Building Community Resilience through Ecosystem-based Adaptation

Annual Report 2020-21
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We are pleased to present WOTR’s Annual Report for 2020-21. The year also marks the completion of 28 years of WOTR’s journey in transforming rural lives amid a myriad of challenges including those posed by climate change, ecosystem degradation, rising inequality and a worldwide pandemic. Despite the challenges, we have taken significant strides in enabling the rural communities we work with and rejuvenating the ecosystems they abide in. For this we have been employing the Ecosystem-based Adaptation approach to promote sustainability in rural areas by providing livelihoods opportunities, biodiversity conservation, regenerating degraded ecosystems, improving health and nutrition, and overall quality of life.

In the pages that follow, we update you on the progress we have made using this distinctive approach that aims at creating resilient communities.

In 2020-21, WOTR worked in 1,008 villages, 69 districts and 7 States (Maharashtra, Telangana, Madhya Pradesh, Rajasthan, Jharkhand, Odisha, and Chhattisgarh).
The pandemic reminds us that we are all more susceptible than we realise and that we are all interdependent - what happens to one person can quickly spread to many others. It also serves as a reminder that issues that impact the human family must be handled by everyone. The solution to this and many other issues, particularly those involving the environment, is contingent on cooperation. Finally, we must remember that we must work as one if humanity is to thrive.

WOTR has undertaken various measures to manage and address the COVID-19 outbreak - distributing essentials, creating awareness, generating employment supporting livelihoods activities across seven states - Maharashtra, Telangana, Madhya Pradesh, Rajasthan, Odisha, Jharkhand, and Chhattisgarh.

WOTR’s COVID-19 rapid response actions have impacted over 6,22,000 people from 1,24,510 households in 671 villages across 26 districts in 7 states. (The below data is of the 1st and 2nd COVID wave)

• Since April 2020, 3,375 awareness sessions have been organised by WOTR, impacting 1,66,104 people.
• WOTR, along with MGNREGS, has created 3,74,867 labour days employing 21,974 people. 12,512 families have benefitted from this since April 2020. The employment generated has led to Rs. 9.21 crores being disbursed in wages.
• Since early April, WOTR has distributed 9,815 grocery kits, 41,197 sanitary kits, and 90,476 face masks made by 397 tailors.
• In Jharkhand, Maharashtra, and Telangana, 1,973 families have received support through FPOs selling over 12,895 quintals of rice, wheat, paddy, fruits, and vegetables, amounting to Rs. 2.5 crores.
• 43,169 households have benefitted from 32,860 kitchen gardens and 1,240 multilayer farms.
• Masks, sanitisers, homemade protein powder, seeds for kitchen gardens and multilayer farms, immunity booster medicines, grocery kits, medical kits, oxygen concentrators, oximeters, and medical equipment were distributed to 34,354 families. In addition, families who lost their breadwinners were given assistance. The importance of immunisation, identifying COVID-19 symptoms and protection, and COVID-19 equipment usage was included in training and awareness events.

All of this work has been possible because our partners have stood besides us, bringing relief to thousands amidst the uncertainty, and for that we are grateful. We continue to strive forward, tackling rural poverty at its root to realise the vision of resilient rural communities thriving within vibrant and sustainable ecosystems.

Prakash Keskar
Executive Director, WOTR

Crispino Lobo
Managing Trustee, WOTR

Marcella D’Souza
Director, W-CReS
Reena Adivasi is a 30-year-old woman from Pateriya Mal village in Damoh district of Madhya Pradesh who lives with three other family members. She used to work as a labourer along with her spouse to produce bidis, which was harming her health. She could sew and had some expertise with it, but she did not have the resources to make it a livelihood. The COVID-19 pandemic, however, created an entire industry focused on the development of protective face masks. On learning about WOTR’s initiative aimed at enhancing livelihoods options for landless farmers, Reena met Rashmi Gond, a Wasundhara Sevika who helped her submit an application to the Village Development Committee, explaining her financial situation and requesting assistance. Reena’s request was granted, and she was given a sewing machine, which she has effectively utilised to make masks and earn a living. Through this initiative, she now earns Rs. 3000 per month and she sews clothes in the comfort of her home. In addition to that, she is now able to manage her domestic work better since she now has the flexibility to choose her working hours.
With the emphasis on communities and ecosystems, WOTR is also in the process of transitioning to a new brand identity. Both WOTR and W-CReS have new logos and brand assets. The website has also been redesigned to reflect this new identity.

The new WOTR logo attempts to capture the holistic endeavours it undertakes to address rural poverty by enhancing the sustainability of the ecosystems people live in. It aims to highlight the systemic response of adaptive sustainable development – nature, livelihoods, and wellbeing that WOTR, as an NGO, facilitates across scales in collaboration with communities and various stakeholders.

The new W-CReS logo brings together three mutually supporting components – the caring hand, the adaptable, sustainable fern leaf and life-supporting water, leading to balance – an essential quality for resilience. The logo has been designed to fill a circle. The circle is a universal symbol representing totality, wholeness, cyclic movement and, thus, nature, people, and our environment.

As we reflect on the past 28 years, we are grateful for the support that our well-wishers, donors, friends, and community partners have provided us. Thank you very much! We look forward to your continuing support and involvement with us.
WOTR at a Glance - 2020-21

Worked In
1,008 villages, 69 districts in 7 states
- Maharashtra
- Rajasthan
- Telangana
- Odisha
- Chhattisgarh
- Madhya Pradesh
- Jharkhand

Impacted
8,56,334 individuals
- 4,43,844 men
- 3,53,956 women
- 1,90,950 households

Water & Land
- Soil and water conservation in 8,198 HA of land
- 196 villages part of Water Stewardship Initiative
- Horticulture plants planted 67,410
- Afforestation on 110,241.2 HA
- 73.1 cr ltrs Water saved
- 8.56 lkhs people impacted by watershed
- 323.5 cr ltrs water storage capacity created
- 10 villages & 1,412 families benefitted from drinking water tanks

Women Empowerment
- 162 new Self-help Groups (SHGs) formed with 1,766 members; a total of 34,016 functional SHGs members during 2020-21
- 36 gender trainings with 918 participants
- 1397 women beneficiaries enabled to set up small scale businesses
- 295 SHG trainings with 7,081 women participants
### Agriculture

- **1,138 villages** enabled with Sustainable Agriculture Practices
- **3,577 HA** covered under System of Crop Intensification (SCI)
- **8,597** Unique Agro Advisories sent to **26,610 farmers** in **298 villages**
- **131** Active Automated Weather Stations (AWS)

### Livelihoods

- **4,143** farmers and 46 villages benefitted from livelihood activities such as livestock, aquaculture, grain processing and kirana shops
- **146** Livelihood trainings provided to 583 males and 3,397 females
- **158** gootery units and 375 Back Yard Poultry (BYP) night shelters distributed

### Health, Nutrition and Sanitation

- **49** Health camps benefitting 2,386 beneficiaries
- **73** Health activities in villages benefitting 2,776 families
- **32,860** Kitchen Gardens
- **121** Child growth monitoring activities in 172 villages
- **1,240** multi-layer farming activities benefitting 43,169 beneficiaries

### Outreach & Communication

- **44** blog posts published
- **17** publications published including policy briefs, research reports and research articles
- **14** films developed for outreach & communication
The world is racing against time to reduce emissions and assist world’s most vulnerable people cope with climate impacts that are already present and will worsen in the coming years. Now is the moment to act.

Building Community Resilience through Ecosystem-based Adaptation

From the floods in Chennai to the Glacier Burst in Uttarakhand, from extreme heat waves now even affecting the north-western, central, and south-central regions of the country to destructive cyclones such as Amphan and Tauktae battering India’s Eastern and Western coasts, the need for making communities resilient to these vulnerabilities, is paramount. Adaptation is key. Climate change has a significant influence on fragile ecosystems, and communities living in these regions face significant challenges for survival. Consequently, ensuring climate resilient development is critical. Reducing community and ecological vulnerabilities in the country and addressing significant impacts of climate change on the ecosystem by developing climate resilient measures is the need of the hour.

To improve the adaptive capacity of marginalised communities and enable local governance, WOTR uses an integrated Ecosystem-based Adaptation (EbA) approach, promoting sustainability in rural areas by providing people with livelihoods opportunities, conserving biodiversity, regenerating degraded ecosystems, increasing sustainable access to water and improving health and nutrition in addition to the overall quality of life.

WOTR’s work has reached 9 states in the 28 years of its existence—Maharashtra, Madhya Pradesh, Telangana, Andhra Pradesh, Rajasthan, Jharkhand, Chhattisgarh, Odisha, and Bihar, impacting 3,970 villages and 39.5 lakh people. Moreover, it has trained over 4,56,484 people through various initiatives. Its work directly contributes to 9 of the 17 SDG goals and is aligned with other fundamental international conventions—Land Degradation Neutrality, the Paris Agreement on Climate Change, and the Sendai Framework on Disaster Risk Reduction.
As an organisation dedicated to helping communities adapt to changing realities, WOTR is also always learning, evolving, and adapting. At the core of the work WOTR does, lie the rural communities that WOTR empowers to emerge from poverty through a holistic approach that addresses the root causes of poverty. The vision and mission expound this commitment to rural India while the thematic areas capture the approach.

**Vision**

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

**Mission**

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.

**Thematic Areas**

WOTR works under five thematic areas: Water and Land, Agriculture, Livelihoods, Health, Sanitation, Nutrition and Women Empowerment

- **Water and Land**
  Securing adequate and safe water for the ecosystem, the community, and generating livelihoods; treating degraded soils to restore the land.

- **Agriculture**
  Enhancing productivity and profitability of farming, making farming practices climate-resilient and nature friendly, and arresting land degradation.

- **Livelihoods**
  Promoting alternate agri-based and other non-farm livelihoods to build a vibrant and resilient local economy.

- **Health Sanitation and Nutrition**
  Enabling people, especially women and children, to live healthy, well-nourished, and holistic lives in clean habitats.

- **Women Empowerment**
  Reducing the time poverty and drudgery of women, providing them access to economic opportunities and enabling their participation in decision-making so that they become equal partners in development.
Shifting weather patterns due to climate change including irregular rainfall and heatwaves impact the ecosystems we live in. Changes in the climate directly or indirectly affect many aspects of society in potentially disruptive ways. For example, extreme heat conditions can cause illness and deaths, especially among vulnerable populations; uneven and unseasonal rainfall cause massive crop damage triggering irreparable hardships to the farmers. One root cause of this climate variability is the damage we have caused to the ecosystems that support us. Healthier ecosystems offer rich biodiversity as well as more fertile soils and natural resources, apart from being a rich reservoir to store greenhouse gases. We need to restore a balanced relationship with the ecosystems that sustain us. This is essential to mitigating climate change, ensuring food security for a growing population, and halting biodiversity loss. WOTR’s strategy focuses on community-led ecological restoration and integrated water resource management. Using an integrated Ecosystem-based Adaptation (EbA) approach, WOTR restores degraded ecosystems to aid rural communities in adapting to climate change while also increasing livelihoods opportunities, enhancing health and nutrition, and improving the general quality of life and well-being.

Ecosystem-based Adaptation, or EbA, is a nature-based and human-centric approach to adaptation. Restoring the health of the ecosystem, maintaining it through participatory governance while also contributing to resilient incomes, food security and better adaptive capacity of the local community is at the heart of EbA. In practice, EbA is a holistic approach that combines several areas of intervention, both at the farm and landscape levels. WOTR’s comprehensive approach to Watershed development (WSD) forms the base on which climate-adaptive and ecosystem-based measures such as interlinked soil and water conservation measures, sustainable agriculture, locale-specific crop and weather advisories, water-use management, and biodiversity conservation are integrated under the EbA strategy.
SDGs Addressed

1. No Poverty
2. Zero Hunger
3. Good Health and Well-being
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
13. Climate Action
15. Life on Land
WOTR has developed its model based on its experience in watershed development, sustainable agriculture, water management, climate change adaptation, and local community governance. The model is known as the “Engine for Ecosystem-based Adaptation”.

The outer circle, comprising the five capitals, is the tangible frame within which human life unfolds. The five capitals – the physical, financial, social, human, and natural – must grow and develop simultaneously and harmoniously to sustain growth (DFID’s 5 capitals).

A set of five crucial requirements, all of which are essentially interrelated. To have empowered communities that live in dignity and enjoy well-being, a set of five essential conditions must be met: material adequacy (not just ‘increase’), security (freedom from fear of insufficiency, discrimination, and conflict), freedom of choice, healthy interpersonal relationships, and good health (Millennium Ecosystem Assessment 2005).

In the centre is WHOLENESS – a body, mind, spirit integration – a harmony rooted in centeredness, the space within which the individual and the community are one with the universe. When we work to conserve our Earth for the 7th generation, we will be conserving it for ourselves. It requires that we sense, understand, and respect the interconnectedness of the various components of the engine and take the necessary steps (adapt) to strike the balance that will maintain overall equilibrium. We would necessarily need to work together as a community and as a group of communities to achieve sustainability.
Adapting to the Climate Change Problem

Climate change is impacting communities worldwide, and its severe impact is being felt in India too. From drought to flooding, the most vulnerable communities in rural India bear the worst consequences.

The EbA approach by WOTR helps build systemic resilience in ecosystems and communities. This includes watershed development and ecosystem management, integrated water resource management, climate resilient agriculture, providing sustainable rural livelihoods opportunities, addressing health, nutrition, and sanitation issues, and taking initiatives to empower women, helping communities adapt to the effects of climate change.

The collage showcases a series of activities undertaken by WOTR and the subsequent transformation of the rural community and surrounding ecosystem.
Ecosystem-based Adaptation: A Nature-Based Approach to Help People Adapt to Extreme Weather and Climate Change
On the Ground –
Rejuvenating Communities and Ecosystems:
Water and Land

“Anyone who can solve the problems of water will be worthy of two Nobel Prizes—One for peace and one for science” – John Kennedy

Water covers about 71% of the Earth’s surface but only 4% of it is freshwater. Freshwater is essential for drinking, agriculture, irrigation, industry, and power generation. According to a report, two-thirds of the world’s population may face water scarcity by 2025. In addition, 600 million people, or more than half of India’s population, are already experiencing severe water scarcity. To make matters worse, many Indian states have recorded an increase in land degradation. The impacts of land degradation can be far-reaching, including loss of soil fertility, forced migration, soil erosion, and excessive nutrient runoff. India is in the midst of its worst-ever ecological crisis.

An ecosystem-based approach to water management entails looking at water as a shared resource with the ecosystem as its source. It promotes both supply side interventions such as water harvesting to demand side measures such as water budgeting, and crop selection, to promoting water use efficiency and participatory water governance. Through participatory Watershed Development, WOTR supports rural communities to capture and conserve water through rainwater harvesting structures, provide treatments for degraded soils, undertake soil and water conservation measures, afforestation and establish local representative bodies to undertake and manage these created assets on common lands effectively.

In addition, the Water Stewardship interventions promote judicious and efficient use of water. WOTR has been engaged in and assisted over 1008 villages in semi-arid and rainfed regions of the country to successfully regenerate their degraded landscapes. Its goal is to alleviate poverty among rural dwellers, particularly of the marginalised sector.
Integrated Watershed Development

- 8.56 lakh people impacted by watershed development.
- 323.48 crore litres of total water storage capacity created.
- From effectively controlling soil and water loss to improving forest and grass growth, soil and water conservation activities undertaken in 8,198 Ha, with 661 minor structures and 967 major structures impacting 1,008 villages.
- Afforestation/Reforestation with indigenous plants undertaken on 11,024 Ha with 3,550 species planted to encourage communities to conserve better and manage and restore their forests.

Water Governance and Stewardship

- Village Water Management Teams: 67 Jal Sevaks engaged with local communities, creating awareness about efficient use and management of water and encouraging water budgeting.
- Water Harvesting and Irrigation –
  - 1,867 farmers benefitted from drip and sprinkler irrigation in 1,890 Ha of land.
  - 463 farm ponds and 116 sunken ponds built.
  - 36 rain-gun units installed, irrigating a total area of about 355 Ha.
- 5,641 Crop Demonstrations (apart from System of Crop Intensification) done in 308 villages leading farmers to make smart choices suited to the local ecosystem and become more resilient to extreme weather events.
• Water Budgeting undertaken in 133 villages as part of the Water Stewardship Initiative, with 5,040 families adopting water management practices leading to water saving of around 731 million litres.

• Participatory Engagement through Community Based Organisations-
  - 5 Village Development Committee (VDC) melawas (Community Gathering) with 361 people trained for water stewardship work including 232 male participants and 129 female participants.

**Groundwater and Aquifer Mapping and Management**

• 7 aquifer management stakeholder engagement workshops conducted in 10 villages of Ahmednagar and Jalna districts of Maharashtra.
The Situation: Rajdongri village in Pandurna block is located in the Chhindwara district of Madhya Pradesh. The River Kanhan, a tributary of the Wainganga passes through all the 8 villages where WOTR’s project is being implemented. The topography of these villages is undulating in nature, which resulted in high water runoff during the rainy season. Along with rainwater, the upper layer of soil on fertile agricultural land would also get washed away, reducing land productivity. This, in turn, had an impact on agricultural output and farmer incomes, and was leading to distress migration of farmers for livelihoods opportunities.

The Solution: To address the issue, water conservation structures such as check dams and farm ponds were built with the financial support of HDFC Bank Parivartan. In addition, other watershed structures such as gabion structures, gully plugs, and loose boulder structures were also put up at various points from the ridge to the valley. This has resulted in increasing the availability of water for irrigation for the Rabi crops by an entire month and improved socio-economic conditions of the farmers.

The Success: Two check dams were built as part of the project which has increased the average water holding capacity to 12,00,000 litres. This has benefitted around 160 households. With the increased availability of water, farmers have begun to diversify their crops, and drinking water facilities for people and livestock have been established. In the past, only one crop of maize was cultivated during Kharif season. Now due to the availability of water for irrigation, in 50 acres of farmland a second crop of wheat and gram is being cultivated during the Rabi season. This in turn has reduced distress migration from the village.
Agriculture

“Investments in agriculture are the best weapons against hunger and poverty and they have made life better for billions of people”
- Bill Gates

Agriculture, particularly rainfed farming is in crisis. Crop productivity is beginning to be affected by climate variability, and weather-related losses are rising; adverse market conditions and diminishing soil health is resulting in low returns and higher cultivation expenses. WOTR’s Ecosystem-based approach to climate resilient agriculture assists farmers in developing a strategy to manage climate induced risks, lower cultivation costs, increase productivity and enhance their adaptive capacities. The approach helps tackle climate change impacts and assists the marginalised communities in effectively scaling climate change adaptation measures, mitigating climate-induced risks, and reducing the cost of cultivation while meeting environmental and socio-economic development goals. For this, WOTR employs strategies such as System of Crop Intensification, enhancement of soil health, effective and efficient water use, agro-meteorology, and promotion of afforestation and horticulture. In addition, it has also developed FarmPrecise, a mobile app that provides dynamic weather-based, crop management advisories tailored to crop and farm-specific conditions.
Sustainable Climate Resilient Practices

- 3,577 Ha of farmland covered under the System of Crop Intensification (SCI), benefitting 9,506 farmers.
- 1,972 vermicompost beds provided, 609 trainings on making organic formulations conducted with 7,137 farmers.
- 2,406 soil health cards distributed to farmers in 42 villages for better management of soil nutrients. 1,608 farmers benefited from the soil health tests.
- Enhanced capacity building for farmers through 1,413 farm field schools, attended by 19,725 farmers from 304 villages.
- 3,549 fodder demonstrations, 284 livestock camps, and 757 livestock owner training sessions conducted.
- Organic formulations such as Amrut Pani and Dashparni Ark* developed for pest and disease management, reducing crop losses and increasing production.
  - 5,547 farmers skilled in the preparation and distribution of Dashparni Ark, benefitting 353 villages and 7,613 farmers.
  - 5,097 farmers skilled in the preparation and distribution of Amrut Pani, benefitting 321 villages and 5,966 farmers.

Productivity and Market Linkages (FPOs)

- 28 Farmer Producer Organisations (FPOs) established in the states of Maharashtra, Telangana, Madhya Pradesh, and Jharkhand, helping 12,057 farmers from 343 communities reduce production costs and improve market access. 5641 Crop Demonstrations (apart from System of Crop Intensification) done in 308 villages leading farmers to make smart choices suited to the local ecosystem and become more resilient to extreme weather events.

Local and Crop Specific Agromet Advisories

- 31 active Automated Weather Stations (AWS) across India.
- 7,263 unique agro-advisories sent to 27,089 farmers in 285 villages.
- FarmPrecise App in use by over 31,831 farmers.

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*Dashparni Ark is a natural pesticide, which can be used on any crop and vegetable plants or fruit trees. It is made using Neem leaves, Lantana camera leaves, Karanj leaves, Kanheri leaves, Jatropha leaves, Gulvel Leaves, Custard Apple leaves, Rui leaves, Papaya leaves, Nirgudi leaves, Cow urine, Cow dung, and water. Amrut Pani is an Instant soil fertility enhancer constituting water, cow dung, honey/jaggery, and cow ghee.
Climate change and increasing weather uncertainty has made agriculture and farming a high-risk gamble. Rising costs of agricultural inputs, low and declining productivity, market volatility, low returns and erratic weather patterns are making farming an unviable source of livelihoods and income, especially for smallholder farmers, who constitute at least 85% of the farming community in India. Further, extensive use of high-cost chemical inputs and excessive use of water is degrading the environment while polluting and depleting the groundwater table. This ultimately affects nature, health, agricultural viability, and overall societal wellbeing.

To address these challenges, WOTR has developed an Android mobile application, “FarmPrecise” that provides farmers with a weather-based, dynamic decision support system they can customize to their specific crops and farm resources across key agricultural operations. This initiative is being supported by Qualcomm Inc. under their Wireless Reach Programme.

The app offers a host of benefits to farmers that
include: -

i. Weather Based Dynamic Advisories - considers observed/forecasted weather conditions, crop phenology and soil status to generate farm-level crop management advisories.

ii. Interactivity - the farmer inputs specific data, identifies the problem and co-evolves solutions that can be shared.

iii. Solutions that are nature-lite, increase productivity, reduce losses, and lower costs.

iv. Market price information.

v. Continuous skill and knowledge upgrades.

 Rolled out in Dec 2019 in 5 languages - English, Marathi, Hindi, Telugu, and Odia in 4 states (Maharashtra, Telangana, Madhya Pradesh, and Odisha), till March 31, 2021, around 32,000 farmers have downloaded the app.

FarmPrecise Mobile App Features

Weather Forecasts for 5 days

Fertilizer Calculator

Integrated Pest /Disease Management

Crop and Farm specific Advisories

Community forum farmer agronomist interaction

Farm Diary (Expense/ Income)

News

Mandi Commodity Prices

Support Chat

The app, which currently provides advisories for 25+ crops, has been received well by farmers.

Here is what some of them have to say:

“I use FarmPrecise app to manage the application of pesticides and fertilizer for my maize crop. The app suggests the right time to spray and also gives me an accurate forecast of rain.” - Ranganath Sahibrao from Ahmednagar district.

“Chemical farming is becoming dangerous for our body and our soil. Therefore, the app is very useful for organically growing rice, maize and soybean in our area. I used this app myself and asked my other friends to download it too. It also tells us when to use neem extract, so we can use it at the right time.” Pintu Mawchi from Dhule district.

“I grew brinjal, onion and some other vegetables as per the advice by FarmPrecise. The app feature, wherein if you share the photo of an unknown crop disease and you get advice within two minutes is very useful. Pesticides can then be sprayed accordingly.” - Bhaskar Chandrabhan Bhosale, Shivapur village from Ahmednagar District.
The Situation: Groundwater in Perapallathanda watershed of Perapallathanda village in Narayanpet Mandal, Mahbubnagar district had reached alarming levels due to its exploitation for irrigation, resulting in depletion of the shallow aquifers. The increasingly erratic nature of rainfall meant that farmers had to rely mostly on groundwater for both the Kharif and Rabi seasons. Lately though, growing the Rabi crop was becoming challenging as the borewells were running dry with farmers extracting more groundwater than what was being replenished. Groundwater levels had dipped dangerously to around 70 meters. Farmers were also unaware of how to derive benefit from the numerous government schemes promoting micro-irrigation, including drip and sprinkler irrigation. Under these dire circumstances, many farmers were leaving their land barren and migrating to the cities to earn a livelihood post the monsoon season. Chandra Nayak is one such farmer who migrated frequently to surrounding cities in Maharashtra - desperate to earn a livelihood. Despite having his own plot of land, the increasingly erratic rainfall meant there was no assured crop of paddy or cotton even in the Kharif season. Like many other farmers in the region, Chandra Nayak was staring at a grim future.

The Solution: When WOTR was apprised of the condition of farmers and their households, it promptly started promoting micro-irrigation as it was seen as an appropriate response to reduce the vulnerability to climate change, adapt to unforeseen risks in agriculture, and sustainably manage the existing water resources. Micro-irrigation is known to offer better water use efficiency and reduce run-off and drip drainage leading to less water-logging and lower soil evaporation. WOTR delivered 45 sprinkler
systems to Perapallathanda farmers. WOTR also introduced farmers to sustainable agriculture practices such as System of Crop Intensification (SCI), use of Trichoderma and Pseudomonas as bio-control agents, preparation of organic formulations such as Jeevamrut, Amrut Pani, and Neem seed kernel extract.

The Success: Chandra Nayak has since returned to his village and farms with renewed vigour. With a micro-irrigation unit now installed on his farm, he is able to grow crops both in the Kharif and Rabi seasons. Through WOTR’s support, Chandra Nayak was able to procure the sprinkler unit at a heavily subsidised price of Rs. 4,300 and can use it for the next 10-15 years without incurring any irrigation costs. WOTR also introduced farmers to sustainable agriculture practices such as System of Crop Intensification (SCI), use of Trichoderma and Pseudomonas as bio-control agents, preparation of organic formulations such as Jeevamrut, Amrut Pani, Neem seed kernel extract etc. The overall groundwater level in the village has now been restored to 20 meters.
But if you can create an honourable livelihood, where you take your skills and use them and you earn a living from it, it gives you a sense of freedom and allows you to balance your life the way you want.”
- Anita Roddick

Livelihoods

For communities to be resilient to climate change and volatile market shocks, they must generate and locate growth possibilities in their own communities, as well as build appropriate skill sets, which we at WOTR assist them with, through our sustainable livelihoods’ interventions.

WOTR’s strategy focuses on improving local demand-supply networks by diversifying livelihoods in a way that maintains a healthy balance of social, financial, natural, physical, and human capital. WOTR supports individuals with farm and non-farm based activities to generate income for the beneficiaries. Vegetable cultivation models (Kitchen Garden and Multilayer Farming), fish farming, duck and goat rearing, setting up multi-purpose grinding machines, food stores, eateries, and backyard poultry are examples of such activities.

Non-farm and Off-farm Enterprise Development

- Enterprise Awareness and Development - Skill Training: - 146 livelihoods training sessions conducted with 3,980 participants.
- 4 industry exposure visits organised with 68 participants 2,380 beneficiaries for Micro Enterprises and Income Generation activities such as backyard poultry, mushroom cultivation, tailoring, grocery shop, duck rearing, pig farming, carpentry, goat rearing, fishery and vermicomposting.
- Agri-allied activities- 662 vegetable cultivation models, 4 fish farms, 236 Backyard Poultry units, 89 beneficiaries supported with duck rearing, 275 goateries, 65 mushroom sheds cultivation, and 319 Vermicomposting beds provided Non-farm based activities - 30 multi-purpose grinder machines, 29 Grocery shops and other
livelihoods options provided to 499 female and 238 male beneficiaries.

Alternative Energy

• Energy Efficiency- smokeless/hot-water cooking stoves- 100 smokeless chulhas provided in 112 villages.

• 805 solar house lighting systems, 51 streetlights (LED Lamps) installed.

SDGs Addressed

1. NO POVERTY
2. ZERO HUNGER
3. GOOD HEALTH AND WELL-BEING
4. AFFORDABLE AND CLEAN ENERGY
5. DECENT WORK AND ECONOMIC GROWTH
6. CLIMATE ACTION
7. LIFE ON LAND
The Situation: Pipardand is a village in the Korea district of Chhattisgarh, surrounded by steep terrain and forest. Only about 30% of the total farmland in the region is cultivable due to water constraints. Most farmers own 3-5 acres of fallow and largely uncultivable land. Majority of them practice rain-fed agriculture during the Kharif season, planting Arhar and Kulthi crops. Villagers in the area lack basic infrastructure for sustainable development and have only rudimentary knowledge of contemporary agriculture and livelihoods methods. While agriculture was practised during the Kharif season, they remained idle for the rest of the year due to a lack of other viable sources of revenue and livelihoods. Agriculture and non-timber forest products comprised most of the village’s farmers’ income, which was barely Rs. 40,000 per year on average.

The Solution: To boost incomes for households in Pipardand, it had become necessary to evaluate alternative livelihoods which could ensure the village community’s self-sufficiency. Fish farming using Biofloc was identified as a viable option. Biofloc is an alternative fish farming system where wasted feed is recycled and reused as fish feed. The technique reduces input and installation costs while saving farmers a significant amount of effort and time. The combination of microorganisms such as fungi, algae etc. in the water forms a Biofloc that absorbs inorganic waste and converts it into fish feed. While this enhances water quality, it also saves farmers significant costs in procuring fish feed.

Farmers interested in implementing Biofloc fish farming were taken to Ambikapur to learn about Biofloc and understand its benefits. Later they received technical training from WOTR’s experts.

The Success: Within 8 months of fish farming using Biofloc, 15 quintals (1,500 kg) of fish were produced. Farmers sold the fish at Rs. 120 per kg,
generating Rs. 1,80,000 in annual revenue. Given the success of the programme, 10 farmers have come together now and constructed two fish tanks containing roughly 1,200 fish seeds. Consequently, the farmers’ annual income has increased from Rs. 6,000 to about Rs. 15,000 per month. The farmers not only adopted a new technique but, with the help from WOTR, were also able to expand their technical understanding of a viable alternative livelihoods.
Health, Sanitation and Nutrition

“We shall not defeat any of the infectious diseases that plague the developing world until we have also won the battle for safe drinking water, sanitation, and basic health care” - Kofi Annan

Every day, 67,385 babies are born in India - that’s one-sixth of the world’s childbirths.* Every minute one of these newborns dies. In developing countries, including India, women’s diets are often insufficient to meet their nutritional requirements. As a result, undernourished women are more likely to become malnourished mothers, and give birth to babies with low birth weight, perpetuating an intergenerational cycle of malnutrition. WOTR works to ensure that all children in its project areas are well-nourished and receive optimal nutrition to achieve their growth and development potential. WOTR’s approach involves establishing a cadre of health professionals, strengthening their capability, raising awareness, improving mental well-being, providing clean drinking water, conducting health camps and demonstrating proper nutrition for children and women.

Access to good health, water, sanitation and nutrition helps foster healthy lifestyles and equips communities to be resilient to the vulnerabilities of climate change. Household kitchen gardens introduced by WOTR produce more nutritious food to support a better diet. These gardens produce a diverse range of vegetables such as spinach, cauliflower, cabbage, aubergine, tomatoes, and potatoes, offering valuable food and nutrition security to families. Moreover, improved local governance and knowledge sharing through Women SHGs and WOTR’s health professionals help sensitise rural communities to the benefits of improved health and nutrition.

Safe Drinking Water

- Storage Tanks and Pipelines - Water tanks for drinking water constructed in 10 villages benefiting 1,412 families and 1,105 school students.
- Installation of Filters – 11 community filters fitted for safe and clean drinking water benefiting 1,620 families.

Health Screening and Awareness Camps

- Health activities such as awareness camps, food malnutrition training, and protein powder distribution programmes, benefiting 1,496 families undertaken.
- 33 Health and Nutrition Camps conducted in 39 villages with 1,306 participants.
- 49 health and haemoglobin (HB) camps promoting good health practices conducted benefiting 949 villages and 2,386 people.
- 184 food demonstrations conducted.
- 32,860 Kitchen Garden and 1,240 multi-layer farming activities benefitting 43,169 people.
- Sanitary napkins distribution programme implemented in 40 villages with 574 women beneficiaries.

Child Growth Monitoring

- 18 Health Promoter Trainings conducted with 64 female participants.
- 172 villages covered under Child Growth monitoring with 121 trainings organised for child and mother growth care.

SDGs Addressed

2 Zero Hunger
3 Good Health and Well-being
5 Gender Equality
6 Clean Water and Sanitation
The Situation: According to the HUNGaMA (Hunger and Malnutrition) Survey, almost one in every five children in 112 districts of India is at risk of malnutrition. Rayagada in Odisha is one such district that is majorly occupied by the Khonds and Lanjia Soras tribes. When WOTR began working in Gunupur block in Rayagada district, the team realised that malnutrition is a severe problem in the villages and poses a high risk especially to children below the age of 5.

The Solution: WOTR initiated the child Growth Monitoring Programme in the community. The initiative aims to achieve 100% participation of 0–5-year-old children in the programme. The initiative strategically trains women in the community as Mahila Pravartaks (health promoter). Each Mahila Pravartak undergoes a three-day training programme and learns to use a growth monitoring chart and child growth assessment parameters. Then, each child’s measurement is plotted, and the results are shared with the mother. The Mahila Pravartak works closely with the mothers of young children and educates them on the importance of good nutrition and a healthy lifestyle. During the intervention, the team met Clementina, a 2.5-year-old born to Tesnati Sabar and Siba Sabar. Clementina exhibited severe symptoms of malnourishment, including stunted growth and poor weight. She was classified as orange (in the borderline of yellow) on the Growth Monitoring Chart. Her weight was about 2.5 kilograms less than her ideal weight. Despite rigorous interventions and counselling, Clementina showed little improvement. WOTR’s Social Officers subsequently consulted the Counsellor at Nutritional Rehabilitation Centre (NRC). On the recommendation of the Counsellor and Auxiliary Nurse Midwife (ANM), Clementina was shifted to NRC, Gunupur for intensive care and treatment.
The Success: With proper care and attention, Clementina made significant progress during her first ten days at NRC, gaining 0.9 kg. Throughout the process, WOTR was in constant touch with Clementina’s mother Tesnati. Clementina is now a healthy child and showing good signs of growth. Tesnati has realised the importance of tracking her child’s health on a regular basis. She is thankful to the WOTR team for identifying Clementina’s growth lag and taking timely action.
Persistent social and gender inequalities in rural communities render women much more vulnerable to climate change as they are more susceptible to shocks and stresses in the ecosystem and less resilient in adapting to its effects. WOTR’s Ecosystem-based Adaptation approach reduces these vulnerabilities by addressing these vulnerabilities and empowering women socially and economically.

Equal access to employment, leadership, and decision-making positions at all levels are essential to achieving empowerment. WOTR enables this through the formation of women only SHGs, capacity building and drudgery reduction, and women enterprise development.

Membership in SHGs allows women to gain confidence, access finance funding, and receive social support to set up their own micro-enterprises. WOTR strongly emphasises gender equality, particularly addressing the negative impacts of bias against the girl child. It also provides educational and social services for women, resources for drudgery reduction, capacity building, women’s meetings, and ‘Mahila Melawas’ (women’s gatherings). In addition, it conducts self-reflection or ‘Atma Darshan’ exercises - guided meditations centred on holistic healing and empowerment, which helps women and communities to reflect on their lives, address prejudices and biases, and give up unfavourable and undesired behaviours such as gender-biased narratives, disempowering mental scripts and deep-rooted cultural stereotypes against women.

“Women are the largest untapped reservoir of talent in the world”
- Hillary Clinton
Drudgery Reduction

• 38 drudgery reducing items distributed including a flour mill, drinking water tank, and LPG cylinders.

Formation of SHGs and Women Federations

• 149 new Self-help Groups (SHGs) formed with 1,636 members; a total of 33,110 functional SHG members during 2020-21.
• 295 training sessions held for SHG members, in which 7,081 women participated.
• 21 new Samyukta Mahila Samitis (SMS) or women’s federations formed with 310 members; a total of 99 SMS with 2012 members active during 2020-21.

• 21 SMS trainings held in which 166 women participated.

Capacity Building

• 7 exposure visits for women with 147 participants; 9 Mahila Melawas attended by 441 women.
• 36 gender training workshops held involving 918 participants- 708 women and 210 men.

Women Enterprise Development

• 1,397 beneficiaries assisted with small scale business activities such as tailoring, fishery, grocery shop, backyard poultry, goat rearing, vermicomposting and pulveriser units.

SDGs Addressed

1 NO POVERTY 3 GOOD HEALTH AND WELL-BEING 5 GENDER EQUALITY 8 DECENT WORK AND ECONOMIC GROWTH
The Situation: Women play important roles in the rural economy as farmers, wage earners, and caretakers. They are also custodians of traditional knowledge that can be a key source of livelihoods for their households and communities. However, empowering them to start their own enterprises remains largely absent. This was true for the women in Ambad district, Maharashtra also. Relegated to looking after their homes and fields, they would rarely find the opportunity to use their skills and knowledge to start their own enterprises. With a view to change this, WOTR officials started looking at ways to boost women development work in the community and encourage women to start their own enterprises.

The Solution: Pratibha of Pimpharkhed village in Ambad is one such woman that WOTR approached. She used to work as a daily wage labourer for watershed development under MGNREGS (Mahatma Gandhi National Rural Employment Guarantee Scheme). She was also a member of one of the Self-Help Groups (SHG) in her village. When WOTR actively encouraged her and other SHG members to start their own initiatives, Pratibha and other group members hit upon the idea of making handwoven mattresses (Godhadi).

WOTR then organised a training for Pratibha along with 14 of her peers in Jalgaon, Maharashtra. The Godhadi is a famous hand-stitched mattress or quilt native to Maharashtra that is traditionally upcycled from old saris or pieces of cloth. The final product is a beautiful combination of different patterns. With her confidence boosted from acquiring the necessary skills, Pratibha and her group went about setting up their small enterprise to make Godhadis, albeit from new pieces of cloth and washable cotton. Pratibha makes different sized quilts of 60x90 in., 90x90 in., and 100x100 in. The input cost for a 60x90 in. quilt is about Rs. 350 and it takes two days to make a Godhadi. It is sold at Rs. 2,500, a gross margin of 86%!

Pratibha and her peers then got a good opportunity to sell their products at the national exhibition in Hyderabad, Telangana. The Godhadis were a...
rage and she was able to sell 12 of them netting a revenue of more than Rs. 8,000. Pratibha gained a lot of confidence from the exposure. The opportunity has now catapulted into many more invitations to present at exhibitions in other big cities like Chennai, and Mumbai. While the COVID-19 pandemic has created challenges for Pratibha, she is confident that her business will stride across.

The Success: Travelling to Hyderabad was a pivotal step in Pratibha’s life. She has since, travelled to Chennai and Mumbai alone, selling Godhadis. She realised she had the capability to channelise her energies to make her dream a reality. This initiative, while boosting her self-esteem has also given her household a sustainable source of income. Promoting gender equality, and empowering rural women through such employment opportunities, not only contributes to inclusive and sustainable economic growth but also enhances resilience in the community.
The WOTR Centre for Resilience Studies (W-CReS) initiated in 2007 and set up as an autonomous unit in 2016, undertakes multi-stakeholder, applied research on ground level problems using a trans-disciplinary approach. W-CReS works closely with local communities, scientific, governance, and other institutional players to ensure that the insights and best practices gained on the ground contribute to the development of effective policies and efficient programme execution. It aims to promote adaptive responses and mitigate the impacts of climate change and economic shocks on ecosystems, water resources, agriculture, food and nutrition, health, livelihoods, gender, governance, and local institutions.

At present, it consists of 30 researchers from various disciplines, including economics, anthropology, social work, development studies, hydrology, geoinformatics, and medical and climate science, engineering, water, and agricultural sciences. W-CReS is headed by Dr Marcella D’Souza.
Major Projects 2020-21

Generating Knowledge to Build Drought Resilience in a Changing Climate
This project in partnership with HSBC Software Development India, undertakes integrated studies related to drought management, groundwater management, and climate resilient agriculture to enable policies and practices. It also provides capacity building trainings with a view to promote drought-proofing. It is being implemented in Maharashtra and Telangana.

Research studies related to the thematics of climate resilient agriculture, sustainable groundwater management, water policies, and climate change adaptation are underway. In addition, as an action research component, W-CReS is piloting the promotion of the Water Stewardship approach with aquifer management in the Parner block of Ahmednagar district. This will help develop a model of groundwater management, in line with current state policies and programmes in Maharashtra.

Promoting Protection and Solidarity for Climate Migrants and Displaced Communities in South Asia
The project by Climate Action Network South Asia (CANSA) is being implemented in five countries of South Asia and WOTR, as a project partner for India, is working towards identifying inadequate mitigation and adaptation support in the country. It is observed that there is a huge policy and practice gap from local to global levels to protect displaced communities. One study completed under the project, ‘Climate-Induced Displacement and Migration in India’ makes a strong case to add climate-induced migration considerations in policy formulation, where South Asian civil society plays a critical role in addressing information gaps, developing solutions and strengthening South Asian solidarity.

Climate-SDGs Integration Project: Supporting the Implementation of the Paris Agreement and the 2030 Agenda through Ecosystem-based Adaptation
Climate change is today’s reality, and it is resulting in a rapid deterioration of ecosystems, with loss of biodiversity and livelihoods in society. As part of the International Climate Initiative by the German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMU), WOTR and Berlin-based Think-Tank TMG Research undertook policy research on Ecosystem-based Adaptation (EbA) in the rain-fed region of Maharashtra. The project was initiated in the year 2019 and is still being carried out. To showcase evidence of EbA outcomes, two case studies on Bhojdari and Purushwadi village have been studied under this project. To develop a roadmap for upscaling of Ecosystem-based Adaptation in Maharashtra, a series of participatory multi-stakeholder consultation/dialogues at both the local and state levels were organised and included: -
  • Identifying Windows of Opportunity.
  • Three capacity building workshops on Ecosystem-based Adaptation for Building Resilience to Climate Change.
  • Constitution of thematic expert groups which organised regular meetings with various stakeholder groups such as senior officials from related Govt. departments, NABARD, academic and research institutes, practitioner organisations and few primary stakeholders during June and July 2020.
  • 1st and 2nd Expert Committee Meeting for Developing the Road Map for EbA in Maharashtra.
Water Governance Standard and Certification System
The project implemented in partnership with IDH has a broad objective to introduce the Water Governance Standard Framework to government departments, practitioner NGOs/CSR foundations and donor agencies, and investors. The framework is being developed by covering data collection in three states - Maharashtra, Madhya Pradesh and Jharkhand. Three consultation workshops have been organised in the process of designing the framework.

Ensuring Food and Nutrition Security through Promotion of Agrobiodiversity in Semi-arid Regions
This action research project, supported by GIZ (Prosoil Plus), is being carried out to address farmers’ food and nutrition insecurities, especially during droughts or other disasters leading to crop loss. The action research is going on in 2 villages each, in Sakri, Bhokardan and Parner blocks of Dhule, Jalna and Ahmednagar districts in Maharashtra.

The findings reveal loss of agrobiodiversity, reliance on high yield varieties, less consumption of nutritious food, lack of awareness, increased reliance on the market for consumption, and increased interest in cash crop cultivation as some of the major causes of food and nutrition insecurity. Major interventions are consequently being carried out to address these issues. These include crop planning for food security, kitchen gardens, multilayer farming for assured availability and accessibility of vegetables and fruit, nutrition awareness through meetings, exposure visits, various competitions and food demonstrations on nutritive recipes, and so on. The results obtained so far from the research project indicate the crucial importance of an Agriculture based Food-Nutrition intervention. Almost all the farmers who received this intervention felt that their nutritional status improved after the intervention. Their food consumption, food sovereignty, dietary diversity, and vegetable consumption is enhanced when compared to the past.

Economics of Climate Change Adaptations in Ahmednagar District, Maharashtra-
HSBC Software Development India
Supported by HSBC Software Development
India, the objective of the study is to evaluate the impacts of the Climate Change Adaptation measures implemented by WOTR in Ahmednagar. This study was carried out in the six villages where WOTR implemented a landscape Climate Change Adaptation (CCA) project spanning 25 villages from 2010 to 2014. The selected villages are in three topographies: the hills of the Western Ghats (Ghoti, Khadki Budruk), the plateau (Warudi Pathar, Mahalwadi), and the area near a rivulet (Kauthe Khurd, Kauthe Budruk) falling in the rain shadow of the Western Ghats.

The study finds that a holistic climate change adaptation approach is beneficial in terms of biophysical and socio-economic parameters. A proper mix of ecosystem restoration and community development improves the socioeconomic condition during normal rainfall years and aids resilience in times of climate extremes.

**Policy Brief: Ecosystem Restoration for Land Degradation Neutrality: the Economic Valuation of Watershed Development in Eastern Madhya Pradesh and Western Maharashtra**

This policy brief is based on two studies - one supported by the ELD Initiative in Eastern Madhya Pradesh (MP) and the other by HSBC Software Development India in Western Maharashtra (MH). Sustainable land management (SLM) interventions were implemented in both locations. SLM’s impact has been studied at both biophysical and socioeconomic levels in both studies. While the SLM intervention has successfully halted and reversed land degradation, land restoration has had a prominent outcome at the socioeconomic level. Crop productivity has improved, as has household water availability. Distress migration was studied as part of the MP study. It was discovered that the situation had improved from the past. The cost-benefit analysis for the selected villages with respect to ecosystem services of land and water also suggests that the SLM is economically viable and results in better outcomes than otherwise.

**Towards Sustainable Agriculture Livelihoods through Community-based Water Stewardship in Drought Prone Maharashtra**

The project communities are in a drought-prone area where natural resource management measures have either been completed or are currently being implemented under government programmes. As water availability and agriculture productivity increase, these villagers also often experience water shortages for irrigation and domestic use. This project is being carried out in 20 villages of Bhokardan, Jafrabad and Ambajogai blocks of Jalna and Beed districts. The overall goal is for the local community to take full responsibility of water management for the domestic and agriculture needs of their villages.
WOTR takes a strategic approach when it comes to communications, outreach, and engagement. It provides targeted information to all stakeholders through media interactions, newsletters, milestone events, and webinars through digital channels. The efforts have culminated in forming a group of connected individuals who regularly follow and engage with WOTR’s activities. This has helped raise awareness of both WOTR and its work.

**Monthly Newsletter**  WOTR team shares a monthly newsletter containing news, media stories, articles, activities on the ground from all the departments and teams dispersed through 7 states. 12 monthly newsletters were sent out to an email list of almost 5,500 people from April 2020 to March 2021.

**Blogs and Articles**  On the WOTR blog, WOTR team members publish blogs and articles based on their area of expertise - sharing field experiences, case studies, event articles, research insights, opinion articles, and so on. It covers a wide range of topics that revolve around climate change adaptation, threats, opportunities, and solutions that are needed to build resilient communities and healthy ecosystems. During the year 2020-21, 44 blogs on various topics were written by diverse authors, receiving over 32,000 views.
A few of them are listed below:

**Adapting to Climate Variability in India – International Partnership Explores an Ecosystem-based Approach in Maharashtra**
Climate-related risks such as heatwaves, storms, floods, and droughts have resulted in almost two thousand deaths with associated economic losses estimated at USD 37.8 billion. One-quarter of India’s drought-prone districts, located in Maharashtra, is hard hit. To manage drought and water scarcity in a more holistic and integrated manner, the state has launched a variety of measures. This blog describes one such programme, which was undertaken through a collaboration between TMG Research and WOTR. The project, which began in 2019, aims to introduce an ecosystem-based adaptation (EbA) approach, as a comprehensive process that can contribute to both the Nationally Determined Contributions (NDCs) and Sustainable Development Goals (SDGs).

**Avoiding a Failure of One More Version of the National Water Policy**
With numerous cities expected to run out of groundwater soon, the need to evolve a National Water Policy (NWP) that not only addresses imminent challenges but also establishes a framework and pathway to sustainable, efficient, and equitable management of resources cannot be underscored enough. This article focuses on “Water in Agriculture” and offers recommendations to contribute towards an NWP that can address the issues in this sector.

**Why Gender-Sensitive Policy is Key to Climate Adaptation**
The National Action Plan on Climate Change (NAPCC) of India, which addresses climate change mitigation and adaptation methods, fails to include a gender dimension. Initiatives to understand the links between gender equality and climate change response have lately become a focus of action research and policy in India. In 2008, WOTR, in collaboration with NABARD and the Maharashtra government, launched the Climate Change Adaptation (CCA) programme in the villages of Ahmednagar district. The benefits of the CCA programme to the village community are highlighted in this article.
Poshan Maah 2020: The WOTR Way
Rashtriya Poshan Maah (National Nutrition Month) was celebrated in September. WOTR has conducted various trainings for women to be self-dependent and enhance nutrition security. Furthermore, WOTR has been carrying out various activities in support of Poshan Maah in the states of Madhya Pradesh, Jharkhand, Odisha, Maharashtra, and Rajasthan. Detailed programme activities and impacts are listed in the article.

An Ecosystem-based Approach Strengthens Local Resilience to Climate Crisis
In response to climate uncertainty, innovative approaches are needed to enhance the sustainable use of existing resources and build the resilience of local communities in the long term. Building on practical experiences on the ground, TMG Research, a Think Tank for sustainability based in Berlin, and WOTR, aim to support communities to explore more sustainable livelihoods options by strengthening their natural resource base.

Scan this QR code to read all our blogs:

Social Media
WOTR is active on 3 popular social media platforms- Facebook, Twitter, and LinkedIn where a dedicated team regularly shares content in the form of audio-visual content from the field, stories highlighting important work, event updates, and blogs written by our researchers and subject experts. Social media outreach has been beneficial in motivating field facilitators and in garnering engagement from partners, prospects, government officials and other stakeholders.

Below is an insight into social media growth in the year 2020-21.

Audio-Visual Outputs
WOTR’s dedicated team of Audio-Visual professionals braved against all odds to create videos related to community mobilisation, project reporting, communicating impact to policymakers, motivating local communities and influencing public opinion. Despite the raging pandemic and ensuing restrictions on travel, WOTR’s audio-visual team in 2020-21, made and released 14 films that can be viewed on WOTR’s YouTube channel.
<table>
<thead>
<tr>
<th>Film Name</th>
<th>Language</th>
<th>Duration</th>
<th>Year</th>
<th>Link</th>
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<tbody>
<tr>
<td>COVID-19 relief work in Odisha by WOTR</td>
<td>English</td>
<td>6:17</td>
<td>May-20</td>
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<td>Multilayer farming film</td>
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<td>Jul 4, 2020</td>
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<td>Mask distribution film</td>
<td>English</td>
<td>2:32</td>
<td>Aug 10, 2020</td>
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<td>COVID-relief support in Rajasthan</td>
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<td>Sep 23, 2020</td>
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<td>किमया पाणलोटाची !!! (Benefits of Watershed Development)</td>
<td>Marathi</td>
<td>10:12</td>
<td>Oct 3, 2020</td>
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<td>WOTR celebrates 27th Foundation Day</td>
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<td>&quot;पाणी कारभारी&quot; - Water Stewards</td>
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<td>Jan 15, 2021</td>
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<td>Maveshi project film</td>
<td>English</td>
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<td>Economic valuation of reducing land degradation through watershed development - a study by WOTR</td>
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<td>Mar 11, 2021</td>
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<td>पानी... हम सबका (जल प्रबंधक - Water Steward)</td>
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<td>Ecosystem-based Adaptation in Maharashtra, India: Voices from the ground</td>
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<td>Ecosystem-based Adaptation in Purushwadi: Voices from the ground</td>
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<tr>
<td>How to do Multi-layer farming</td>
<td>English</td>
<td>6 min</td>
<td>Mar-21</td>
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In addition to hands-on capacity building, WOTR organises trainings for communities, and development practitioners from NGOs, governments, corporates, international agencies, and students. WOTR offers a variety of programmes in climate change adaptation, water management and water budgeting, climate resilient sustainable agriculture, women’s empowerment and SHG formation, aquifer delineation, community mobilisation, technology application in project management, entrepreneurship development, and water stewardship.

During 2020-21, a total of 2,164 projects related (on-site) training programmes with 44,542 participants and 25 external training programmes with 721 participants were conducted across the 7 states WOTR is working in.
WOTR also has a dedicated training centre – the Fr. Hermann Bacher Learning Centre in Darewadi village, Sangamner block of Ahmednagar district, where many of these training programmes are conducted.

**Advisory Services**

WOTR has provided advisory services to 7 different stakeholders on projects in watershed development, climate-proofing and water surveys among others.
During the year 2020-21, 17 articles were published including policy briefs like the EbA info brief series.

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<tr>
<th>#</th>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>3</td>
<td>Adaptation Strategy or Maladaptation – The conversion of Farm ponds into surface storage tanks in Semi-Arid regions of Maharashtra</td>
<td>Ramkumar Bendapudi, Ankita Yadav, Sarita Chemburkar and Marcella D’Souza.</td>
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<td>4</td>
<td>Subjective Wellbeing Analysis as a means of achieving Sustainable Development Goals: Evidence from the semi-arid villages in Maharashtra</td>
<td>Bidisha Sinha and Ramkumar Bendapudi.</td>
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<td>6</td>
<td>Property Rights and Institutional Arrangements of a Man-Made Wetland in Dryland Area of West Bengal, India by Sourya Das, Bhagirath Behera and Ashok Mishra.</td>
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<td>8</td>
<td>Observed changes in extreme rain indices in semiarid and humid regions of Godavari basin, India: risks and opportunities by Aradhana Yaduvanshi, Ashwini Kulkarni, Ramkumar Bendapudi and Kaushik Haldar.</td>
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<td>11.</td>
<td>Drip irrigation as a socio-technical configuration: policy design and technological choice in Western India by Karan Misquitta and Trevor Birkenholtz.</td>
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| 12. | EbA Info Brief Series  
  i. Adapting to climate change in India – the value of an ecosystem-based response. EbA Info Brief Series #1  
  ii. Strengthening Biodiversity to Enhance Ecosystem-based Adaptation. EbA Info Brief Series #2  
  iii. Managing Land and Forests – the value of ecosystem-based adaptation. EbA Info Brief Series #3  
  iv. An Ecosystem-based approach to Climate Resilient Agriculture. EbA Info Brief Series #4  
  v. Livestock and Ecosystem-based Adaptation. EbA Info Brief Series #5  
  vi. Why Ecosystem-based Adaptation for Water Management? EbA Info Brief Series #6 |   |
Statement of Finances

The projects mentioned have been funded through donations and contributions to WOTR from a variety of sources, as well as ‘personal contributions’ from the people and communities participating in various activities. WOTR collaborates with various government departments to help individuals and communities have access to a variety of benefits through various publicly funded programmes.

The total expenditure incurred during FY 2020-21, for all the developmental works undertaken, amount to Rs. 72,77,04,497

The break-up is as follows:

1. Direct Expenditure undertaken by WOTR: Rs. 44,36,99,424

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Expenditure</th>
<th>Expenditure in %</th>
<th>Amount (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Rural Development</td>
<td>77.76%</td>
<td>34,50,09,117</td>
</tr>
<tr>
<td>B</td>
<td>Trainings / Workshops</td>
<td>3.03%</td>
<td>1,34,30,765</td>
</tr>
<tr>
<td>C</td>
<td>Applied Research and Knowledge Management</td>
<td>0.47%</td>
<td>20,76,068</td>
</tr>
<tr>
<td>D</td>
<td>Operational Costs</td>
<td>18.35%</td>
<td>8,14,39,062</td>
</tr>
<tr>
<td>E</td>
<td>Fixed Assets</td>
<td>0.39%</td>
<td>17,44,412</td>
</tr>
<tr>
<td>TOTAL:</td>
<td></td>
<td></td>
<td>44,36,99,424</td>
</tr>
</tbody>
</table>

2. People’s/Community Contribution: Rs. 6,57,30,139

3. Funds secured through Convergence with Government/public schemes: Rs. 21,82,74,934
Direct Expenditures in %

- **Rural Development**: 77.76%
- **Operational Costs**: 18.35%
- **Trainings / Workshops**: 3.03%
- **Applied Research and Knowledge Management**: 0.47%
- **Fixed Assets**: 0.39%
Our Partners

Andheri-Hilfe Bonn

Apraava Energy (Previously known as CLP Wind Farms Private Limited)

Arteco Coolants India Private Limited

Atlas Copco Charitable Foundation (Trust)

Axis Bank Foundation

Becker- Cordes Stiftung / Rotary Club of Hagen

Bharat Rural Livelihoods Foundation

Bread for the World

Charities Aid Foundation, India

Climate Action Network South Asia

Concern India Foundation

Credit Suisse Services (India) Private Limited

Crompton CSR Foundation

Deutsche Bank Aktiengesellschaft

Deutsche Gesellschaft für Internationale Zusammenarbeit (GiZ) GmbH

Deutsche Welthungerhilfe e.V.
Rotary Club of Poona
Charitable Trust

Rotary Club of Pune
Metro Charitable Trust

Royal Swedish
Academy of Sciences
/ Global Economic
Dynamics and the
Biosphere

SBI Funds Management
Limited

Stichting Wageningen
Research, Wageningen
Environmental Research

Supraja Foundation

Tata Projects
Community
Development Trust

Tata Steel Foundation

TMG Research gGmbH,
Germany

Supraja Foundation

Volkswagen Finance
Private Limited

Wells Fargo
International Solutions
Private Limited

Dr and Mrs S.H.M. Modi
Hormus House
Benevolence Trust Fund,
Mumbai

Friends of WOTR,
Germany

Lion’s club Zurich-
Affoltern and
HamasiStiftung

VOLKSWAGEN
FINANCIAL SERVICES

Wells Fargo
International Solutions
Private Limited

Friends of WOTR,
Germany

Lion’s club Zurich-
Affoltern and
HamasiStiftung