOPLE AND  
**448,045 HOUSEHOLDS**  
IMPACTED



## >12,000

**HECTARES OF LAND TREATED**  
FOR SOIL AND WATER CONSERVATION

## 730

**MILLION LITRES**  
WATER SAVED



CREATED STORAGE CAPACITY FOR

## 3.418

**BILLION LITRES OF WATER**



PUBLICATIONS RELEASED

## 15



### AWARDS RECEIVED



#### DEVELOPMENT CATALYST 2022 AWARD

at the Livelihoods Access Summit, an event hosted by Access Development Services

#### CII NATIONAL AWARD FOR EXCELLENCE IN WATER MANAGEMENT

by our partner, Apravaa Energy at the 8th CII Water Innovation Summit in 2022 for the exemplar work in Khandke in the Ahmednagar district of Maharashtra

#### NATIONAL CSR AWARD in the 'Women and Child Development' category

by our partner, Godrej and Boyce Manufacturing Company Limited, for their collaboration with us in Khalapur and Shirwal in Maharashtra

## FROM THE MANAGEMENT DESK

**Dear Friends,**

India confronts a significant crisis. Land degradation has alarmingly escalated from 28.76% to 29.7%, alongside an expansion in desertification from 81.48 million hectares to 83.69 million hectares. This precarious trend, fuelled by soil loss, deforestation, wind erosion, and climate change, endangers agriculture and exhausts resources. Rural communities, heavily reliant on their natural ecosystems, bear the brunt of these adverse effects. Extreme climate events - heatwaves, floods, droughts, and landslides - further intensify the crisis, triggering devastating consequences such as crop failure, livelihood loss, health concerns, and increased poverty. The country's rainfed regions suffer disproportionately, bearing the heaviest burden.

In the face of this threat, WOTR's Community-led Integrated Watershed Development approach, built on the principles of Ecosystem-based Adaptation, offers a beacon of hope. This holistic strategy addresses rural poverty systemically, encompassing everything from soil and water conservation to sustainable agriculture and biodiversity preservation.

Our objective is to mobilise rural communities using this approach, enhancing their capacity to adapt to climate change while concurrently broadening their livelihood options. **Over the past three decades, this has allowed us to touch the lives of 4.95 million people across 10 states and 5,107 villages.** Moreover, we have facilitated the creation of over 14,729 SHGs involving 171,512 women. We have **regenerated 2.45 million hectares of land,** and through these efforts, created a potential **water harvesting capacity exceeding 158 billion litres.** We are proud of these achievements, but we recognise the road ahead requires more work and innovation.

In the past year, we achieved several significant milestones. Our notable launch of 'The Water Governance Standard: Making Water Everybody's Business' encapsulates our distinctive approach to water management, refined over years of grassroots engagements. The year further amplified our operations' scale. We ventured into integrated watershed development in Karnataka and expanded our reach to 120 villages in Maharashtra's Dharashiv (previously Osmanabad) district and 200 in Rajasthan's Baran district as part of the Central Government's Aspirational Districts Programme. Additionally, our work commenced in 35 villages in Maharashtra's Gadchiroli district, meriting a special

**OUR OBJECTIVE IS  
TO MOBILISE RURAL  
COMMUNITIES USING THIS  
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TO CLIMATE CHANGE  
WHILE CONCURRENTLY  
BROADENING THEIR  
LIVELIHOOD OPTIONS**

commendation from the Hon. Deputy Chief Minister Devendra Fadnavis.

W-CReS, our transdisciplinary action research division, also garnered significant recognition this year. The Adaptation Research Alliance (ARA) highlighted our successful implementation of EbA in Maharashtra's Bhojdari and Purushwadi villages. Springer Nature featured our seminal study on impact of heat and variations

in temperature and humidity in low-income households. Moreover, our groundbreaking investigation into understanding mental models of sustainable groundwater management among farmers in Maharashtra's semi-arid regions was published in the Groundwater for Sustainable Development journal.

ECOBARI, our multi-stakeholder initiative advocating Nature-based and Nature-positive Solutions, spearheaded a series of impactful webinars promoting sustainable and equitable agricultural practices in India. These sessions sparked engaging discussions on pivotal topics, from sustainable water resource management benefits to emerging Farmer Producer Organisations (FPOs) challenges, fostering fruitful stakeholder dialogues.

As we look towards the future and our 30th year, we are filled with renewed hope and commitment. We extend our heartfelt gratitude to all of you - our partners and donors for your unwavering support through the crests and troughs. Your belief in our work fuels our drive to evolve, innovate, and serve our communities more effectively. As we journey forward together, we are excited about our shared mission to address the evolving needs of our environment and the people who depend on it.

Together, we can build a future that's not just resilient but vibrant and flourishing for all.

Best Regards,

**Crispino Lobo**  
Co-founder & Managing Trustee

**Prakash Kesar**  
Executive Director

**Marcella D'Souza**  
Director, W-CReS & Trustee





♦ COMMUNITY HEROES ♦

# TILLING THE PATH OF PROSPERITY

*Boas Soyi's Triumph  
Over Adversity*



Amid the verdant landscapes of Binda village in Jharkhand, Boas Soyi wrestled with the capricious forces of nature. A determined farmer striving to feed his family of four, Boas tilled his two-acre plot with all the passion and persistence he possessed. Yet, the cruel whims of the weather kept his dreams just out of reach. Despite cultivating Goda Dhan (a local rice variety) on most of his land, and dappled ventures into livestock farming and forest product sales, the returns merely skimmed survival.

But within Boas Soyi resided an unyielding spirit. His tale is one of a man who, when faced with adversity, chose to sow seeds of hope instead of reaping despair.

The arrival of the 'Building Adaptive Capacities and Resilience to Climate Change of Marginalised Communities' project, supported by IndusInd Bank and implemented by WOTR, presented Boas with the beacon of change he yearned for. He saw his neighbouring farmers prospering and yearned to join their ranks. But how? The answer lay hidden in the folds of training programs on Climate Resilient Agriculture, Sustainable Organic Farming, and Vegetable Production.

Armed with newfound knowledge, Boas stepped into the next phase of his journey. Embracing the System of Rice Intensification (SRI) technique, he meticulously reconfigured his farming practices, diversifying into a range of crops that included finger millets, ridge-gourd, tomatoes, peas, bitter gourds, and watermelons. Employing sustainable organic methods and formulants such as Amritpani and vermicomposting, Boas began to see an extraordinary transformation unfold on his land.



*Boas Soyi, a marginal farmer and Wasundhara Sewak from Binda Village, Jharkhand*

From the harsh canvas of unpredictable weather patterns, there emerged a vibrant patchwork of flourishing crops. Boas's annual income skyrocketed to an impressive Rs. 1.5 to 1.7 lakhs, a sweet reward for his arduous journey. But his success wasn't just his own. It sparked a light within him that yearned to illuminate the paths of others in his community.

Sharing his wisdom, Boas led his fellow villagers towards a prosperous future. He became more than just a successful farmer; he became a beacon of change, a harbinger of hope. His story resonated through the village, mending the fractured bond between the land and its people.

Boas Soyi, the unyielding farmer, became Boas Soyi, the community hero and today works as a Wasundhara Sewak with WOTR. His tale is a testament to the power of resilience, knowledge, and the transformative nature of shared prosperity. Boas sowed more than just seeds in his field; he sowed the seeds of a sustainable future, instilling hope and prosperity in the heart of his community, ensuring his legacy thrives for generations to come. ■

FROM **THEN...**

...TILL **NOW**

**1992**

Launch of the Indo-German Watershed Development Programme; Conceptualisation of WOTR

**1995**

Need for women representation in Watershed Development; WOTR forays into Women Empowerment

**1993**

WOTR established as a technical and capacity building agency to IGWDP to coordinate national program for Watershed Development; Focus: Land and Water Management

**1996**

WOTR starts implementing Watershed Development Projects on its own to create a benchmark

**2002**

Wasundhara Approach with emphasis on inclusivity of all classes of society; WOTR moves into health and nutrition

**2007**

Weather changes observed across time affecting agriculture and livelihoods; Climate Change Adaptation project initiated and Vulnerability Reduction Programme launched

**2009**

Weather Advisories for Farmers to help them deal with climate change

**2015**

An impending water crisis in India; WOTR designs Water Stewardship and Water Budgeting Methodologies to address water demand

**2016**

Challenges faced by rural communities not adequately represented and understood in research and policy-making; W-CReS established as a dedicated research wing

**2019**

Need to secure ecosystems, conserve biodiversity and build resilience to climate change; EbA approach adopted; FarmPrecise mobile app launched to help farmers with advisories tailored to farm and crop specific conditions

**2021**

ECOBAARI launched with 8 other co-founding partners to upscale EbA in the country

**2022**

Need to transform food and nutrition systems in rural communities; Focus on Food and Nutrition Security

**2023**

Launch of Water Governance Standard to strengthen rural water security through behavioural change and incentivizing water investors





## A VISION FOR RURAL INDIA

Resilient rural communities that enjoy a fulfilling quality of life within vibrant and sustainable ecosystems

## A MISSION TO MAKE RURAL POVERTY A DISTANT MEMORY

WOTR tackles the key causes of rural poverty by rejuvenating ecosystems and building the community's resilience to climate change. We enhance the availability of water, increase the productivity of land and agriculture, diversify livelihoods, empower women, and strengthen the health and well-being of vulnerable rural communities

## THE THREE PILLARS THAT SUPPORT THIS MISSION

WOTR engages at the intersection of practice, knowledge and policy across scales and in collaboration with various stakeholders across sectors. This is enabled through -

**Implementation** of thematic interventions on the ground

**Applied Research and Policy Advocacy** which leads to clear implementation and outcomes on the ground

**Training and Capacity Building** of other institutions including government and non-governmental organisations (NGOs)





*Scan this QR Code to  
read in detail about  
our Systemic Approach*



## A SYSTEMIC APPROACH

We firmly believe that combating rural poverty requires a systemic approach that requires rejuvenating both rural communities and their surrounding natural ecosystems. Employing an EbA approach, we mobilise rural communities to restore and efficiently manage their land, water, and forests, while promoting participatory governance and enhancing their adaptive capacities. This leads to revitalised ecosystems that strengthen their resilience to climate change, generates more livelihood opportunities, and boosts their overall quality of life, health, and nutrition.

## ALIGNING WITH THE INTERNATIONAL AGENDA

Our work strongly aligns with key international priorities, including Land Degradation Neutrality, the Paris Agreement on Climate Change, the Sendai Framework for Disaster Risk Reduction, and the UN 2030 Agenda for Sustainable Development.

By placing a high priority on environmental protection, natural resource conservation, adaptive capacity enhancement, and community resilience building, we actively contribute to 12 out of the 17 Sustainable Development Goals (SDGs) established by the United Nations.





♦ COMMUNITY HEROES ♦

# UNSHACKLED: RADHABAI'S FLIGHT TO FREEDOM

**Radhabai Doke:** A Sarpanch's  
Journey from the Four Walls to  
the Panchayat Office

Within the quiet walls of a modest house in a rural village, Radhabai Doke harboured an audacious dream. As a young girl, her ambition was sparked by a school play where she played the role of a police inspector and caught a glimpse of the power to lead. But her path to leadership would not be a straight one. The narrative of her life would twist and turn like the back roads of her village before she would finally claim her rightful place at the helm.

Married at the tender age of fifteen, Radhabai's life was boxed into a world of cooking, cleaning, and caring for her new family. Her dreams of leadership were put to rest, and the visions of textbooks and school uniforms faded away. It seemed she was destined to remain within the four walls of her home.

However, in 2021, the winds of fate began to shift. Her father-in-law, in a surprising move, secretly enrolled her name in the gram panchayat elections. She found herself holding the title of sarpanch, yet the power she was supposed to wield remained elusive.

Just when she felt like a mere figurehead, representatives from WOTR knocked on her door. Their arrival signalled a new dawn in Radhabai's life. Encouraging her to join the 'Wasundhara Rural Development Programme,' supported by Tata Projects Limited, they reignited the dormant flame of leadership within her. With a resolute heart, Radhabai seized this golden opportunity and embarked on a journey to empower the women of her village.

Radhabai's journey was an uphill climb, filled with resistance and scepticism, especially from her husband. Yet, she was undeterred. Every home she visited, every woman she persuaded to join the Bachat Gat (a savings group),



*Radhabai Doke, Sarpanch of Antarvali village, Dharashiv (previously Osmanabad) district in Maharashtra*

rekindled the fire of empowerment within her. Her efforts gradually began to bear fruit. With each successful meeting, Radhabai's influence grew, and she began to gain the support of her family. From a silenced daughter-in-law, she transformed into a symbol of change, taking her rightful place in the Sarpanch's chair at the Panchayat office. Her dream of leadership was becoming a reality, not just for her but also for every woman in the village.

Today, Radhabai works shoulder to shoulder with her father-in-law, advocating for a dal mill in the village to alleviate the hardships faced by women in processing pulses. Her leadership journey, once a dream, is now a beacon of hope for her daughter and all the young girls in her village.

Radhabai Doke's story reminds us that leadership is not just a position but a journey. Her tale is a testament to the power of resilience, the pursuit of dreams, and the transformative power of one woman's determination. As she continues to empower her community, Radhabai stands tall as a beacon of change, inspiring generations to dream big and step beyond their four walls. ■

## THE THEMES THAT ENABLE A SYSTEMIC INTERVENTION



At WOTR, our primary commitment lies in revitalising ecosystems that have faced degradation. We understand that restored natural ecosystems offer the only sustainable path out of poverty. A comprehensive integrated watershed development is employed where we join hands with rural communities to conserve and restore natural resources, including soil and water. The approach is holistic and spans the entire landscape - from the ridge to the valley. We mobilise our communities to harvest each drop of rainfall and preserve every bit of soil, laying a firm foundation for them to thrive and prosper. In parallel, we work closely with these communities, fostering effective governance of these vital resources. This dual approach, we believe, not only yields lasting benefits but also ensures the sustainability of our efforts.

### ***THE WATER GOVERNANCE STANDARD: A COMPREHENSIVE TOOL FOR SUSTAINABLE WATER MANAGEMENT***

Water is an invaluable resource, indispensable for the survival of all living beings. However, the ever-growing demand for water, fueled by population growth and industrialisation, has led to an acute water crisis worldwide. The United Nations predicts that by 2025, half of the world's population will be living in areas with water scarcity. In rural India, where the impact of the water crisis is particularly severe, communities are bearing the brunt of climate change. With erratic rainfall patterns and prolonged droughts becoming more frequent, rural communities are at the forefront of the impact of these problems.

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In this context, it is imperative to manage water resources sustainably and equitably. Addressing this challenge, we launched a comprehensive methodology and its associated book, 'The Water Governance Standard (WGS) - Making Water Everybody's Business' for sustainable water management in February 2023.

The WGS is a powerful tool that enables communities, institutions, and governments to evaluate and enhance their water governance practices. It is designed to be adaptable to different contexts and provides a step-by-step approach to assess water governance practices. Beginning with a self-assessment by stakeholders using a set of indicators based on objective criteria, the stakeholders can identify their strengths and weaknesses and develop an improvement plan. The standard also provides guidance on implementing the plan and monitoring progress.

The WGS is not just meant to be a tool for the assessment and improvement of water governance practices but also a means to encourage dialogue and collaboration among stakeholders. It promotes participation and inclusion of all stakeholders, including marginalised groups like women and indigenous communities.

The standard has already been piloted in 149 villages across India, and the results have been encouraging. It has helped villages identify gaps in water governance practices and provided a roadmap for improvement.

The launch of the standard is a timely intervention, given the urgent need for sustainable water management in the country. It is also a significant step towards achieving the United Nations' SDG 6, which aims to ensure the availability and sustainable management of water and sanitation for all. Ultimately, the WGS has the potential to be a game-changer in India's effort towards achieving water security, particularly in rural India.



Our focus on Climate Resilient Agriculture is aimed at empowering rural communities to effectively manage and enhance their agricultural practices amidst changing climate conditions. We strive to blend traditional knowledge with scientific advancements to develop sustainable farming practices that can withstand climatic uncertainties. Our goal is to improve crop productivity and livelihood resilience while reducing environmental footprints. Through comprehensive training and knowledge-sharing, we help communities transform their agriculture into a sustainable, adaptive, and economically viable system, ensuring food security and livelihoods in the face of climate change.



Our Livelihoods programme focuses on the comprehensive development of both farm and non-farm based enterprises in rural communities. We provide support to improve productivity and sustainability in agriculture, while also aiding the growth of non-farm activities to diversify income sources. By equipping communities with the skills, knowledge, and resources necessary to establish and expand local businesses, we enhance income stability and financial independence. Our approach includes promoting sustainable farming methods, enhancing market linkages, and encouraging entrepreneurship in areas such as crafts, livestock, and services. Our goal is to help rural communities build resilient and diversified livelihoods that can weather economic and climatic uncertainties.



Our Women Empowerment programme places special emphasis on establishing and supporting Self-Help Groups (SHGs), recognising the transformational power they hold in rural societies. Through these groups, we aim to equip women with the necessary skills, resources, and confidence to become active economic and social contributors in their communities. We provide training and support to foster leadership, entrepreneurship, and financial literacy. This not only enhances their income-generating capacities but also boosts their social status and decision-making power within their households and communities. By nurturing these SHGs, we are not just empowering individual women, but catalysing change that uplifts entire communities, advancing gender equality and contributing to overall rural development.



Our Health, Sanitation, and Nutrition initiative is committed to improving the overall wellbeing of rural communities. We promote kitchen gardens and multilayer farms as sources of nutritious food and self-sufficiency. Through initiatives focused on accessing clean drinking water, we address a crucial aspect of disease prevention and good health. We organise health camps for anaemia detection and treatment and monitor child growth to ensure proper development. Our comprehensive approach to health extends to menstrual hygiene as well; we distribute Saafkins, an eco-friendly menstrual product, promoting a safe and hygienic menstrual cycle for women. By integrating these diverse components – nutrition from locally-grown food, improved sanitation from clean water, and direct health interventions – we foster healthier, more resilient communities.



## ***FPOs: KEY DRIVERS IN STRENGTHENING FOOD SYSTEMS AND ENSURING FOOD SECURITY***

Farmer Producer Organisations (FPOs) have emerged as essential catalysts in the global food system, significantly contributing to food security. Aligned with WOTR's mission to enhance the livelihoods of small and marginalised farmers, FPOs facilitate collective action, promote sustainable farming practices, and provide better market access. This article outlines the critical role FPOs play in strengthening food systems and ensuring food security and highlights their relevance to WOTR's initiatives.

### **FPOs' ROLE IN FOOD SYSTEMS**

FPOs, as collective institutions comprising farmers and other agricultural producers, effectively link small-scale producers with markets, services, and resources. By engaging in food systems, FPOs contribute to:

- ***Improved access to inputs:*** Collective procurement by FPOs allows farmers to access quality inputs such as seeds, fertilisers, and pesticides at lower prices, thus enhancing crop yields. This aligns with WOTR's commitment to promoting sustainable agricultural practices.
- ***Enhanced production techniques:*** FPOs provide small farmers with access to improved production technologies and practices, including precision agriculture, integrated pest management, and sustainable land management. These innovations increase productivity, improve food quality, and reduce environmental impact, supporting WOTR's objective of promoting climate-resilient agriculture.
- ***Streamlined post-harvest management:*** FPOs minimise post-harvest losses and add value to agricultural produce by offering storage, transportation, and processing services. This contributes to reducing food waste and ensuring the availability of diverse, nutritious food products.
- ***Fostered market linkages:*** FPOs enhance market access for smallholder farmers by providing collective marketing and negotiation platforms, as well as facilitating direct connections to buyers. By eliminating intermediaries, FPOs secure better prices for farmers.

### **FPOs AND FOOD SECURITY**

FPOs contribute to the four dimensions of food security: availability, access, utilisation, and stability.

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- **Availability:** FPOs help small farmers increase productivity and improve the quality of their produce by pooling resources. This contributes to higher food availability at local, regional, and global levels.
- **Access:** By connecting small farmers to markets, FPOs improve access to diverse and nutritious food products. Additionally, securing better prices for produce enables farmers to earn higher incomes, enhancing their ability to purchase food.
- **Utilisation:** FPOs promote the adoption of practices that improve food quality and safety, ensuring that consumers have access to safe and nutritious food products.
- **Stability:** FPOs reduce vulnerability to market fluctuations and climate-related risks by promoting diversified agricultural production, encouraging the adoption of climate-resilient crops and farming practices, and providing access to insurance and credit facilities. These efforts enhance food supplies and income stability.

#### **WOTR & FPOs**

WOTR has successfully established 57 FPOs in its operational states, each engaged in diverse activities ranging from input procurement and trading to value addition. In a departure from conventional practices, WOTR has shifted its focus to cultivating sustainable business plans that embody an Economy and Ecology approach. By prioritising the delicate balance between economic viability and ecological preservation, WOTR endeavours to develop environmentally sensitive enterprises that not only generate income but also ensure the long-term sustenance of the natural ecosystem. Moreover, WOTR has ambitious plans to enhance the capacity of FPOs operating in semi-arid regions, enabling them to tackle the multifaceted challenges posed by business operations and adverse climatic conditions.

FPOs hold significant potential to drive transformative change in the global food system by amplifying the influence of smallholder farmers and enhancing food security. With WOTR's unwavering commitment to uplifting marginalised communities and fostering climate-resilient agriculture, the strategic adoption of FPOs becomes a pivotal pathway to realise these objectives. By facilitating improved access to essential resources, advanced technology, and broader market opportunities, FPOs empower small-scale farmers to elevate their productivity, income, and overall resilience. In light of the escalating demand for food and the mounting challenges posed by climate change, it is imperative to extend robust support and promotion to FPOs as they pave the way towards creating sustainable and inclusive food systems for all.

◆ BUILDING COMMUNITY RESILIENCE ◆

# HOW DROUGHT PRONE COMMUNITIES IN JALNA CAME TOGETHER TO SOLVE THEIR WATER WOES

📍 *Maharashtra*





75 year old Bhimsingh Ramdhan Reknot has lived his life surviving droughts. **"Aap keh sakte ho ki sookhe ke saath hi bada hua hun. Ismein bohat kuch khoya bhi hai (I have grown up in/with droughts. I have also lost a lot because of them,"** he says, seated on a charpoy, in his backyard.

A farmer from Pasodi village in Jalna, a semi-arid area in Maharashtra prone to droughts, Bhimsingh has seen it all - water scarcity, crop failure, starvation and bankruptcy. He was in his twenties when the state experienced one of its worst droughts in the seventies that left his family almost bankrupt. While Bhimsingh remembers that time with a certain shudder, he says things became much worse later.

Between 2012 and 2016, the region suffered five years of consecutive droughts, which made agriculture unviable, especially for small and marginal farmers. In 2016, shortage of water had become so acute in Jalna that there were nearly 4000 tankers supplying water to the

rural parts of the district. Frequent droughts combined with poor cultivation practices also meant that the local habitat had become fragile and degraded.

Like many other parts of Jalna, this impacted everything in Pasodi. Wells dried up. Farms became dry. Women had to walk kilometres to fetch water. Children were forced to drop out of school. The village was forced to spend on private tankers for water supply that was both expensive and not enough. Farmers were forced to take out loans to just survive. Families were forced to migrate in search of work. Fights over water were frequent, as was alcoholism amongst men. **"Because there was no agricultural work in the village, men would loiter around drunk. Bohat ladai jhagde hote the (There was a lot of fighting),"** says Bhimsingh.

This is no longer the case. Today, Pasodi has enough water to grow two cycles of crops. No private water tankers are needed in the village,





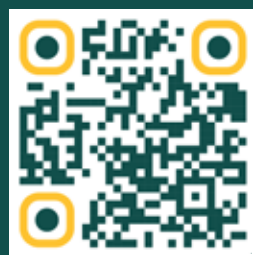
and only a few educated young men emigrate in search of jobs. Farmers no longer need to borrow money. In addition to practising agriculture, 190 of the 290 families in the village are engaged in dairy production. The village produces nearly 7000 litres of milk daily.

This transformation - witnessed in Pasodi, and scores of villages in Jalna - is not sudden. It happened over the course of five years, from 2014-2019, when WOTR, supported by Hindustan Unilever Foundation (HUF) and the Maharashtra Government, implemented a PPCP project (Public-Private-Civil Partnership) named 'Securing Water and Livelihoods in Semi-Arid Drought Prone

Regions of Maharashtra through community-led watershed development' in 75 villages of Jalna district.

Combining science with social-cooperation, village communities were empowered during this time to do integrated watershed development work on their lands, through MGNREGA funds, to tackle the issue of water scarcity. Community-led watershed work along with guidance on pursuing sustainable agriculture, water budgeting, biodiversity conservation and inclusive village governance to residents, has not only ensured improvement in water levels and land productivity in these parts, but also brought lasting change.

***Read the full story here:***





## IMPLEMENTATION HIGHLIGHTS FROM THE STATES

### Maharashtra

Rural communities in Maharashtra are entangled in a complex array of challenges that have escalated in recent years. A primary concern is the shrinking agricultural productivity, a fallout of climate change, water scarcity, and outdated farming techniques. This decline directly impacts rural livelihoods, as a significant number of families are heavily dependent on farming for their sustenance. The Desertification and Land Degradation Atlas by ISRO highlights a worrying trend - over 14.3 million hectares of land in Maharashtra is degraded, marking a 3.4% increase from the situation in 2011-13, thereby intensifying the agricultural crisis.



In addition, poverty continues to be a stubborn issue. A report by Niti Aayog reveals that about 14.85% of Maharashtra's population lives below the Multidimensional Poverty Index, a figure that starkly illustrates the economic struggles faced by many.

These intertwined challenges underscore the pressing need for comprehensive and targeted interventions to mitigate the hardships endured by Maharashtra's rural communities.

## IMPACT IN 2022-23



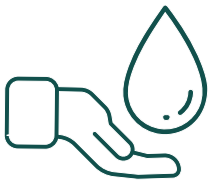
LIVES IMPACTED

**1.2**  
MILLION PEOPLE



LAND TREATED FOR SOIL AND  
WATER CONSERVATION

**8912**  
HECTARES



WATER SAVED

**263**  
MILLION LITRES



WATER STORAGE  
CAPACITY CREATED

**2.35**  
BILLION LITRES



SHGs SUPPORTED

**3,148**



### • COMMUNITY SPEAK •

As the watershed development activities commenced in our village, my family and I eagerly jumped into action. We enthusiastically dug trenches and constructed conservation structures, driven by the desire to contribute to a greater cause and earn a fair wage through MGNREGA. We saved every penny of our hard-earned wages to construct a well on our previously barren land. As water availability breathed life into the land, our cultivation flourished, and with it, our earnings multiplied. We purchased more land for cultivation, saved more money, and finally, built our long-cherished dream - our own house!

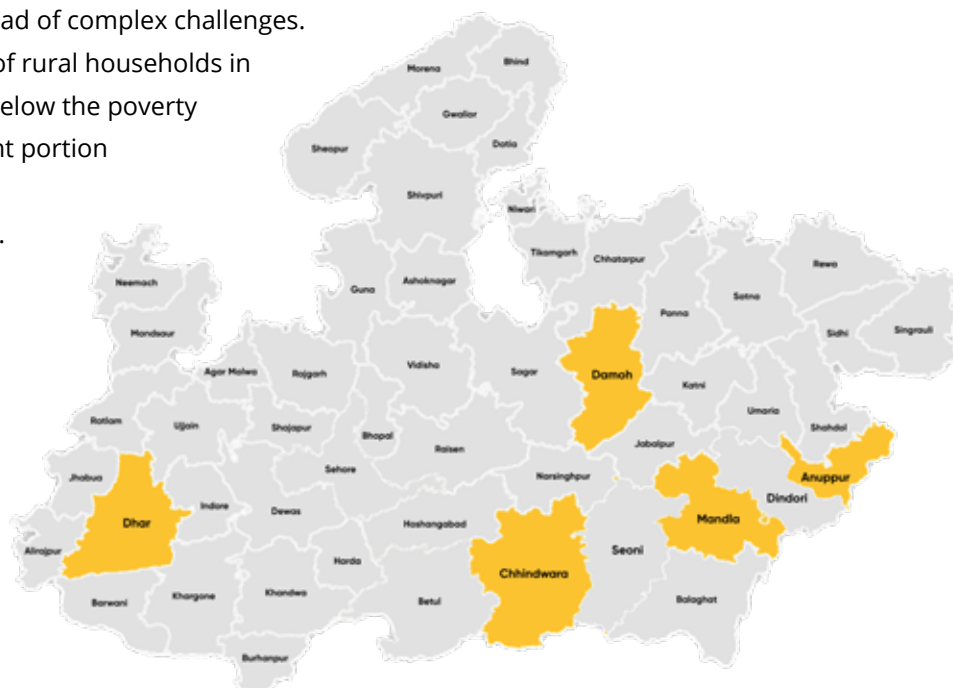
**Parvati Kakade**  
SONKHEDA VILLAGE

**Madhya Pradesh**

Madhya Pradesh, located in central India, grapples with a myriad of complex challenges.

A staggering 38.3% of rural households in the state are living below the poverty line, with a significant portion relying heavily on subsistence farming.

Unfortunately, agriculture as an occupation is becoming increasingly unprofitable.



To enhance agricultural productivity and bolster the economy, the development of water resources for irrigation becomes crucial, particularly in rainfed regions. The challenging topography exacerbates issues such as soil erosion, water runoff, and imbalanced resource distribution. These factors directly hinder crop growth and jeopardise agricultural productivity. In rain-fed areas, the average yield remains alarmingly low due to the absence of assured irrigation, rendering new technologies designed to boost yields unfeasible.

Climate change poses an additional major challenge for rural communities in Madhya Pradesh. The state is already witnessing the

impacts of climate change, including more frequent extreme weather events, rising temperatures, and shifting rainfall patterns. These changes make it increasingly difficult for rural inhabitants to cultivate crops, raise livestock, and access water resources.

The insufficient earnings and limited income opportunities in rural areas have triggered a surge in migration and impeded economic growth. Moreover, the high prevalence of malnutrition among vulnerable populations in Madhya Pradesh can be attributed to inadequate nutrition knowledge and poor dietary practices.

## IMPACT IN 2022-23



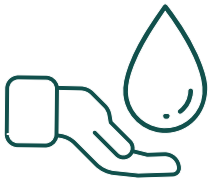
LIVES IMPACTED

**652**  
THOUSAND PEOPLE



LAND TREATED FOR SOIL AND  
WATER CONSERVATION

**428**  
HECTARES



WATER SAVED

**49**  
MILLION LITRES



WATER STORAGE  
CAPACITY CREATED

**158**  
MILLION LITRES



SHGs SUPPORTED

**360**



### • COMMUNITY SPEAK •

After my husband passed away, it felt like we were trapped in an unending cycle of struggle and sorrow. With no water, and no yield, I was unable to send my children to school. Thanks to HDFC Bank Parivartan's intervention, I learnt about organic farming and received assistance to build a community well. Now, along with easy access to water, and organic formulations, my yield has multiplied, boosting my income to Rs. 45,000 per crop. Despite all the hardships, my earnings have stabilised, and I now proudly send my kids to school!

***Setulbai***

DHEKALI VILLAGE

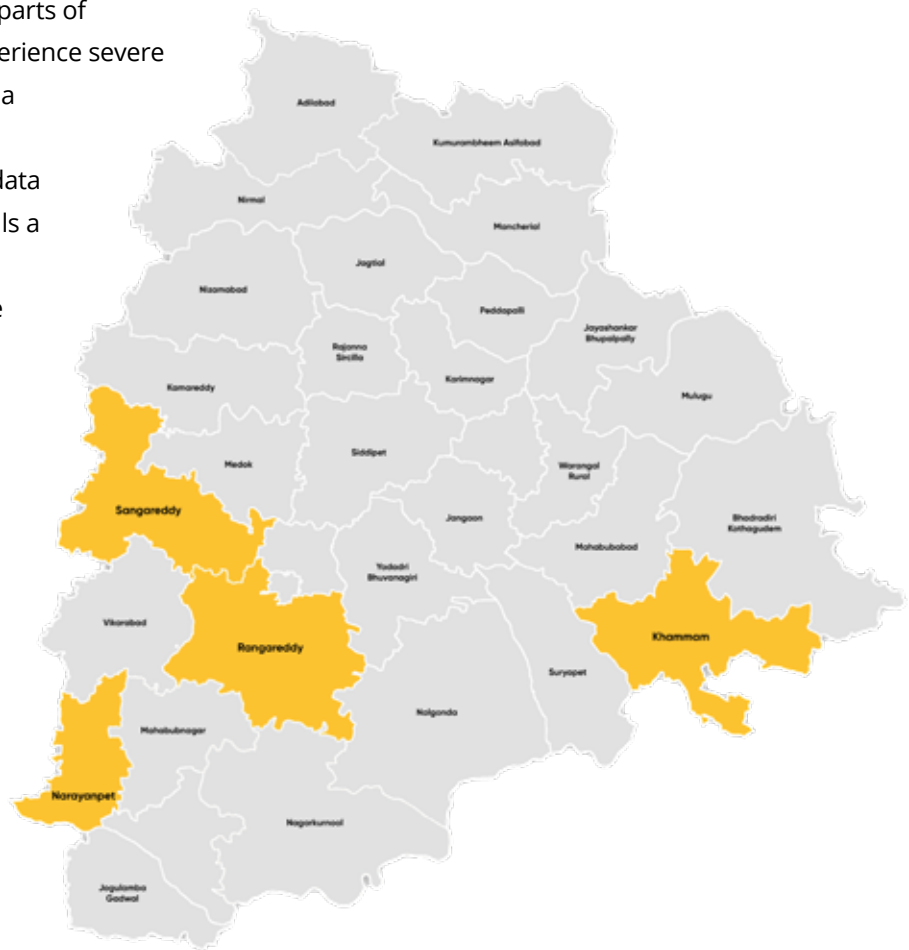


## Telangana

The western and southern parts of Telangana consistently experience severe drought conditions, posing a significant challenge. Unfortunately, the rainfall data from the past 5 years reveals a discouraging trend: these regions consistently receive below-average precipitation. This situation is particularly dire as more than 80% of the population relies on agriculture for their livelihoods.

The delayed onset of monsoon, along with unpredictable rainfall patterns, renders farmers increasingly vulnerable, leading to diminishing profits in agriculture each year. Consequently, farmers have resorted to mal-adaptations, such as over-extracting and exploiting land and water resources, in an attempt to mitigate the adverse effects of climate on crop yields.

Lack of support and knowledge extension services for farmers regarding sustainable management practices in soil, agriculture, and water resources has further deteriorated



the local ecosystems. A primary contributing factor to this predicament is the limited access to information, technical knowledge, and technology for farmers. Without these crucial resources, it becomes challenging for farmers to embrace sustainable management practices in agriculture, as well as soil and water conservation.

## IMPACT IN 2022-23



LIVES IMPACTED

**162**

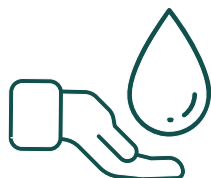
THOUSAND PEOPLE



LAND TREATED FOR SOIL AND  
WATER CONSERVATION

**1,565.6**

HECTARES



WATER SAVED

**231.7**

MILLION LITRES



WATER STORAGE  
CAPACITY CREATED

**429.67**

MILLION LITRES



### • COMMUNITY SPEAK •

I owned a mere 4 acres of land, and the unforgiving water scarcity after monsoons left our crops in ruins. Then came the 'Improving Farm Based Livelihoods through Watershed Management' project, backed by Wells Fargo International Solutions Pvt. Ltd. Seeing the positive impact of watershed treatments in our village, I knew I couldn't let this opportunity slip by. Though unsure about a 'farm pond' initially, I chose a compact dug-out pond. In the dry August of 2021, the pond turned out to be a lifeline, providing crucial irrigation. Acknowledging my mistake, I embraced other treatments wholeheartedly, fortifying my fields with tree-lined bunds. With a successful paddy harvest after three decades, I now have the confidence to diversify my crops and pave a brighter path for my family's future.

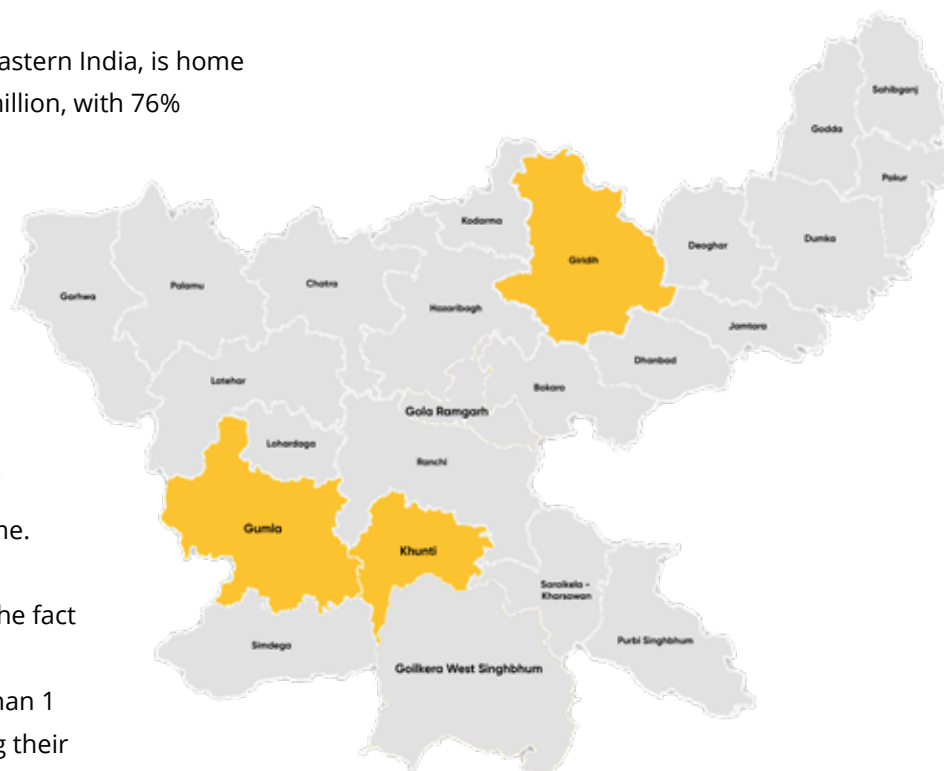
**Jayath Ram**

SARTHANDHA VILLAGE

## Jharkhand

Jharkhand, located in eastern India, is home to a population of 33 million, with 76% residing in rural areas.

The agricultural sector serves as the primary economic activity, engaging approximately 63% of the rural population and serving as their main source of employment and income. However, a significant challenge arises from the fact that about 70% of farm households own less than 1 hectare of land, limiting their potential productivity.



Despite being rich in natural resources such as forests, minerals, and abundant land, certain regions in Jharkhand face high vulnerability to the impacts of climate change. Erratic rainfall patterns, severe droughts, and heavy winds disproportionately affect tribal populations who are already vulnerable. Agro-ecological and social factors contribute significantly to rural poverty in Jharkhand. Limited infrastructure, difficult terrains, population pressure on arable land, inadequate irrigation coverage, scarcity of in-situ employment opportunities, adherence to social customs and traditions, and natural calamities like drought worsen poverty levels in the state.

Over 10% of households in Jharkhand experience seasonal food insecurity, compounding the challenges faced by the population. Migration is a prevalent manifestation of poverty in the region, as households or individuals are forced to leave their native places due to lack of employment opportunities, low wages, and poor quality of life. Furthermore, a lack of knowledge regarding water and soil conservation practices has led to severe soil erosion and sedimentation, jeopardising livelihoods and plunging families deeper into poverty.

## IMPACT IN 2022-23



LIVES IMPACTED

**40**

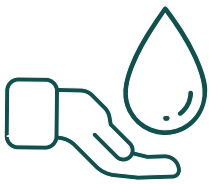
THOUSAND PEOPLE



LAND TREATED FOR SOIL AND WATER CONSERVATION

**160**

HECTARES



WATER SAVED

**4.9**

MILLION LITRES



WATER STORAGE CAPACITY CREATED

**52.7**

MILLION LITRES



SHGs SUPPORTED

**582**



### • COMMUNITY SPEAK •

My husband and I struggled to survive on our 4-acre plot. We were willing to do anything to provide for our children, but every effort was in vain. Pests were ravaging our crops, despite using pesticides. We were stressed and couldn't even afford to pay for our daughter's nursing course. The 'Rural Livelihoods Project' backed by the Axis Bank Foundation offered hope. With organic formulations, not only did the pests vanish, our tomato, chilli, and brinjal crops flourished. Our once barren land now brings joy and financial stability. We can now proudly support our daughter's nursing training in Hazaribagh.

***Shanti Mundu***

SURUNDA VILLAGE



## Chhattisgarh

Chhattisgarh, a predominantly rural and tribal state in central India, heavily depends on agriculture and forests for sustenance. However, land degradation has plunged many families into dire economic conditions. Climate change is taking a toll on the agricultural sector, particularly rain-fed systems vulnerable to erratic monsoons and water scarcity.

Agriculture contributes around 16% to Chhattisgarh's GDP and supports 80% of the rural population. Over half of these individuals are marginal farmers relying on rain-fed mono-crop agriculture, making them highly vulnerable to climate change. The hilly northern and southern regions face additional challenges due to inadequate irrigation infrastructure and substantial fallow land.

Rainfall variations have long been a concern, with recent data confirming significant changes in monsoon precipitation patterns. More frequent and intense droughts are impacting the state, accompanied by increased pest attacks and pesticide usage due to temperature fluctuations. Droughts, hailstorms, cyclones, and flooding are becoming more common, severely affecting crop productivity across different agro-climatic zones.



## IMPACT IN 2022-23



LIVES IMPACTED

**14**

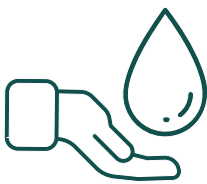
THOUSAND PEOPLE



LAND TREATED FOR SOIL AND WATER CONSERVATION

**657.5**

HECTARES



WATER SAVED

**124**

THOUSAND LITRES



WATER STORAGE CAPACITY CREATED

**159.4**

MILLION LITRES



SHGs SUPPORTED

**20**



### • COMMUNITY SPEAK •

Previously, our lives were dominated by an unending quest for water. During dry months, we had no choice but to engage in labour on others' farms due to the scarcity. Relying on a corroded hand-pump filled us with a sense of hopelessness. I endured a daily two-kilometre trek to procure water, taking a toll on my health. However, the tide turned dramatically with HDFC Bank Parivartan's 'Holistic Rural Development Programme.' In March 2022, the installation of a 2000L Water Tank, complete with a solar panel structure and HDPE pipes, became a reality. This clean water source has liberated us from relentless labour. Now, I can dedicate my efforts to farming and nurturing our garden, a beacon of hope for our family and community.

**Parwati Singh**

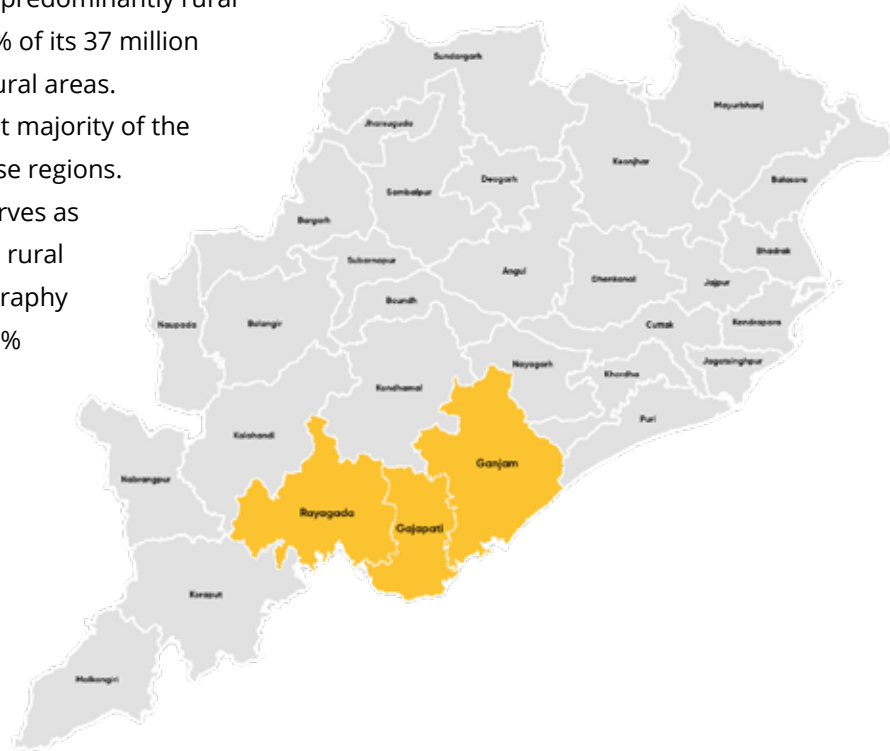
MATIJHARIYA VILLAGE

Odisha, located on the Bay of Bengal in eastern India, has a predominantly rural population, with 87% of its 37 million people residing in rural areas. Unfortunately, a vast majority of the poor also live in these regions.

While agriculture serves as the backbone of the rural economy, the topography of approximately 95% of the villages are surrounded by hills, making them highly susceptible to the adverse effects of water flowing down from the upper catchment areas, damaging crop lands.

The absence of proper irrigation infrastructure results in water scarcity and heavy reliance on erratic rainfall patterns.

Land ownership is another significant issue plaguing rural Odisha, with over one-fourth of households lacking any land, while nearly 60% of farmers possess small and marginal plots of undulated land. Consequently, a large number of people are compelled to migrate outside the state for 5-6 months each year in search of labour work.



Tribal communities, in particular, face additional hurdles in accessing necessary resources. Self-help groups (SHGs) within these communities struggle due to a lack of voice, confidence, basic administrative skills, and negotiation capabilities. Moreover, they encounter difficulties in obtaining support from rural banks, accessing resources, and identifying marketing opportunities.

## IMPACT IN 2022-23



LIVES IMPACTED

**20**

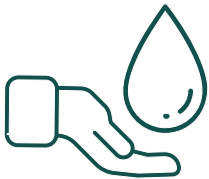
THOUSAND PEOPLE



LAND TREATED FOR SOIL AND WATER CONSERVATION

**25**

HECTARES



WATER SAVED

**14**

MILLION LITRES



WATER STORAGE CAPACITY CREATED

**38.3**

MILLION LITRES



SHGs SUPPORTED

**47**



### • COMMUNITY SPEAK •

Until a few years ago, making ends meet from my farm was a struggle. I had to migrate for work after the Kharif season. Then, the 'Building Adaptive Capacity and Climate Resilience of Tribal and Marginalised Communities' project introduced new agricultural and water conservation methods. I took a leap of faith by venturing into tomato farming and it fetched Rs. 8000/- in profit. Now I am keen to practice and experiment with new methods such as SRI. Thanks to IndusInd Bank and WOTR's help, I no longer migrate for work. My farm sustains my family now!

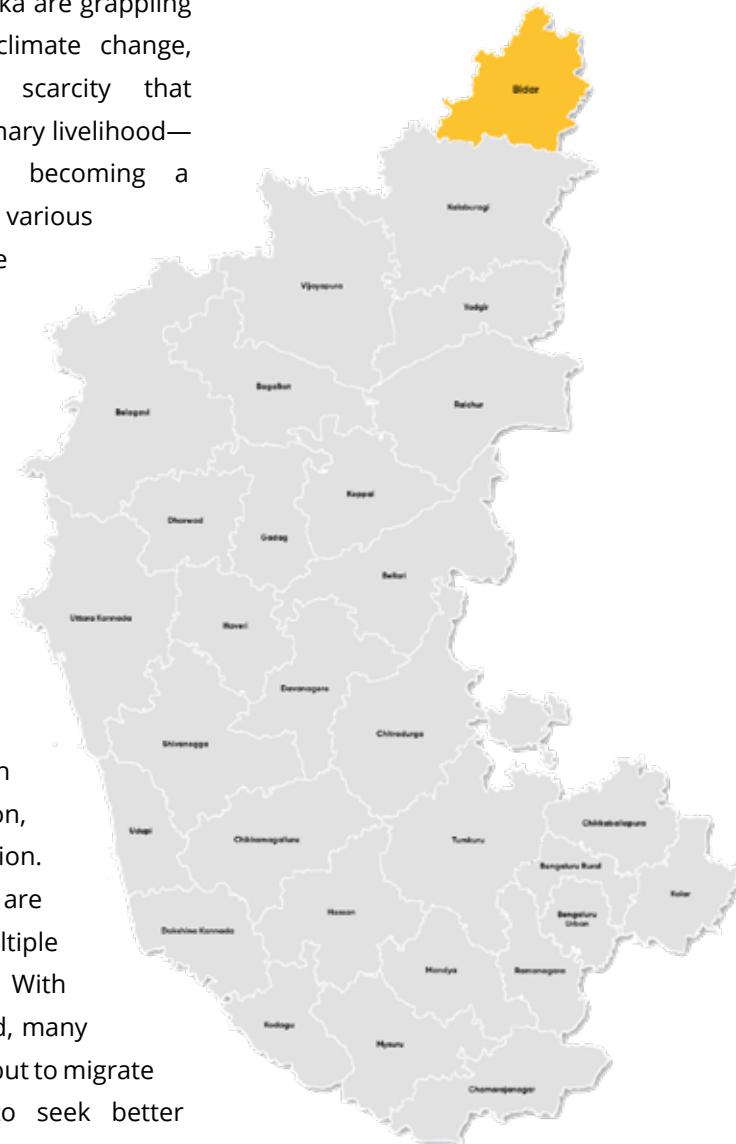
***Pitar Sabar***

TARGISING VILLAGE



Rural communities in Karnataka are grappling with challenges posed by climate change, particularly severe water scarcity that significantly impacts their primary livelihood—agriculture. With droughts becoming a common occurrence in various regions across Karnataka, the northern part of the state is particularly vulnerable, lacking proper irrigation systems and heavily relying on traditional farming methods.

The situation is further aggravated by poor water management practices, exacerbating the scarcity of fundamental resources such as drinking water, education, health, and sanitation. Consequently, communities are compelled to confront multiple challenges simultaneously. With their livelihoods compromised, many people are left with no choice but to migrate as a desperate measure to seek better opportunities elsewhere. The interdependence of climate change, water scarcity, agricultural disruptions, and health risks presents a significant hurdle for the sustainable development of rural areas in Karnataka.



## IMPACT IN 2022-23



LIVES IMPACTED

**18**

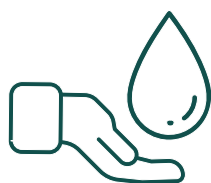
THOUSAND PEOPLE



LAND TREATED FOR SOIL AND  
WATER CONSERVATION

**896**

HECTARES



WATER SAVED

**166.5**

MILLION LITRES



WATER STORAGE  
CAPACITY CREATED

**179.2**

MILLION LITRES

### • COMMUNITY SPEAK •



In my ancestral fields, I saw crops wither due to droughts and chemicals. Then came the 'Improving Farm based Livelihoods through Watershed Approach,' backed by Wells Fargo International Solutions Pvt. Ltd. I embraced the transformative power of the System of Crop Intensification (SCI). With dedication, I nurtured a small plot, yielding 800 kg of harbara crops. I shared my success through workshops, inspiring others to join the sustainable journey. Today, my story resonates, guiding countless towards a greener future.

***Basaava Swami***

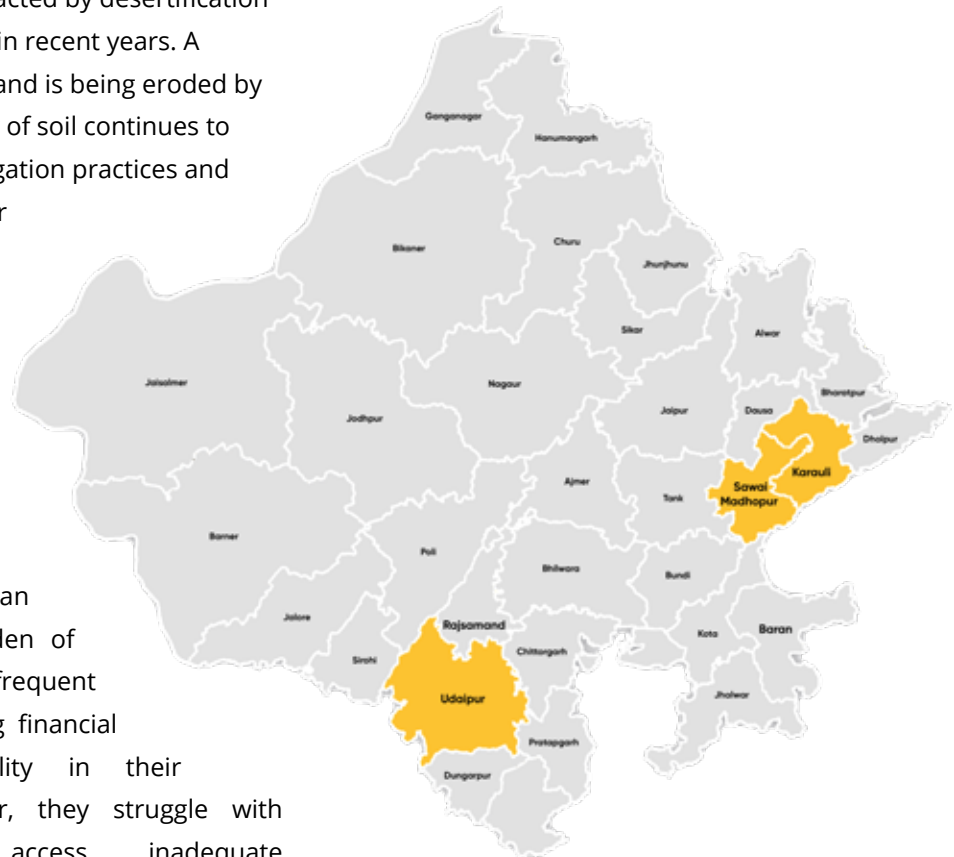
KHERADA VILLAGE

## Rajasthan

Rajasthan, one of India's largest states, has been significantly impacted by desertification and land degradation in recent years. A staggering 42% of its land is being eroded by wind, while the quality of soil continues to decline. Inefficient irrigation practices and excessive groundwater exploitation have exacerbated water scarcity, posing a serious threat to the agricultural productivity of rural communities.

Farmers in Rajasthan bear the heavy burden of high input costs and frequent crop failures, creating financial strain and instability in their livelihoods. Moreover, they struggle with limited market access, inadequate transportation infrastructure, and weak market linkages, making it difficult for them to secure fair prices for their hard-earned produce. Unfortunately, erratic rainfall patterns further compound these challenges, leading to low agricultural production and widespread food insecurity.

The adverse effects of these hardships extend far beyond the farms, as rural communities



also grapple with insufficient access to safe water and sanitation facilities. This dire situation further exacerbates their already difficult circumstances, negatively impacting their health and overall well-being. Moreover, the lack of technical and entrepreneurial skills among the youth and women hinders their ability to diversify their livelihoods and explore alternative opportunities.

## IMPACT IN 2022-23



LIVES IMPACTED

**142**

THOUSAND PEOPLE



WATER STORAGE  
CAPACITY CREATED

**41.4**

MILLION LITRES



### • COMMUNITY SPEAK •

Despite owning 4 acres of land, feeding my family of four was always a worry. Lack of irrigation meant only 1.25 acres could be cultivated. It was the IndusInd Bank CSR Flagship Programme that came to my rescue. The project team deepened my well, providing a reliable water supply for irrigation. Now, my entire land is cultivated and I have the opportunity for a second cropping season, which was previously impossible!

***Haricharana Shahariya***

GUWARI VILLAGE





♦ COMMUNITY HEROES ♦

# SEEDS OF CHANGE

*The Collective Strength of  
Appireddypally*



*Members of Sri Jeevanadhara Paraspara Rythu Sahakara Sangam Limited, from Appireddypally village, Telangana*

Climate change wreaked havoc on the farmers of Appireddypally, a quaint village in Telangana. Farmers were struggling to make ends meet, facing menacing pests, diseases, and degrading soil. The village was at a crossroads - many were migrating to far away lands in search of work, while farmers who stayed back were witnessing dwindling yields. They were in desperate need of a solution that could save them from their ordeal.

The arrival of Axis Bank Foundation and WOTR with the 'Rural Livelihoods Project' offered a glimmer of hope. With the aim to improve their livelihoods, farmers were encouraged to form a Mutual Aided Cooperative Society (MACS) that could facilitate faster and cheaper supply of materials required for input, provide access to group knowledge, skills and new practices, as well as provide marketing support for better profits on the yield. Hearing the proposition, the farmers hesitated at first, fearing the unknown. But they soon realised that their

collective strength could forge a brighter future.

Fueled by unwavering determination, the farmers united to establish the 'Sri Jeevanadhara Paraspara Rythu Sahakara Sangam Limited' MACS—an epicentre of transformation that kindled collaboration and unity among them. The path was rugged, particularly in adopting novel practices like Daincha, the green manure. Yet, they bolstered each other, sharing wisdom and forging ahead through every obstacle.

**Green manure refers to crops that are grown and then ploughed into the soil to improve its fertility and structure.**

As the green manure unfurled across their fields, the soil healed, crops thrived, and income from yields surged from Rs. 15,000 to Rs. 25,000 per acre. The impact cascaded to their families, offering better education



*Application of green manure*

prospects for their children and breaking the shackles of poverty. Once sceptics, 500 proud and empowered members of the MACS now revelled in the tangible rewards of their labour and newfound solidarity.

Word of their triumph surged like wildfire, sparking hope in nearby villages. The Daincha initiative metamorphosed into a symbol of prosperity and sustainability. These farmers evolved into agents of change, inspiring 20 other MACS to be established and follow their path, collectively cultivating a vast expanse of approximately 1,262 hectares. Together, they were reshaping the agriculture landscape for present and future generations. Golla Gangappa, a resolute MACS member, attested, "A united community catalysed a positive revolution in our village. Today, we ensure that we participate in meetings, training, and demonstrations, and keep steering our village and our farmers towards a brighter future for us all."



*Application of green manure*

As the sun descended over Appireddypally's fields, it painted the terrain in resplendent gold, mirroring its people's indomitable spirit—unified, resilient, and teeming with hope for a sustainable and radiant tomorrow. ■



# THE WOTR CENTRE FOR RESILIENCE STUDIES (W-CReS): APPLIED RESEARCH AND POLICY ADVOCACY



## KEY PROJECTS IN 2022-23

### NATURE-BASED SOLUTIONS FOR SUSTAINABLE RURAL LANDSCAPES AND CLIMATE RESILIENCE

In partnership with HSBC Software Development (India) Private Limited, W-CReS is executing a project in Maharashtra and Telangana which looks at practical applications of EbA, including riverine restoration, water stewardship, climate-resilient farming, and green livelihoods. The project activities align with key national goals including increasing farmers' income, inclusive development, and a commitment to restore 26 million hectares of land by 2030. Simultaneously, it supports international agendas like the SDGs, the CBD, the Paris Agreement, and LDN targets.

### INTEGRATED WATER RESOURCES DEVELOPMENT AND PROMOTION OF EBA IN MAHARASHTRA AND TELANGANA – A PRACTICE AND KNOWLEDGE EMBEDDED APPROACH

The project in collaboration with Honeywell Hometown Solutions India Foundation (HHSIF) is pioneering a knowledge-centric approach to enhance awareness and mobilise rural communities for EbA measures. The objective is to empower these communities to harness their natural landscapes and ecosystems for sustainable livelihoods. In select villages, this initiative is spearheaded through farmer collectives, including FPOs. The project aims to not only protect the environment but also generate substantial income for the communities involved. Simultaneously, a comprehensive Land Surface Temperature (LST) study is underway which seeks to assess the impact of climbing temperatures on water resources, land, and agricultural practices in particular regions of Maharashtra. Furthermore, this project supports the ECOBARI collaborative, led by WOTR & W-CReS, to upscale EbA across the country.



## IMPACT ASSESSMENT OF REJUVENATED WATER BODIES IN SEMI-ARID MAHARASHTRA

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Backed by the A.T.E. Chandra Foundation (ATECF), this research project focuses on rejuvenating water bodies in Maharashtra's rainfed regions to enhance agricultural productivity and water security. Covering nine tanks in Beed and Nanded, the study underscores the transformative effect of desilting on agriculture, water resources, and farmers' economic stability. Notably, the extracted silt is repurposed to enhance soil health and crop yield, thereby minimising the reliance on chemical fertilisers. A comprehensive socio-economic analysis reveals promising results, with an impressive projected Return on Investment (ROI) of 109%. The study underlines the crucial role of in-depth preliminary research in optimising the desilting process, demonstrating that strategic conservation can drive significant environmental and economic improvements.

## STUDY ON INDOOR HEAT MEASUREMENT DATA FROM LOW-INCOME HOUSEHOLDS IN RURAL AND URBAN SOUTH ASIA

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Addressing the knowledge gap on indoor heat exposure in South Asia's rural-urban spaces, this study provides an extensive dataset of indoor and outdoor heat measurements from five low-income sites, including Maharashtra and Delhi in India, Dhaka in Bangladesh and Faisalabad in Pakistan. The data, collected from 206 indoor loggers and five outdoor stations, can help researchers understand variations in temperature and humidity in low-income households, aiding in the identification of factors intensifying heat stress. This crucial information can guide the planning and implementation of heat stress mitigation actions.

*Read more here*



## FOCUS ON AGRICULTURE IN THE NATIONAL WATER POLICY

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The National Water Policy (NWP), last revised in 2012, serves as a roadmap for Indian states in policy creation and legal frameworks. In 2019, the Ministry of Jal Shakti appointed a revision committee for the NWP, chaired by Mihir Shah. This article recommends changes to the NWP on the theme of agricultural water use, proposing several transformative strategies. These include the adoption of an ecosystem-centric approach, climate-proofing watersheds, fostering water stewardship, implementing a 'Water Governance Standard',

promoting climate-resilient agricultural practices, and incentivising the cultivation of rain-fed crops. These proposed alterations, if incorporated, could pivot India's 'water use narrative' decidedly towards sustainability, marking a crucial step in the nation's environmental stewardship.



*Read more here*



## STUDY ON MENTAL MODELS OF SUSTAINABLE GROUNDWATER MANAGEMENT AMONG FARMERS IN SEMI-ARID REGIONS OF MAHARASHTRA, INDIA

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This research delved into the mindset and perceptions of farmers towards sustainable groundwater management in Maharashtra's semi-arid areas. The W-CReS team used qualitative interviews and systems mapping to explore how experiences with past droughts and water scarcity influence farmers' actions and perspectives. The ultimate aim was to pinpoint policy catalysts that could stimulate and foster sustainable groundwater management practices.

*Read more here*





ECOBARI (Ecosystem-based Adaptation for Resilient Incomes) is a multi-stakeholder collaborative which aims to foster cooperation and knowledge-sharing among diverse stakeholders which include government representatives, Civil Society Organisations (CSO), businesses, academic institutions, NGOs, and media. Together, the collaborative strives to amplify the adoption of EbA practices in the Global South.

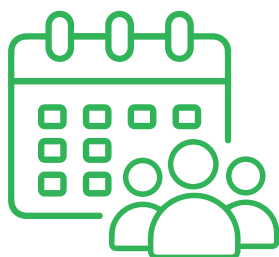
EbA, an environmentally considerate response to climate change, prioritises conservation, sustainable management, and restoration of ecosystems to enhance resilience. The approach is grounded in three pillars: participatory governance, adaptive capacities, and ecosystem services and biodiversity. These elements amalgamate into a comprehensive, sustainable, and holistic adaptation strategy to combat climate change.

## A LOOK BACK AT 2022-23



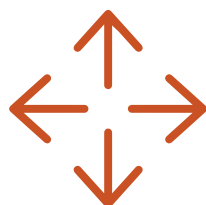
- Partnering with WOTR, ECOBARI co-hosted a webinar titled 'Farm Ponds for securing agriculture in rainfed regions: A call for sustainable approaches' with W-CReS and the National Rainfed Area Authority (NRAA). This engaging dialogue hosted a diverse array of stakeholders discussing farm ponds' benefits and challenges, privatisation of groundwater resources, and sustainable strategies for rainfed agriculture.
- Celebrating ECOBARI's first anniversary, a webinar titled, 'Promoting FPOs for resilient incomes and sustainable farming practices in India' convened experts and practitioners to debate emerging issues and opportunities surrounding FPOs, fostering better stakeholder communication.

## EVENTS AND WORKSHOPS



- ECOBARI contributed to the organisation of a unique film screening event, 'Building Resilience' in association with the echo network, CEEW and NCBS. The event showcased short films highlighting climate-resilient agricultural and water management practices in Rajasthan and Maharashtra, supplemented by an expert panel discussion.
- Partnering with SOPPECOM, TMG Think Tank, and WOTR/W-CReS, ECOBARI organised a two-day workshop 'Strengthening Locally-led Water Governance through Digitalisation'. The event delved into the potential of using digital tools to enhance participatory and equitable water management, encompassing data collection, monitoring, budgeting, and climate-resilient crop planning.

## CAPACITY BUILDING



Together with WOTR, W-CReS, and IDH, ECOBARI facilitated three capacity-building sessions focused on:

- Optimising Water Management for Increased Agricultural Productivity: Mitigating Agricultural and Income Losses through Improved Water Management
- CRA Practices for EbA in Semi-Arid Regions

ECOBARI remains steadfastly committed to scaling up EbA practices and fostering resilient incomes, both in India and worldwide, while continuously addressing the evolving challenges of climate change.

Know More about ECOBARI at [www.ecobari.org](http://www.ecobari.org)




## W-CReS RESEARCH OUTPUTS 2022-23


JOURNAL PAPERS	AUTHORS	SCAN TO READ
1 Indoor heat measurement data from low-income households in rural and urban South Asia	Premasagar Tasgaonkar, Dipak Zade, Sana Ehsan, Ganesh Gorti, Nabir Mamnun, Christian Siderius & Tanya Singh	
2 Assessment of human health risk arising due to fluoride and nitrate in groundwater: a case study of Bhokardan tehsil of Maharashtra	Dr. Shrikant Mukate, Sarojini Bhoominathan & Vijay Solanky	
3 Focus on Agriculture in the National Water Policy	Crispino Lobo, Dr. Marcella D'Souza, Dr. Eshwer Kale	
4 Drawdown Area Farming: A Sustainable Agriculture Approach and its Social Impacts on the Rural Population in Jalna district, Maharashtra	Ajit Jadhav, Ankita Yadav and Madhav Gholkar, Anuradha Phadtare, Swapnil Vyas	
5 Mental models of sustainable groundwater management among farmers in semi-arid regions of Maharashtra, India	Udita Sanga, Upasana R Koli	
BOOK	AUTHORS	SCAN TO READ
6 The Water Governance Standard – Making Water Everybody's Business	Crispino Lobo, Dr. Eshwer Kale, Mandar Sathe and Rishu Garg	
BOOK CHAPTERS	AUTHORS	SCAN TO READ
7 Urban water resources and its sustainable management	Dr. Taufique Warsi, Suryadipta Mukherjee, George Biswas, Tarik Mitran, and Syed Shams Rizvi	
8 Smart Solutions: Reimagining smart and sustainable agriculture through innovative technology	Ujjval Pamnani and Vijay Solanky	


BOOK CHAPTERS	AUTHORS	SCAN TO READ
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9	The Last Straw	Dipak Zade and Rishu Garg	<i>Published in Print Only</i>
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WEB ARTICLES	AUTHORS	SCAN TO READ
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10	Enhancing Household Food and Nutrition Security With Multilayer Farming	Prithviraj Gaikwad	
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11	Maharashtra Groundwater Act, 2009: Strengths, Weaknesses and Recommendations (in Marathi)	Dr. Eshwer Kale	
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12	EbA approach: Sustainable solution to achieve India's climate change goals	Crispino Lobo & Arjuna Srinidhi	
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13	Focus on Agriculture in the National Water Policy	Crispino Lobo, Dr. Marcella D'Souza, Dr. Eshwer Kale	
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WORKING PAPERS	AUTHORS	SCAN TO READ
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14	Ensuring Food and Nutrition Security through the Promotion of Agrobiodiversity in the Semi-arid Region of Maharashtra	Ajit Jadhav, Anuradha Phadtare, Mayurkumar Deshmukh, Prithviraj Gaikwad, Priya Sinha, Dr. Sourya Das	
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15	Effectiveness of Group Micro Irrigation Model and Package of Agricultural Practices in Enhancing Climate Resilience in Semi – Arid Regions of Maharashtra, India	Arun Bhagat, Upasana R Koli	
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◆ BUILDING COMMUNITY RESILIENCE ◆

# SYSTEMIC INTERVENTIONS EMPOWER RURAL COMMUNITIES IN THE FACE OF CLIMATE CHANGE

📍 *Madhya Pradesh*





The unrelenting force of Climate Change, has been mercilessly tearing through the fabric of rural livelihoods, dramatically altering weather patterns and ruthlessly reducing crop yields. This wicked transformation is leaving countless farmers in the suffocating grip of food insecurity and the devastation of lost income. As global temperatures soar, the once-reliable rhythms of precipitation have been thrown into chaos, unleashing extreme weather events and throttling agricultural productivity.

**In the heart of India, the lifelines of crop yields are projected to wither away by a staggering 10-40% by 2100 due to climate change's relentless onslaught.<sup>1</sup>** This insidious reality is deepening the chasm of socio-economic divides, leaving the underprivileged trapped in an unending cycle of poverty and deprivation.

WOTR, hand in hand with its funding partners, is bravely confronting these formidable challenges by mobilising communities to build resilient and sustainable ecosystems. Harnessing a systemic ecosystems restoration approach and standing shoulder to shoulder with vulnerable rural populations, it is mobilising them to adapt to the consequences of climate change.

**One such inspiring partnership is the 'Natural Resource Management and Improving**

**Sustainable Livelihood Opportunities' project, a joint effort executed in eight villages within the Chhindwara district of Madhya Pradesh, with HDFC Bank Parivartan.** Between 2016 and 2021, this project passionately laboured to bolster the capacity of rural communities to adapt to the shifting tides of climate, enabling them to seize existing schemes for their own development and progress, and ultimately, reclaiming hope and dignity for generations to come.

Nestled within the heart of Madhya Pradesh, Chhindwara district is predominantly rural, where the majority of its inhabitants depend on agriculture to sustain their livelihoods. This district is beleaguered by a multitude of agricultural and livelihood challenges, such as low productivity arising from the devastating effects of climate change and resource exhaustion, an unsteady reliance on monsoon-dependent farming, the burden of fragmented landholdings, and a disheartening lack of alternative income sources.

The winding River Kanhan, a tributary of the mighty Wainganga River, meanders through most of the chosen eight villages, carving an undulating landscape that gave rise to high water runoff during the rainy season. As a consequence, the once-fertile topsoil layer of agricultural lands had been steadily



<sup>1</sup> National Mission for Sustainable Agriculture





washed away, causing a heartrending decline in agricultural productivity over the years. The local community was forced to confront seemingly insurmountable obstacles, including escalated water runoff during rainy seasons, soil degradation due to leaching, and alarmingly dwindling groundwater levels that exacerbated water scarcity.

Compounding these difficulties is the remote location of these villages, which left the residents with few livelihood options beyond agriculture. Some determined farmers attempted to cultivate oranges alongside regular crops, but the uneven terrain hampered steady water availability for irrigation. With groundwater levels plunging below 50 feet, the situation became increasingly dire during the scorching summer months. In a desperate bid to overcome these hardships, approximately 70 to 80 percent of the population migrated to urban centres (mainly Nagpur) after the Rabi season.

The driving force behind the 'Natural Resource Management and Improving Sustainable Livelihood Opportunities Project' was a steadfast commitment to empower rural communities. **The aim was to enhance their capacity to adapt to the ever-changing climate, while effectively utilising available resources and schemes to foster holistic development.**



WOTR has persistently emphasised the importance of systemic interventions in addressing rural poverty. This philosophy was applied in the current context, focusing on rejuvenating the ecosystem and its associated services. Central among these was the restoration of water and soil resources. This revitalisation led to an expansion of cultivable land, increased cropping seasons, and a wealth of livelihood opportunities for all, particularly highlighting the importance of women in decision-making roles.

Through these collective efforts, the community experienced improvements in health, sanitation, nutrition, and education. The project acted as a supportive force, guiding the community towards resilience and a more promising future.

***Read the full story here:***



## FUNDING PARTNERS



A. T. E CHANDRA FOUNDATION



ACCENTURE SOLUTIONS PVT. LTD.



APRAAVA WIND ENERGY (KHANDKE) PVT. LTD.



ARTECO COOLANTS INDIA PVT. LTD.



ATLAS COPCO (INDIA) LTD.



AXIS BANK FOUNDATION



AZIM PREMJI PHILANTHROPIC INITIATIVES PVT. LTD.



BAYER FOUNDATION INDIA



CRISIL FOUNDATION



EATON INDIA FOUNDATION



EDUCATION FOR EMPLOYABILITY FOUNDATION(E2F)



GLENMARK LIFE SCIENCES LIMITED



GRUNDFOS PUMPS INDIA PVT. LTD.



HDFC BANK LTD.



HINDUSTAN UNILEVER FOUNDATION



HONASA CONSUMER PVT. LTD.



HONEYWELL HOMETOWN SOLUTIONS INDIA FOUNDATION



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MAHINDRA & MAHINDRA LTD



NATIONAL AGRICULTURE BANK FOR RURAL DEVELOPMENT



NATWEST INDIA FOUNDATION



PERNOD RICARD INDIA FOUNDATION



QUALCOMM INCORPORATION



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ROTARY CLUB OF BOMBAY CENTRAL CHARITABLE TRUST



ROTARY CLUB OF POONA



ROTARY CLUB OF POONA  
CHARITABLE TRUST



ROTARY CLUB OF PUNE METRO  
CHARITABLE TRUST (RCPMCT)



RURAL DEVELOPMENT  
DEPARTMENT - (MGNREGA),  
GOVERNMENT OF JHARKHAND



SELF-RELIANT INITIATIVES  
THROUGH JOINT ACTION (SRIJAN)



SPAN PUMPS PVT LTD.



TATA PROJECTS LIMITED (TPL)



TATA STEEL FOUNDATION



WELLS FARGO INTERNATIONAL  
SOLUTIONS PRIVATE LIMITED



YES FOUNDATION

## KNOWLEDGE PARTNERS

WOTR has established partnerships with prestigious academic centres and universities to actively engage in applied research, addressing real-world issues through a transdisciplinary approach. This collaborative approach is crucial for disseminating research findings and knowledge to diverse target groups. We are proud to collaborate with the following esteemed knowledge partners:



INDIAN COUNCIL OF  
AGRICULTURAL RESEARCH (ICAR)



BHARATI VIDYAPEETH INSTITUTE  
OF ENVIRONMENT EDUCATION  
AND RESEARCH (BVIEER)



INDIAN METEOROLOGICAL  
DEPARTMENT (IMD)



WAGENINGEN UNIVERSITY &  
RESEARCH (WUR)



MAHATMA PHULE KRISHI  
VIDYAPEETH (MPKV)



VASANTRAO NAIK MARATHWADA  
KRISHI VIDYAPEETH PARBHANI  
(VNMKV)



CENTRAL RESEARCH INSTITUTE  
FOR DRYLAND AGRICULTURE  
(CRIDA)



TMG - THINK TANK FOR  
SUSTAINABILITY (TMG)



THE ECHO NETWORK (TEN)



SAVITRIBAI PHULE PUNE  
UNIVERSITY (SPPU)



♦ COMMUNITY HEROES ♦

# RISING BEYOND BARREN LANDS

***Kanta Golayit's*** Quest for  
Community Transformation





In the sunbaked landscapes of Devnalamal, Kanta Golayit's days were defined by the relentless rhythm of her hands working in the fields. Fields that weren't hers. Fields that offered no bounty, just the punishing weight of a life tethered to the fortunes of the land. Her dreams, like the land she worked on, seemed barren, restricted to the endless cycle of her labour.

However, Kanta's journey was destined to take a different path, a path that would not only transform her life but also the lives of the women in her village. **The 'Natural Resource Management and Sustainable Livelihood Opportunities' program, supported by HDFC Bank's Parivartan, offered Kanta a new lease on life.**

Seizing the opportunity, Kanta immersed herself in the program's training sessions. From soil and water conservation to health and nutrition, she eagerly absorbed knowledge like parched soil soaks in the rain. She began to realise her potential, not just as a labourer but as a leader who could voice her opinions and effect change.

Fueled by her newfound knowledge and driven by the desire to free herself and her community from the clutches of poverty, Kanta emerged as a beacon of hope. Recognising her leadership qualities, the Village Development Committee appointed her as the Wasundhara Sewika. In this role, she undertook the mission of improving the health and well-being of women, adolescent girls, and young children in her village.

Kanta did not limit her newfound wisdom to community work. She began cultivating her own land, transforming it from a barren



*Kanta Golayit, Anganwadi worker from Devnalamal village in Chhindwara district, Madhya Pradesh*

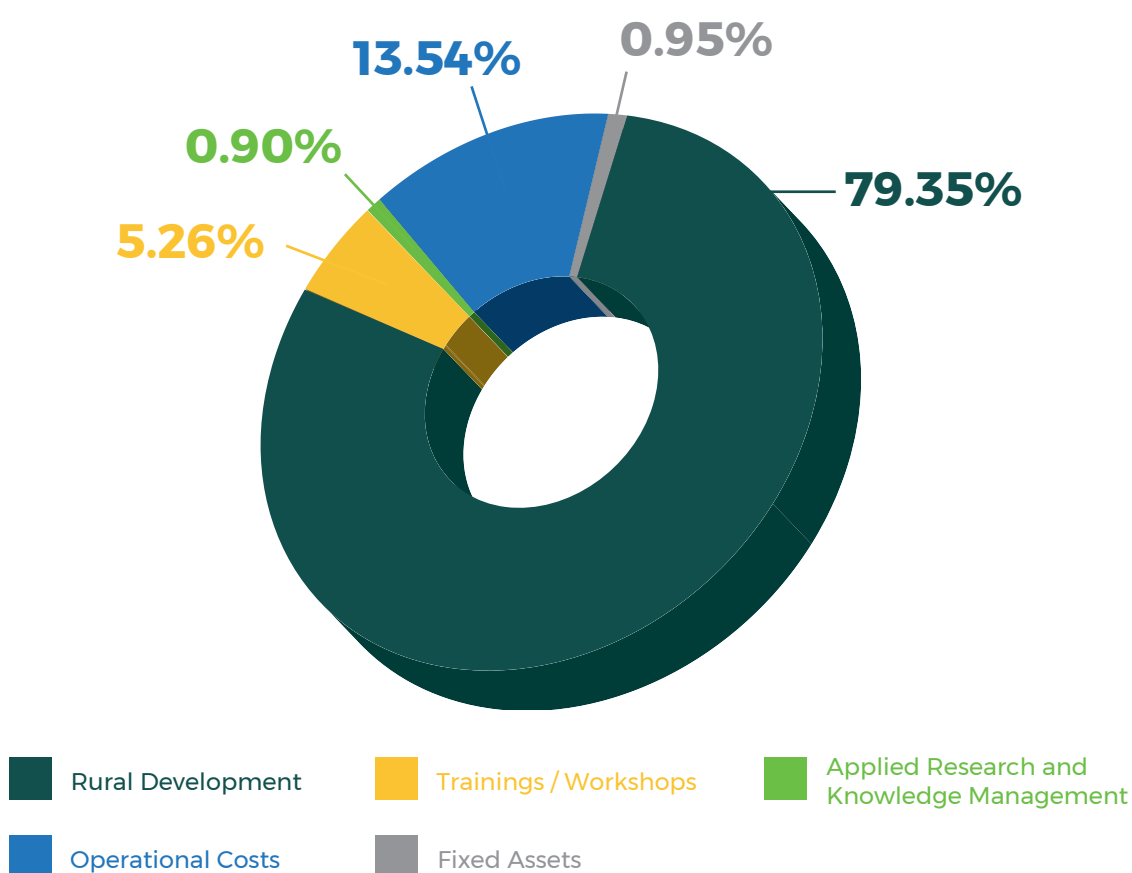
stretch into a symbol of hope and prosperity. Furthermore, she acquired the basic know-how of looking after livestock, taking on the mantle of a Pashu Sakhi (animal health volunteer). And when called upon to shoulder additional responsibilities as an Anganwadi worker, she rose to the challenge, embracing her dual roles with dedication and grace.

**Today, Kanta Golayit, once a mere labourer, is not just a farmer but a pillar in her community.** She is now looking ahead, dreaming of establishing a women-led milk dairy in her village. **Her vision is to create meaningful business opportunities for women, giving them the tools to enhance their skills and contribute to the financial well-being of their families.**

Kanta's journey reminds us that every person, given the right opportunities, can make a difference. Through her resilience and determination, Kanta has transformed from an ordinary labourer to a community hero, illuminating the path for others and proving that a healthy community truly starts with the empowerment of its women. ■

## OVERVIEW OF PROJECT EXPENDITURE IN THE YEAR OF 2022-23

SR. NO.	EXPENDITURE	EXPENDITURE IN %	AMOUNT (Rs.)
A	Rural Development	79.35%	57,10,42,838
B	Trainings / Workshops	5.26%	3,78,63,733
C	Applied Research and Knowledge Management	0.90%	64,58,396
D	Operational Costs	13.54%	9,74,16,132
E	Fixed Assets	0.95%	68,61,905
TOTAL :			71,96,43,004



FUNDS ADDITIONALLY SECURED THROUGH COMMUNITY CONTRIBUTION AND  
CONVERGENCE THROUGH VARIOUS SCHMES: **RS 56,94,83,070**





WOTR is a nationally and globally recognised leader and think tank in rural development. Committed to eradicating the root causes of rural poverty, WOTR champions ecosystem rejuvenation and the strengthening of community resilience to climate change. By enhancing water availability, improving land and agricultural productivity, diversifying livelihoods, empowering women, and bolstering the health and well-being of vulnerable rural communities, WOTR has made significant strides in transforming rural landscapes. The organisation's unique approach brings together a diverse range of stakeholders, including practitioners, academics, researchers, trainers, and policy makers, fostering collaborative efforts to build the resilience of rural communities. Over the course of its 30-year existence, WOTR has worked in 5,107 villages across 10 states in India, positively impacting the lives of 4.95 million people. For more information, please visit

[www.wotr.org](http://www.wotr.org)



Initiated in 2007 and set up as an autonomous unit in 2016, W-CReS (the WOTR Centre for Resilience Studies) undertakes multi-stakeholder, applied research on ground-level problems using a trans-disciplinary approach. The objective of W-CReS is to understand causal relationships and drivers of behavioural change, identify and test effective strategies for change and contribute to capacity building and policy enhancement. W-CReS has formal MOUs with leading national and international research and scientific institutions including ICAR, IMD, and CRIDA among others. Both WOTR and W-CReS work in close collaboration with civil society entities, companies, and the federal and state governments to achieve their objectives.



