ANNUAL REPORT
2016-2017
In this Annual Report 2016-17, you can access the online film related to the thematic area by scanning the QR code.

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When it comes to an understanding of the functioning of government agencies, there is none better than Mr. Asoke Basak, a retired IAS officer. He has served the Government of Maharashtra in various capacities including as the Additional Chief Secretary, the Chairman – Maharashtra State Electricity Board, Secretary – Water Conservation and EGS, Chief Executive Officer of Zilla Parishad, Bhir, Collector of Nasik and Nanded and Commissioner, Dairy Development. He holds a Masters degree each in Geology and Business Administration and a Diploma in Systems Management to his credit. His diverse experience in various facets of development administration has proven to be of immense support to WOTR.

Mr. Mehta brings to the Board a range of competencies and experiences covering governance, policy making, technology, management and institution building. This includes stints as Collector, Municipal Commissioner, Joint Commissioner (Mumbai Municipal Corporation), Director of Horticulture (GoI), Managing Director of Maharashtra State Power Generation Company Ltd. (MAHAGENCO), Managing Director of Maharashtra State Electricity Board Holding Company Ltd. and Managing Director of the Maharashtra State Electricity Distribution Company Ltd. (MSEDCL). Mr. Mehta holds a Bachelor of Technology in Civil Engineering from Institute of Technology, Benares Hindu University, an M.B.A. (Finance) from the U.K. and a degree in Law. Currently he is the Municipal Commissioner of Mumbai.

A well known freedom fighter and champion of the poor, ‘GG’ as he is known to his friends, is one of the pillars of the Yusuf Meherally Centre, an institution engaged in rural re-empowerment, located in Tara village, Panvel. Age is not a hindrance and at 90, he continues to travel the 90-odd kilometers and continues practicing medicine at his clinic in Mumbai. He is also associated with the Khadi Gramodyog Andolan. Since 1996, Dr. Parikh has been a member of the Board of Trustees and WOTR is honoured by his presence.

Known as the ‘Father of participatory watershed development in Maharashtra’ for conceptualising, designing and launching the well-known Indo-German Watershed development Program. The successful implementation of this large-scale bilateral program laid the foundations for the setting up of the national Watershed Development Fund at NABARD by the Government of India in 1999, as well as the creation of a huge pool of skilled personnel and pedagogies that facilitated widespread up-scaling of participatory watershed development across the country. Fr. Bacher made Maharashtra his home early in life having been born and brought-up in Switzerland. Having come into close contact with villagers whose lives had turned into a nightmare for the lack of sustainable water resources, he initiated watershed development activities and subsequently co-founded WOTR. His favourite phrases have been “Without watershed development, there is no solution to drought” and “If Water is the problem; then WOTR is the solution.”
This year has been an exciting year for WOTR. It further deepened its outreach and engagement in 8 states across the country.

Together with community led Ecosystems based Adaptation (EbA), which continues to be the most promising approach to mitigating the adverse impacts of climate change in agrarian economies, WOTR has now developed, tested and rolled out 2 integrated approaches to help make agriculture and water management (both surface and ground water) climate resilient, productive and efficient.

The Adaptive Sustainable Agriculture (ASA) program is being implemented in 250 villages in the states of Maharashtra, Telangana, Madhya Pradesh, Jharkhand, Rajasthan and Odisha. The Water Stewardship (WS) program is being implemented in 106 villages in the states of Maharashtra and Telangana. Altogether, 73,663 rural families are participating in these initiatives and the results have been remarkable – healthier crops and soils, reduced costs of cultivation, smaller environmental footprint, less climate-induced losses, more “crop per drop”, and more water available for farming and drinking. Since market access plays a crucial role in determining returns (and the crops farmers grow), WOTR has now entered the “go-to-market” space with the establishment of 9 new Farmer Producer Organisations (FPOs) bringing the total number to 15 functioning FPOs.

In December 2016, we set up the WOTR Centre for Resilience Studies (W-CReS). W-CReS is the culmination of 7 preceding years of work in the knowledge generation space. With a grounded, trans-disciplinary, “Research-in-Use” approach, W-CReS aims to bridge some of the gaps between science, policy and practice and promote multi-stakeholder collaborations for behavioural change across levels and scales.

During the year, WOTR directly engaged with 465 village communities involving 118,053 households in our areas of operation.

While WOTR’s activities cover a wide range of sectors, we are happy to note that all of them are aligned with and contribute to 3 international framework agreements, namely, the Paris Agreement on Climate Change, the Sustainable Development Goals (UN Agenda 2030) and Land Degradation Neutrality (LDN).

In closing, we would like to thank our well-wishers, donors and friends for supporting us morally, intellectually and financially. Without your generosity and trust, we would not have been able to accomplish what we have. The tens of thousands whose lives you have touched also join us in saying, “Thank You”!

And finally, we would like to acknowledge and thank Team WOTR – “Wotrians” – for their hard work and dedication. They made possible what is captured in this report!

Crispino Lobo
Managing Trustee

Marcella D’Souza
Executive Director
1) PARIS AGREEMENT, UNFCCC

While the Paris agreement is based on the formula of voluntary nationally determined contributions consisting of both adaptation and mitigation activities, it is the earlier Cancun Adaptation Framework (CAF) that provides some guidance on what can be considered as a climate change adaptation activity. While WOTR’s activities cover all 9 points of the CAF, the goal on which there is maximum thrust on is:

Point #3 of the Cancun Adaptation Framework (CAF), namely, “Strengthening institutional capacities and enabling environments for adaptation, including for climate-resilient development and vulnerability reduction”

While climate change adaptation is the primary focus of WOTR’s efforts, there are some mitigation related activities that are also promoted keeping in mind that the developing world has to move to a low-carbon development trajectory. These include activities such as promoting energy efficient stoves, solar home-lighting systems, improving carbon sequestration through afforestation, horticulture, promoting use of organics, etc.

2) SUSTAINABLE DEVELOPMENT GOALS, UNDP

As an organization whose mission is to secure the livelihoods of the poor in a sustainable ecosystem, its work is very closely aligned to the overall goal of the sustainable development goals (SDGs) - a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. The SDGs are defined in terms of 17 goals and 232 independent indicators. While WOTR’s work across its 14 thematic areas (elaborated in the rest of the report) contributes to 9 of the 17 SDGs, the goals on which there is a strong focus are the following six:

#1: End poverty in all its forms everywhere
#2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture
#6: Ensure availability and sustainable management of water and sanitation for all
#8: Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all
#13: Take urgent action to combat climate change and its impacts
#15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation, and halt biodiversity loss

3) LAND DEGRADATION NEUTRALITY (LDN), UNCCD

The overall goal of the UNCCD is to achieve “a state whereby the amount and quality of land resources, necessary to support ecosystem functions and services and enhance food security, remains stable or increases within specified temporal and spatial scales and ecosystems.”

Watershed development is seen as one of the most critical activities to prevent land degradation and this has been the core of WOTR’s work throughout its 25 years.

WOTR works across all the activities identified by the UNCCD needed to stem land degradation, namely, land rehabilitation and sustainable land management worldwide, including:

- Sustainable agriculture,
- Sustainable livestock management,
- Agro-forestry,
- Sustainable forestry,
- Renewable energy,
- Infrastructure development, and
- Eco-tourism

Activities undertaken by WOTR include conducting community-based climate change-induced Vulnerability Assessments and formulation of Adaptation Plans; community-led Watershed Development; climate resilient agriculture/ Adaptive Sustainable Agriculture (ASA); Water Budgeting and Water Stewardship, Farmer-Centric Agro-Meteorology; establishment of Farmer Producer Companies; sustainable Livelihoods promotion; Capacity Building, Training and Skilling; Women's Empowerment; Nutrition, Health, Sanitation and Hygiene; Renewable Energy and Applied Research – all of which contribute to the above mentioned global agreements.
Bringing together its experience over the last two decades especially that gained during the decade of working on adaptation to climate change, WOTR has developed a “Sustainability Framework and Engine” in which to situate and orient itself, evaluate local contexts, determine interventions and measure progress. A representation of this Framework and Engine for adaptive sustainable development, or “WOTR’s Way of Proceeding” or doing things, is represented below:

The outer circle, comprising of the five capitals, are the tangible frame within which human life unfolds. The five capitals – the physical, financial, social, human and natural – have to grow and develop simultaneously and harmoniously to have sustainable growth.

A set of five important conditions, essentially interconnected, are necessary – material adequacy (not merely ‘increase’), security (freedom from fear of insufficiency, discrimination and conflict), freedom of choice, healthy interpersonal relationships and good health. These result in an empowered community that lives in dignity and that enjoys well-being. In the centre is WHOLENESS – a body, mind, spirit integration – a harmony rooted in centredness; the space within, where the individual and the community are one with themselves and 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 “weave and waft” of life – the “engine” as it were - and take the necessary steps (adapt) to strike the balance that maintains overall equilibrium. We would necessarily need to work together as a community and as a group of communities to achieve sustainability – bequeathing a better world to our great, great grandchildren’s children and beyond!
WOTR operates in 8 major states of India, with its head office in Pune, Maharashtra.
In December 2016, WOTR established the WOTR Centre for Resilience Studies (W-CReS) in Pune with a focus on Research-in-Use. It subsumes and builds on the Knowledge Management Unit’s work of the preceding 7 years. W-CReS closely engages with scientific, governance and other institutional actors so that insights and good practices derived from ground experience contribute towards shaping policies and enabling effective programs.

Why W-CReS?

Though there are already a number of research centres in India which have high technical capacities, they are largely technocratic and lack grassroots connect. On the other hand, many non-governmental bodies who work actively at the grassroots and can contribute to effective policy formulation lack the technical and scientific skills needed to do so.

W-CReS aims to bridge some of the gaps between science, policy and practice through rigorous trans-disciplinary applied research, policy engagement and capacity building leading to behavioural change.

The studies and research undertaken at W-CReS aim to promote adaptive responses and mitigate the impacts of climate change on ecosystems, water resources, agriculture, food and nutrition, health, livelihoods, gender, governance and local institutions. This is imperative in a country like India, whose nature-based and agriculture sector as well as water resources are expected to be severely affected by climate change.

1. Projects of W-CReS:

W-CReS is currently engaged in the following large-scale, collaborative applied research projects:

a. “Adaptation at Scale in Semi-Arid Regions” (ASSAR) in Africa and India which is funded by the IDRC-DfID;

b. Studies to assess and address the impacts of climatic and non-climatic drivers in rain-fed landscapes in Maharashtra and Telangana, funded by the HUF;

*c Soil Conservation and Rehabilitation of Degraded Lands for Food Security in India”, funded by the GIZ.

- Piloting innovative, scalable, and knowledge-intensive projects, listed below:

- Water Stewardship and Multi-Stakeholder Engagement Initiative which seeks to develop actionable Water Stewardship Plans at the village and cluster level

- Farmer-Centric Agro-meteorology: Developing an IT-enabled platform to automate the process of generating weather-based crop advisories that are farmer and locale specific under the Gramin Krishi Mausam Seva implemented by the Govt. of India through the IMD

- Inclusivity of local needs in village development plans: Case study of villages in the semi-arids of Maharashtra

- Wellbeing as a methodology in identifying differential vulnerability in a community: A study in the semi-arids of Maharashtra

- Developing Climate Resilient Villages: Managing Water and Land to Tackle Drought

2. Publications of W-CReS

2.1 Research Papers


2.2 Articles


2.3 Book Chapter


3. Participation in National and International Conferences and Workshops

WOTR strongly believes in strengthening the capacities of its staff members. As the team, so is the performance and quality of implementation. Our team members presented and participated in the following conferences, workshops and events:

a. 22nd session of the “Conference of the Parties (COP22) to the United Nations Framework Convention on Climate Change (UNFCCC)” that took place in Marrakech, Morocco from the 7th to 18th November 2016

b. International Conference on Community-Based Adaptation-“Enhancing Urban Community Resilience” at Dhaka, Bangladesh from 21-28 April 2016

c. “5th Asia Pacific Adaption Forum” organised by The Ministry of Mahaweli Development & Environment, Govt. of Sri Lanka, Colombo from 17 to 19 Oct 2016

d. “Greenhouse Gas Measurement” workshop organised by CYMMIT in the month of May 2016

e. “Work shop on Qualitative Research Methodology and Atlas-T software” organised by TISS, Mumbai

WOTR strongly believes that the well-being and economic sufficiency of agrarian communities is directly related to the productivity, quality, quantity and range of services that the ecosystems they live in can provide. Therefore, WOTR has been in the forefront of mobilizing vulnerable communities in semi-arid and resource fragile regions to help themselves out of poverty by harvesting rainwater across the landscapes they live in and regenerating their ecosystems.

WOTR’s interventions in this component during the year are as follows:

1. Ecosystem based Watershed development

   “Without watershed development there is no solution to drought.”
   - Hermann Bacher

The watershed is the geographic space in which communities and ecosystems exist and live. And people draw their sustenance and livelihoods from the landscapes and ecosystems they interact with. WOTR directly mobilises communities to regenerate and rehabilitate their landscapes and watersheds by undertaking a range of watershed development and management activities.

These integrated soil and water conservation measures help stabilise fragile ecosystem services which in turn lead to increased water availability, agricultural productivity, biodiversity enhancement, stabilized livelihoods and improved quality of life.
“We are facing severe scarcity of drinking water. The water provided by the tankers is insufficient to meet our daily needs too. I hope the work we are undertaking by contributing voluntary labour will help us increase the water storage in our village. Also, this initiative has helped us collaboratively work together for the development of our village.”

Sangita Bhagvan Telangade, Walsa Wadala, Bhokardan, Maharashtra

During the year, 10,017 ha of land has been treated with soil and water conservation structures which include water absorption trenches (WATs), continuous contour trenches (CCTs), loose boulder structures, stone bunding, terracing, graded bunding, farm and compartment bunding. In the water courses and streams, stone gully plugs, gabion structures, earthen and composite nala bunds, check weirs and percolation tanks have been constructed. During the year, along the drainage channels, we constructed 158 major structures (check dams, nalla bunds etc.) and 344 minor structures (gully plugs, loose boulders etc.) More importantly, implementation of these measures has helped immensely to increase the ground water tables, resulting in increased availability of drinking water. Not only our villages, but adjoining villages also outside the treated watersheds now have potable drinking water throughout the year. To spread awareness of the importance of soil and water conversation through active participation of villagers, 153 awareness programs were conducted and 2355 villagers participated and 15 Participatory impact monitoring (PIM) training, to monitor the watershed development work were conducted and 195 villagers participated.

Our association with the MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act-Scheme) as technical service provider has helped generate 190,082 person days of employment and wage income of 437.27 lakhs.

2. Plantations

In order to increase vegetative green cover, WOTR promotes the plantation of local species serving a dual purpose of afforestation and preserving the existing biodiversity. On 152 ha of land approximately 31,463 local species were planted. Also, in the wake of climate change, diversification of agriculture plays a pivotal role. Hence, farmers are encouraged to take up horticulture as an activity which not only helps them to generate an income source and restores degraded soils but adds to the green cover. Also, training to preserve local flora and fauna was conducted and 25 members of the biodiversity management committee participated. Around 517 ha of land was taken up for planting of horticulture crops.
Digambar Shejol’s family hails from Wadala, Jafrabad block in Jalna district. Farming is their main occupation. However, as Marathwada suffered from severe droughts for the last three years, migration became a common phenomenon in the region. Digambar’s two brothers migrated to Aurangabad in search of livelihood opportunities in 2015. In 2016, under the MGNREGA scheme pilot by WOTR, this family consisting of seven adults, decided to be a part of the implementation of watershed activities in their village. Every member earned on average Rs. 181 and together, the amount accumulated to Rs. 1,267 per day. Not only did his brothers come back but also the family could earn in the summer.

“This work that continued till June made it possible to repay a large amount of loan taken to build our house. Otherwise, we would have taken more than two years to pay back the loan. All of us have earned Rs. 73,000 on average during a single season. I also now understand the importance of watershed development, especially, compartment bunding. Also the farm bunds constructed by us are proving to be extremely beneficial for the farmers.”

The film highlights the significance of adopting the ridge to valley approach for watershed development.
3. Village Development Committees (VDCs)

To ensure effective identification, selection, articulation and representation, especially of the marginalised groups in the decision making process of the village, the Village Development Committee is formed. This mechanism gives a chance for households from every social and livelihood group to be actively involved in decision making. The village is guided and organized by the Village Development Committee for working out their developmental goals and objectives based on a participatory prioritization of their problems, needs and identification of ways to address them.

There are 178 functional VDCs in the current year.

175 VDC trainings for 2,488 people were conducted and for 13 VDC Melawa, 545 people participated.
Watershed development activities play a crucial role in harvesting rainwater and regenerating ecosystems. However, for an effective and long-lasting solution to the issues revolving around water, a new water governance and water management paradigm shift is needed. The new paradigm—Integrated Water Resource Management—requires the co-ordinated development and management of water, land, and related resources.

The following are WOTR’s key initiatives and interventions promoting this new paradigm:

1. **The Water Stewardship Initiative:**

   The Water Stewardship Initiative (WSI) is being implemented in 106 villages across 2 Indian states, namely, Maharashtra and Telangana, both of which are largely semi-arid, regularly impacted by drought and heavily dependent on ground water for drinking and agricultural purposes. Extreme weather events, especially irregular rainfall, are exacerbating water availability for life, livelihoods and nature. The overall goal of the Water Stewardship Initiative (WSI) is to promote water conservation, water harvesting and responsible water use that is socially equitable, environmentally sustainable and economically efficient.

Water Stewardship Initiative undertaken in 106 villages; drip irrigation has been installed in 439 ha covering 1,076 farmers; 276 units of sprinkler sets have been provided to 500 farmers irrigating 410 ha; 4 Lift Irrigation Schemes established benefitting 21 families (79 people) in a remote hilly region; water use efficiency has gone up by 30-40% resulting in significant savings of water.
The major and direct beneficiaries of the project covers a population of 2,16,604 and 34,634 households living in 106 project villages who will be assured of water for drinking and irrigation as a result of undertaking water budgeting, water harvesting and water saving measures. Over 10,000 farmers are receiving crop-weather advisories in these villages.

The WSI consists of the following steps and activities:

a. Community selection of a team of “Water Stewards”: they promote and ensure effective management of local water sources. Around 1,200 “Water Stewards” from project villages participated in different stakeholder engagement workshops together with a good number of government officials.

b. “Jal Sevaks” (“Water Volunteers”): These are local youth trained as para-technologists for water management. They motivate the “Water Stewards” as well as farmers and help prepare and implement Water Stewardship Plans at the village and farm level. A total of 27 “Jal Sevaks” (water volunteers) have been trained and they are facilitating villagers to take appropriate measures in 106 villages.

c. Water Budgeting: A customized Water Budgeting (WB) tool developed by WOTR enables villagers to estimate water availability prior to the main cropping seasons (kharif and rabi) and plan cropping patterns and water-uses accordingly, keeping in mind current and projected demands for water (drinking for humans and livestock) as well as forecasted for kharif and received rainfall (in the case of rabi). This exercise gives an idea of the “net water balance” in a village and results in the formulation of a Water Budget which reveals if there is likely to be or is a water surplus or deficit in the village. It also points out where the surpluses or deficits arise from and the reasons thereof. The Water Budget is a kind of “Bank Passbook” which reflects “credits” and “debits” regarding water availability and use.

d. Rainfall Monitoring: Villagers monitor daily rainfall through simple rain gauges placed in each village and use the data to better manage their crops and estimate the next cropping season’s water availability.

e. Water Stewardship Plans: These pertain to both water harvesting and water use. Based on the historically observed average rainfall in the village or neighborhood and the actual water harvested, villagers then determine whether additional water can be harvested and if so, make plans to undertake watershed-based soil and water conservation activities such as digging trenches, farm bunds, building check weirs, etc. Plans include public and private agencies to be contacted for financial and technical resources. Based on the Water Budget of the village, Stewardship Plans include plans for adoption of water saving and efficiency enhancing technologies (drips, sprinklers, increasing soil organic content, promotion of indigenous nutrient and crop protection technologies, etc) that can bridge or reduce the water deficits. The Stewardship Plans also include rules to govern access and use of common water resources and ground water use.

“I keep villagers informed of new schemes of the Agriculture Department such as vermiculture, farm ponds, micro-irrigation, etc., Although many farmers get to know about these schemes from different sources, they are not well aware about the actual process to follow while applying ‘WOTR’s Water Warriors’, the WhatsApp Group formed where all Jalsevaks and the project team are members of, is one of the important platforms for us to share updates on different government schemes and project activities.”

Yogesh Agalave, Jalsevak, Gunjalwadi, Sangamner

The film highlights the pivotal role of Jalsevaks in implementing the Water Stewardship Initiative.
**Multi-stakeholder Engagements** involving villagers, service and technology providers, local and state level government officials and researchers are regularly organised to promote cross-learning, increased access to technology and resources, a shared understanding of problems and a consensus on solution pathways. This process contributes “ground truths” to the policy process as well as helps improve program design and implementation.

A total of 66 such multi-stakeholder engagements were conducted across various levels where more than 2,700 stakeholders (village water stewards, community leaders, water experts, and several government officials) participated. Stakeholder engagement workshops proved a useful space to come together, debate, discuss and plan.

**Impacts of Water Stewardship Initiative:**


- In more than 70 villages, people offered shramdaan where they removed deposited silt from check dams and percolation tanks and built 61 Vanrai Bandharas.

- 3.10 billion litres of additional water have been harvested through shramdaan and convergence from different schemes of government and CSR efforts.

- Over 1,500 farmers have adopted practices of micro irrigation, mulching, vermi-composting, and organic manures and saved 1.36 billion litres water.
2. Micro Irrigation:

In order to make optimum utilisation of the available water resource in the dryland and semi-arid regions, we also promote the techniques of micro irrigation that mainly involve drip and sprinklers. Drip irrigation allows the water to slowly drip at the roots of the plants, either from the soil surface or buried below the surface. Sprinklers help in judicious and uniform distribution of water for irrigation. Drip irrigation has been promoted on 439 ha and 1,080 farmers have benefited from the same. 276 units of sprinkler sets have been provided to 500 farmers as well covering 410 ha. It is estimated that as a result, water use efficiency has gone up by 30-40% resulting in significant savings of water.

"Our entire family would travel to Narayangaon for work when agricultural work on our 1.5 acres of land was not sufficient. It has been more than a decade that we have been migrating to other towns for work. Back then, we would get a wage of Rs. 25 for working for 12 hours. We would plant paddy in the kharif season and if it rained well we would plant chickpea in the rabi season. Otherwise, the crops would die. If it rained well, we could make a profit out of this produce. We used it majorly for home consumption. In 2016, like every year, we planted paddy.

However, the rain gods did not evenly bless us throughout the season. The lift irrigation unit we had installed on the river allowed us to pump water for the crop. And in the same year we planted groundnut in the rabi season and earned a profit of Rs.25,000. This helped us to incur more profits than in the previous years. In a span of one year I have purchased a pair of bullocks and have paid back my loan of Rs.20,000!

Today, we have not only stopped migrating to other towns, but I can now give more time to my family and my grandchildren too!"

3. Lift Irrigation:

Especially in the summer season, in spite of water availability, communities living at higher altitudes in mountainous terrains of the Akole block, Maharashtra, find it difficult to irrigate their fields. This is because of two reasons - lack of technology and funds. In such a scenario, they find alternative work in the nearby towns and irrigated villages. Even though the Mula river flows through this region, the villages located at higher altitudes do not have access to this water. Hence, in spite of having farm lands, villagers who have no access to irrigation cannot cultivate crops in the rabi and summer seasons.

Our 4 lift irrigation projects have brought a ray of hope among some of the villages of Akole. 21 families in 4 villages having 79 members have benefitted from the water lifted from the river and have stopped migrating for work.
4. Access To Clean Drinking Water

The United Nations considers access to clean drinking water as a fundamental right and is one of the key sustainable development goals too. Over the years, the impacts of our watershed development activities have helped to increase the ground water tables, leading to increase in availability of drinking water. Thus, most of our project villages have access to potable water throughout the year. Also, for effective storage and making drinking water accessible to everyone, WOTR has built community water tanks in Dharwadi, Gitewadi and Damalwadi from Pathardi block of Ahmednagar district (Maharashtra); Umbarewad from Akole block of Ahmednagar district; Dubewadi (Dolasane) in Sangamner block, Ahmednagar District; Vasote in Khalapur block, Raigad district and Modwa village in Gogunda block of Udaipur District, Rajasthan.

244 families in 7 villages having 1,223 members have benefited from it. Also, in 3 village schools in Maharashtra (Damalwadi Gitewadi and Dubewadi), drinking water tanks have been installed benefitting 579 students.
Agriculture in India is highly vulnerable to climate change especially in rain dependent regions which constitute over 60% of the total cultivable land in the county. The frequent changes in weather patterns have heightened risks associated with livestock, livelihoods and crops. Our adaptive sustainable agricultural approach helps farmers devise a strategy to mitigate these risks, reduce losses, and enhance resilience and adaptive capacities.

The strategy adopted by WOTR to de-risk agriculture consists of the following initiatives:

1. Agro-Meteorology

Timely information on likely weather forecasts together with response advisories help farmers take preventive measures and reduce crop losses. WOTR has established 87 Automated Weather Stations (AWSs) in as many villages of which 76 telemetrically upload hourly weather data to our servers as well as to the IMD’s. Based on this information and weather forecasts provided by the IMD, WOTR provides crop and locale specific weather based advisories to farmers.

Moreover, in partnership with the India Meteorological Department (IMD), Central Research Institute for Dryland Agriculture (CRIDA) and two state agriculture universities-Mahatma Phule Krishi Vidyapeeth Rahuri and Vasantrao Naik Marathwada Agricultural University (MPKV and VNMAU), we are in the final stages of developing an IT-enabled platform to automate the process of generating weather based crop advisories. This system is the need of
the hour and is the first step towards eventually providing farmers with customized advisories specific to their needs and farming situations. This system will be handed over to the IMD in the coming year for pilot testing in Maharashtra where 50 lakhs farmers are regularly provided with such advisories. In addition, Wasundhara Sevaks, youth from the villages, are responsible for weather data collection, displaying the information on the village-board every day and maintenance of the equipment.

32 trainings for Wasundhara Sevaks had participation of 305 men.

During the year 332,832 agro advisories have been sent to 23,588 farmers in 218 villages. Advisories on the major crops sown in the Kharif (paddy, soybean, cotton, maize, pearl millet, ground nut) and Rabi (wheat, chickpea and onion) were provided.

2. Organic Formulations

Farmers are advised and guided in the preparation of organic formulations like amrut pani, dashparni ark, neem ark etc that help in restoring degraded lands, increasing soil health, controlling pests and disease infestation, reducing input costs and improving yields. In 113 villages, 504 trainings and demonstrations in the preparation and use of organic formulations activities like amrutpani, dashparni ark, neem ark, were carried out.

3. System of Crop Intensification (SCI)

The SCI technique adopts a four-pronged approach which involves field preparation and management, crop spacing, systematic application of locally prepared organic and biological inputs and micro-nutrient foliar sprays. The SCI technique helps to increase the growth of crops grains, pods, fruit and leafy vegetables. It is the integration of a combination of nutrient and irrigation management, plant protection and plant spacing. Due to the SCI method, yield in cereal crops have shown average increases of 15-20%; pulses, 20-25%; vegetables, 45-50% and in the case of paddy, yield increases of 25-30% as compared to traditional methods.

<table>
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<th>Sr. No</th>
<th>Crop</th>
<th>Season</th>
<th>Average Demo plot yield (kg/ha)</th>
<th>Average Control plot yield (kg/ha)</th>
<th>% improvement in yield over control</th>
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</table>

*Names of Villages: Chandai Tepli, Chandai Thombari, Chincholi, Deulgaon Tad, Pimpalgaon Barao, Banegaon, Thigalkheda, Palashkeda Thombari

SCI techniques have been used across our project villages in Madhya Pradesh, Maharashtra, Telangana, Jharkhand, Odisha and Rajasthan covering 1,732.4 ha of land in 250 villages.
A Farmer Tackling Climate Change through Innovation

Mr. Ganesh Goud and his group of 7 farmers from Badunapur village were the first Group Micro Irrigation (GMI) participants to ground SCI demo plots under the project. With WOTR’s support, water from five bore wells of farmers in the group were pooled together and connected using a common drip system to irrigate collectively grown crops in the rabi of 2016 and summer of 2017.

Ganesh used to cultivate sorghum; but over the past few years he has been witnessing a delay in the monsoons. This, combined with dry spells and reduced precipitation affected the yields of the crop. Further, upon harvesting, the grain would turn black rendering it unconsumable. Faced with this dilemma, he decided to cultivate paddy; but water in his bore well could irrigate only a quarter of an acre. The subsequent harvest would only provide for four months for his entire family.

Under the project, he is now able to irrigate four and half acres and grows a wide variety of vegetables. The vegetable crops serve as his source of income and meet all food requirements for his family. The seeds are then harvested, stored and utilized for the next season.

Under the project, Ganesh learnt about traditional practices such as intercropping and border crops. While he eagerly adopted these practices, he also up-scaled them and experimenting with different crops. He now grows 8 varieties of vegetable crops in one season – onion, chilli, spinach, potato, coriander, ridge gourd, bitter gourd and tomato.

At the start of the project he had two plots, one on which he undertook cultivation using the System of Crop Intensification (SCI) farming technique and another with his conventional techniques. In the SCI demo plot he was taught how to cultivate tomato using the staking approach. He witnessed an increase of 38 kgs through the SCI technique. The following season, the entire four and half acre land was brought under cultivation using SCI techniques. He was also taught how to prepare organic formulations like amrutkhad and amruthpani. In addition to spraying amruthpani, he has also experimented feeding the organic formulations through the drip system to help him nourish his plant.

WOTR promotes System of Rice Intensification (SRI) in villages to help farmers increase their paddy yield. This short film depicts the basic method and farmers’ positive experiences with SRI methodology.
4. Soil Testing and Soil Health Cards

Soil tests are carried out to check the primary nutrient content like phosphorus, nitrogen and potassium. Also, micro nutrients like sulphur and iron, pH level, electrical conductivity and organic carbon are tested. Optimum quantities of these nutrients need to be maintained for better agricultural production. Soils have often been damaged due to the overuse of chemicals, unpredictable weather conditions like floods, drought etc. and inappropriate cropping and cultivation practices. Hence, on the basis of the information collected through these tests, soil health cards are issued to the farmers that state the results of the tests carried out on their farmland and the kind of crops they are best suited for. Then, our agricultural experts advise them on the best practices to be adopted for improving soil health.

5. Farmers Field School (FFS) and Exposure Visits

Open schools in the fields are unique learning initiatives for farmers to enhance, update and share their knowledge with their peers. These are meeting points for farmers to identify problems adversely affecting their crops in actual field conditions and come up with effective solutions. WOTR agriculture team advise farmers on-site and encourage them to adopt sustainable agricultural methods that are nature friendly and climate resilient. Crops covered were paddy, sorghum, green gram, maize, cotton, soybean, groundnut, pigeonpea, pearl millet, wheat, chickpea, onion, tomato, chilly and brinjal.

6. Livestock Management

Large ruminants, especially cows, are not getting sufficient fodder and nutrition throughout the year. It affects productivity of milk as well as the capacity of bullock for cultivation. Simultaneously, it also affects the food and nutrition security of cattle owing farmers. Livestock also provide an “insurance” to farmers in case of crop failure arising from climatic or non-climatic adverse conditions.

WOTR has carried out 26 high protein fodder demonstrations and conducted 12 livestock management camps which were attended by 279 farmers.
Climate change and climate vulnerability are the biggest threats we face today. The marginalized and the poor communities are the hardest hit as they have minimum resilience and adaptivity and maximum risk and exposure to such events. Hence, we need to involve them collectively in identifying the hazards they face, their traditional and current coping strategies and the gaps to be addressed.

For this purpose, WOTR has developed the Community Driven Vulnerability Evaluation Programme Designer (CoDriVE-PD), a tool that helps to identify vulnerabilities and resilience capacities of the ecosystem, village and communities as a whole, which can be further disaggregated socio-economically and livelihood group-wise. The findings of this participatory assessment are then used as the basis of developing Adaptation Plans to climate-proof landscapes and livelihoods.

CoDriVE-PD Manual can be downloaded at:

It is supported by a web based analytical and presentation software available at:

During the year, Vulnerability and Resilience Assessment using CoDriVE-PD was undertaken in 24 villages.
Table: 3: The Resilience/ Vulnerability Status of a Cluster of 8 villages in Bhokardan, Jalna -across various Landholding Categories of the 5-Livelihood Capitals

<table>
<thead>
<tr>
<th>Landholding Groups</th>
<th>Large and Medium farmers</th>
<th>Small and Marginal farmers</th>
<th>Landless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Capital</td>
<td>Water resources available, Landholding size is larger, more assured Kharif and Rabi production, Availing of government schemes, Income obtained by various other resources</td>
<td>Own smaller parcels of land-less water resources available and are less secured, Less income from rabi production, Some access to agriculture related government schemes, Food security is met mainly from the Public Distribution Service (PDS) and the food grains purchased from the market</td>
<td>Uncertain wage work and limited work opportunities, Rearing few small ruminants, Poultry and non-farm livelihoods, They too depend on credit from money lenders, Depend mainly on the PDS for food security</td>
</tr>
<tr>
<td>Human Capital</td>
<td>Open to learn new agriculture methodologies, Knowledge of improved agriculture operations, Shift from traditional farming to advanced farming, Little knowledge on handling the new crops grown</td>
<td>Open to learn new agriculture methodologies, Knowledge of improved agriculture operations, Shift from traditional farming to advanced farming, Little knowledge on handling the new crops grown</td>
<td>Some skills for rearing of small ruminants and poultry and basic agriculture, Few have skills in non-farm livelihoods, Majority of them are unskilled</td>
</tr>
<tr>
<td>Natural Capital</td>
<td>Although they own larger parcels of land, There is little tree cover other than horticulture, Access to water for agriculture as well as for livestock, Use of dried farm yard manure</td>
<td>Own smaller parcels of land, Less access to water, Less farm yard manure which also worsens soil health due to the use of chemical inputs</td>
<td>Don't own land (some have taken land on lease, their agriculture is rain dependent), They have few small ruminants for manure, No forest based livelihoods available</td>
</tr>
<tr>
<td>Physical Capital</td>
<td>Most of them have access to physical assets such as wells/bore wells, Micro-irrigation, few of them own tractors, harvesters, Threshers etc, Good transportation facility, having non-farm livelihoods related assets, Pucca houses</td>
<td>Mostly they don’t own agri. equipment’s like tractor, thresher etc, Few have assets for their non-farm livelihoods, Semi-pucca houses</td>
<td>Few of them have assets for non-farm livelihoods, Houses are of poor quality and do not have shelter for livestock</td>
</tr>
<tr>
<td>Social Capital</td>
<td>Better functioning of Women’s SHGs, No CBOs such as farmers groups, Producer companies, youth groups functioning, Better access to the Grampanchayats</td>
<td>better functioning of Women’s SHGs, No CBOs such as farmers groups, producer companies, Youth groups functioning in these villages, Little access to the Grampanchayats</td>
<td>They are not part of any CBOs</td>
</tr>
</tbody>
</table>
Table 4: Summary of Above (Table 3):

<table>
<thead>
<tr>
<th>Landholding Groups</th>
<th>Large and Medium farmers</th>
<th>Small and Marginal farmers</th>
<th>Landless</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Capital</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Human Capital</td>
<td>3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Natural Capital</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Physical Capital</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Social Capital</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

**LEGEND:**

5 = High resilience / very low vulnerability;
4 = Medium resilience / low vulnerability;
3 = Low resilience / medium vulnerability;
2 = Very low resilience / high vulnerability;
1 = Nil resilience / very high vulnerability.

Based on this information and other information gathered during the Vulnerability/Resilience Assessment Exercise using CoDriVE-PD, it is easy to design risk mitigation and adaptation strategies to cope with climate change impacts and identify opportunities that may arise.
6. WOMEN’S EMPOWERMENT AND GENDER MAINSTREAMING

160 trainings; 81 exposure visits and 20 women gatherings; 8,462 women participated

Our Approach

WOTR has adopted a gender-inclusive ‘Inner Life Integration and Healing’ approach, inorder to address the deep rooted cultural biases against women resulting in their exclusion from decision making and ownership of assets; heal inner traumas and; strengthen the Sustainable Developmental Goal (SDG) of gender equality too. It is a meditative-reflective-relaxation-process called ‘Atmadarshan’, which facilitates a group of individuals (women and men) to get in touch with the ‘Deep Within’; reflect upon their lives and acquire the ability to view things from a fresh perspective. Through Atmadarshan, deep seated traumas and debilitating psychological beliefs and barriers are healed and re-framed. This is the keystone of WOTR’s approach where interventions aim at a change from within. This approach has been found to be highly effective in bringing about positive and desirable cognitive and behavioural changes in both men and women and in their relationships in rural communities.

WOTR’s interventions in this component during the year are as follows:

1. Engagement of Women through Self-Help Groups

Self-help groups not only act as micro finance units but also serve as effective platforms to collectively engage women in various activities. The groups help women to voice out their difficulties, come up with solutions and formulate an implementation strategy too. Hand holding support is provided through various training, exposure visits and seed funding. **633 SHGs with 80 SMS having 7,407 members were active this year. Additionally, 182 SHG having 2,060 members were newly formed and 104 trainings for these members conducted, in which 2,979 women participated. Also, 36 SMS trainings had a participation of 678 women.** These training sessions build the capacities of women to harmoniously and efficiently manage the tasks of the SHGs and address basic development goals such as, maintaining an SHG register, operating bank accounts - filling in the bank pass book, withdrawing money, depositing money etc., maintaining registers and accounts, health, sanitation and hygiene, cooking and nutrition, etc.
“It is because of SHGs that we have learnt to conduct meetings, discuss problems, come up with solutions, plan activities and events; most importantly, how to manage finances. When I became a Wasundhara Sevika (Village Volunteer), one of my duties was to go to the bank to open an SHG account and deposit our money. The first time when I went to the bank I was scared to go alone and took my husband, followed him around and had no idea about banking. Today, I go alone. All women from SHGs are encouraged to carry out bank transactions themselves.

We are very fond of the project team. In the beginning, I started working on regenerating the defunct SHGs and creating new ones in the village. Recently, we have also started a women-managed Farmer Producer Company. Right now I am one of the Directors of the company. The company is about to start a processing unit for soybean.”

2. Drudgery Reduction Activities

Women have themselves identified activities that require more manual labour, create drudgery and occupy a large portion of their time too.

To ease their work, with WOTR’s assistance, they are now using grinders, pressure cookers, smokeless chullahs (stoves), hotwater chullahs (stoves), induction cookware, kitchen utensils, etc. Some of them have turned their drudgery into entrepreneurship by opening flour and rice mills, thus, supplementing their family income. Also, to reduce the dependence on firewood for cooking, LPG connections have been provided.

804 such drudgery reducing items and equipments have been distributed to women.

3. Raising Awareness, Promoting Cross Learning and Encouraging Leadership

To enable gender mainstreaming in decision making at the village level, active participation and representation of women in the formation of Village Development Committee is encouraged. Women promoters play an active role in spreading awareness about health, nutrition and other social issues affecting women in villages. Trainings focusing on common ailments, family planning, menstrual health, sanitation and hygiene are provided. These women have undergone a major transformation in their behaviour patterns and outlook. They are now much more independent and confident.
4. Women Fairs/ Gatherings

The desire for mutual learning facilitated by social events plays a key role in bringing together women from different villages. These fairs (melavas) provide women a platform to socialise, bond, share and learn from each other, express their opinions and discuss common problems and way of addressing them. These facilitate cross learning and inspire collective actions towards realising common goals. 20 Mahila Melavas were held where 3,686 women participated.

5. Learning and Exposure Visits

Exposure visits are organised so that people get an opportunity to visit other villages to observe and learn from their entrepreneurial successes. They also help in instilling confidence to start their own enterprise. A total of 81 exposure visits were organised and 863 women took part in it.

The film describes WOTR's Women in Distress project aimed at empowering widows and their children through an unique approach of inner healing followed by helping them set up sustainable livelihoods.
WOTR conducts training programs at the Fr. Hermann Bacher Learning Centre (HBLC), located at Darewadi, Sangamner block, District Ahmednagar, Maharashtra as well as in other states. The Learning Centre is an ideal setting for 'Live' training and exposure for the participants. What once was a dusty and drought prone village is now a transformed watershed which hosts trainees from different Indian states and countries of the world. The Centre and a nearby cluster of 30 villages (covering 26,000 ha) serves as the training ground, where the local communities and villagers who have successfully undertaken watershed and other developmental initiatives serve as resource persons.

Some of the major trainings conducted by WOTR during 2016-17 are as follows:

1. Demand and Sponsored Training Programs

WOTR conducts demand based training programs as per the requirements of NGOs, Government, NABARD and Corporates. WOTR also announces different training programs related to watershed development, climate change adaptation and sustainable climate smart agriculture.

During the year, WOTR has conducted 37 such training programs involving 1,118 participants. The participants came from 16 Indian states. Of these 33 programs were organised on watershed development; 3 programs on climate change adaptation and one on Water Budgeting.

Government of Chhattisgarh invited WOTR to conduct on-site training programs on watershed development at Bastar/Jagdalpur in which 70 government officials participated.
2. International Training Programs

During the year WOTR has conducted 3 International programs in which 64 participants participated. These programs were “Exposure-Dialogue Programs” for the students of DePaul University Chicago and GIZ partners from different countries implementing the SOIL project.

3. Trainings conducted for “Satyamev Jayate Water Cup Competition”

WOTR is the Knowledge Partner for “Satyamev Jayate Water Cup Competition” being organised by the Paani Foundation, founded by Mr. Aamir Khan. WOTR has been involved in in designing the project and providing technical support and trainings to the Paani Foundation’s staff, personnel and key villagers. Our engineers and Watershed Volunteers (Panlot Sevaks - PLS) provide on-site technical support in planning and execution of soil and water conservation (SWC) measures in the villages. During 2016-17, WOTR has supported and trained 3,947 participants by conducting 6 residential training programs at the Fr. Hermann Bacher Learning Centre and 65 on-site training programs.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Type of trainings</th>
<th>No. of trainings</th>
<th>No. of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>• Demand and Sponsored Training Programs</td>
<td>37</td>
<td>1,118</td>
</tr>
<tr>
<td></td>
<td>• On Site Training Programs</td>
<td>1</td>
<td>70</td>
</tr>
<tr>
<td>B</td>
<td>International Training Programs</td>
<td>3</td>
<td>64</td>
</tr>
<tr>
<td>C</td>
<td>Satyamev Jayate Water Cup Trainings</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Residential Programs</td>
<td>6</td>
<td>229</td>
</tr>
<tr>
<td></td>
<td>• On Site Training Programs</td>
<td>65</td>
<td>3,718</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>112</td>
<td>5,199</td>
</tr>
</tbody>
</table>

Table 5: Trainings conducted during 2016-17 at the Fr. Hermann Bacher Learning Centre, Darewadi
8. CAPACITY BUILDING AND TRAININGS FOR KNOWLEDGE AND SKILL ACQUISITION

For efficient and effective implementation of various developmental activities, strengthening the abilities, skills and competencies of people is extremely crucial. Moreover, the feeling of ownership and team work are the driving factors for the success of an intervention activity. WOTR not only provides hands-on training to the villagers, thus enhancing their skill sets, but also shares its experience gained over the years with other NGOs, governments, corporates, international agencies and universities.

WOTR’s capacity building activities are as follows:

1. Training and Capacity Building of Villages

Throughout the year, WOTR conducted trainings for villagers for enhancing and building their capacities. These trainings advance their skill sets for developing their villages, boost their confidence and provide a common platform to share their learnings and experiences with fellow and other villagers. A total of 1,148 trainings were conducted and 27,863 people were trained.

Table 6 Overview of trainings conducted during 2016-17

<table>
<thead>
<tr>
<th>Training locations</th>
<th>Trainings conducted</th>
<th>Participants</th>
<th>References (chapters and subsections)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Villages</td>
<td>1,036</td>
<td>22,664</td>
<td>1/2,3, 2/1, 3/1,5, 5/1,4, 8/1,2/4, 10,45, 11</td>
</tr>
<tr>
<td>Fr. Hermann Bacher Learning Centre</td>
<td>112</td>
<td>5,199</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>1,148</td>
<td>27,863</td>
<td></td>
</tr>
</tbody>
</table>

The film in Marathi narrates the tales of villagers whose lives have changed after getting trained into fabrication technology as livelihood option.

Kaushalyatun Samrudhhi

1,148 trainings conducted; 27,863 people trained
635 livelihood activities benefiting 1,099 individuals and their families; 9 Producer Companies set up in 3 States having 1,713 farmer members in 74 villages across 3 states (total of 15 FPOs in 130 villages having 3,505 farmer members)

During the year, WOTR undertook the following interventions:

1. Livelihood Assessment Workshops and Trainings

In the presence of our facilitators, the community assesses the needs of their village with respect to livelihood activities. After arriving at a common consensus on the livelihood activities to be undertaken, they finalise who will undertake activity.

24 Livelihood Assessment Workshops in which 265 persons participated and 43 Livelihood Trainings with 1,415 trainees were conducted.

Following these workshops, six hundred and thirty five (635): individual (299) and group (336)-based livelihood activities like bangle shop, distribution of multi-purpose fruit and vegetable trees, flour mill, goat rearing, rice mills, general stores, grocery shop, xerox machine, cutlery for hotel, sewing machine & pico fall, vegetable shop, back yard poultry and chicken shop, music band, catering business, noodle making machine, sewing machine for tailoring business, soap and detergent based products, livestock raising, pig rearing, cycle weeder, horticulture development and other businesses have been undertaken by 1,099 persons (384 men and 715 women).
2. Exposure visits

These visits are organised so that people get an opportunity to visit other villages and economically successful activities to observe and learn from these exposures also help in motivating people to start their own enterprises and instill confidence in their abilities.

153 exposure visits were organised involving 2,322 persons of which 863 were women.

Usha Ithape,
Pagirwadi village, Ambad,
block, Maharashtra

“Initially only four SHGs were formed at Pagirwadi. Over a time frame of six months, the number increased to 11, resulting in 150 women being a part of these groups. In the monthly meetings, we lend internally to our members. Depending on the need and urgency of the situation, we unitedly decide who the money should be given to and keep a written record of the same. Besides that, we get an opportunity to discuss and take required actions on the various social issues that affect us. The exposure visit to Mhaswandi village, Ahmednagar, instilled the confidence among us to make our village self-sufficient. The training received at Darewadi Learning Centre also enabled us to understand the objectives and the functioning of the self-help groups. Importantly, it created a platform to stand on our own feet and to break free from the social taboos of society.”

3. Financial Support for Entrepreneurial Activities

Seed funding plays a crucial role to kick start micro enterprises. WOTR provides financial assistance to procure the needed equipment at individual as well as community level to kick start their micro enterprise.

Dadarao Chandol, Wadod Tangda,
Maharashtra

“Dadarao suffered from kidney failure at the age of 19. Having three more mouths to feed – his mother, wife and his child – he found it difficult to sustain in such circumstances because of his illness. His altruist mother donated her kidney to him. However, every week Dadarao had to visit the government hospital in Bhokardan to get dialysis done as the transplanted kidney stopped functioning. To add to his misery, he had to sell his land because of the heavy sums of money borrowed from the rich farmers.

‘It has been four years I am living with this illness. Since then, I could not contribute towards the family income at all. This year, in the month of January, some women from our village approached us and pitched the idea of establishing a flour mill. After I came to know that I would have to only contribute 15% to the total cost, I readily agreed. Earlier, my wife was the sole bread winner of our family. She works as a wage worker and earns Rs. 100 daily. As I suffer from fatigue and tiredness, I cannot do manual work for a long time. Now, I can operate the flour mill and have spare time to rest as well. I am in a position to partially finance myself only because of this flour mill.”

4. Farmer Producer Companies

Farmer Producer Organization (FPO) is an umbrella term for Farmer Producer Company (FPC), Multi-State Cooperative, etc.

The formation and development of FPCs is actively encouraged and supported by the Central and State Governments and their agencies. WOTR helps villagers to form producer companies (FPC). These FPCs offer a variety of services to its members e.g. covering almost all aspects of cultivation through post-harvest up to market including processing, value chain and financial services, depending upon their capacities and needs they seek to address. The basic purpose of the FPC is to collectivise small farmers or producers for (a) backward linkage for inputs like seeds, fertilisers, and credit, insurance, knowledge and extension services and; (b) forward linkages such as collective marketing, processing, and market led agriculture production, etc. Thus, they are an important instrument for securing collective bargaining power for small farmers. Every FPC is headed by a set of directors who help in the smooth functioning of its company. 17 participants took part in the training held exclusively for board of directors.

During the year, 15 FPO’s with 3,505 were active and 9 FPCs having a membership of 1,713 people across 74 villages in 3 states –Maharashtra, Telangana and Jharkhand – dealing in a variety of products as described in the table on the next page.
<table>
<thead>
<tr>
<th>Name of the FPC</th>
<th>Location</th>
<th>Membership size / no. of shareholders</th>
<th>No. of villages covered</th>
<th>Type of activities undertaken</th>
<th>Product Basket of FPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ankur Farmer Producer Company Limited</td>
<td>Bhangadewadi, Block-Parner, Dist. Ahmednagar</td>
<td>105</td>
<td>7</td>
<td>Collection Centre Cereals and Pulses Procurement</td>
<td>Mung, Pea, Gram, Wheat, Onion and Bajara</td>
</tr>
<tr>
<td>Yashaswi Farmer Producer Company Limited</td>
<td>Malegaon Kali, Post-Jasapur, Block- Karanja Ghadage, Dist Wardha</td>
<td>150</td>
<td>9</td>
<td>Input Shop at Malegaon- Fertilisers- Pesticides, Seeds</td>
<td>Soybean, Tur, Cotton, Gram and Wheat</td>
</tr>
<tr>
<td>Dhamvalley Farmer Producer Company Limited</td>
<td>Morangana Post-Kharangana, Block- Arvi, Dist Wardha.</td>
<td>255</td>
<td>16</td>
<td>Input Shop at Kharangana Fertilisers, Pesticides, Seeds</td>
<td>Soybean, Tur, Cotton, Gram and Wheat</td>
</tr>
<tr>
<td>Nisargraj Agro Producer Company Limited</td>
<td>Harpada, Sukapur, Block- Sakri Dist. Dhule</td>
<td>488</td>
<td>9</td>
<td>Marketing ( Rice )</td>
<td>Paddy, Maize, Groundnut, Onion and Gram</td>
</tr>
<tr>
<td>Juie Agro Farmers Producer Company Limited</td>
<td>Wadhod Tagnda, Block-Bhokardan, Dist. Jalna</td>
<td>200</td>
<td>1</td>
<td>Input Shop at- Vadod Tangda Village (proposed) -Seeds, Fertilisers</td>
<td>Soyabean, Maize, Wheat, Gram and Chilli</td>
</tr>
<tr>
<td>Maharaja Farmer Producer Company Limited</td>
<td>Rampur, Talakondapally, Dist. Rangareddy, Telangana</td>
<td>59</td>
<td>5</td>
<td>Seeds, fertilisers and marketing</td>
<td>Tomato, Chilli and Maize</td>
</tr>
<tr>
<td>Veldanda Farmer Producer Company Limited</td>
<td>Peddapur, Veldanda, Dist. Mahbubnagar, Telangana</td>
<td>58</td>
<td>3</td>
<td>Seeds and fertilisers and marketing</td>
<td>Tomato, Chilli and Maize</td>
</tr>
<tr>
<td>Damaragidda Farmers Producer Company Limited</td>
<td>Kamsanipalli Damaragidda Dist. Mahbubnagar, Telangana</td>
<td>60</td>
<td>8</td>
<td>Seeds and fertilisers and marketing</td>
<td>Tomato, Chilli and Maize</td>
</tr>
<tr>
<td>Birsa Farmers Producer Company Limited</td>
<td>Dudri, Post- Murhu, Dist. Khunti, Jharkhand</td>
<td>338</td>
<td>16</td>
<td>Input Shop and Animal Feed in Bamni village and Lac Processing Unit in Murhu</td>
<td>Lac and Paddy</td>
</tr>
</tbody>
</table>
Nisargraj Agro Producer Company Ltd was registered on 8th August 2016 under the Companies Act 2013 at Harpada Sukapur near Pimpalner in Sakri Block of Dhule Dist. It has 488 Shareholders members. These shareholders are from 9 Villages (Harpada, Sukapur, Khargaon, Shivkhatyal, Kalamba, Pimpalgaon, Shendvad, Manjiri) within the periphery of 10 kms.

Before the formation of Nisargraj Producer Company, the farming communities were dependent on private players which are based in Pimpalner about 15 kms away from their village. They had to go to Pimpalner for purchasing seeds, pesticides, fertilizers, etc. Mostly, these inputs were sold at a higher price compared to their marked price. Moreover, as individual farmers they found it difficult to sell their produce at a fair price at the markets.

To overcome these problems the farmers decided to form the Nisargraj Agro Producer Company Ltd. with the help of WOTR and SIED. The main objectives of the Producer Company are to get a fair rate for their agricultural produce, and to provide quality agriculture inputs to the farmers in their region at a cheaper rate than the market rate.

Its main revenue generating business activities are collective purchase of inputs (seeds, pesticides and fertilizers), equipment hiring services, product aggregation and marketing of produce and primary processing of agricultural produce i.e. cleaning, sorting and grading of the produce.

In 2016, they sold 60 Quintal rice in Dhule market at the rate of Rs. 5,000 Quintal whereas previously they would have only got only Rs. 3,800 Quintal, thus making a profit Rs. 1,200 Quintal.

In June 2017, they got a loan assistance of Rs. 25 Lakh from WOTR and started a business of agriculture inputs selling. Till date, the turnover has reached Rs. 31,88,786 and Rs.178,000 is the net profit. They are not only selling inputs at a lower rate than that at the Pimpalner market but also deliver services at the farmer’s doorstep (the village)- the farmers also save their travel and transport costs.

Nisargraj Agro Producer Company Ltd have started a farm tool and machinery bank. They supply various farm equipment like seed sowing machine, power tiller and paddy harvesting machine to their farmer members at reasonable rentals thus, saving labour costs.

This is an inspirational tale of a widow from Pathardi block of Ahmednagar, who overcame personal barriers and with the help of monetary support from our projects has become a successful entrepreneur.

Leela Bai
Combating climate change while providing clean energies and reducing drudgery has been one of the major drivers for renewable energy development in rural settings. Alternative energy sources are therefore urgently needed and an important objective of SDG7 is to ensure access to affordable, reliable, sustainable and clean energy for all.

Some of WOTR’s interventions in this regard are:

1. **Smokeless Chullahs (stoves), Hot Water Chullahs (stoves) and Biogas Plants**

Women spend a lot of time and energy in collecting firewood. They make several rounds in the day to gather it. The traditional chullahs are hazardous to health as the smoke can cause acute respiratory, ear and eye diseases. On the other hand, the smokeless and hot water chullahs reduces the dependency on firewood and drudgery and promotes health. **239 Smokeless Chullahs and 56 Hot Water Chullahs were distributed.**

Encouragement of community biogas has led to a **70% decrease in the consumption of firewood in 19 villages** in Mandla and Chhindwara districts of Madhya Pradesh.

**110 household biogas plants and 57 shared biogas units have been given to the rural communities benefitting 224 families.**
2. Solar lighting

People from 10 tribal villages in Madhya Pradesh are located near the forests. Hence, not only are the villagers concerned about travelling after dark but also about snake bites too. After the installation of solar lights, villagers now comfortably travel and snake bites have reduced. Also, people can now peacefully meet after dark for social gatherings. Also, in rural areas, load shedding is a common phenomenon. Hence, there is no electricity for several hours in a day.

**63 Solar Street Lights benefitting a population of 12,000 people and 47 Solar Home lighting systems were installed in 14 villages.**

Before 2016, villagers used to face a lot of problems due to the non-availability of light at night near the common holy place called “Durga Manch” where people used to gather to celebrate social functions like marriages, funerals, common village meetings at night etc. Communities living near the durga manch had approached the panchayat twice for installing street lights so that social functions could be celebrated well without any hassle; but it was always denied and the problem remained unsolved.

In 2016, with the facilitation of one of WOTR employees, Mr. Akhilesh Bairagi, the villagers collectively submitted a demand for the installation of solar street lights to the VDC in a meeting. When the demand was analysed, discussed and passed by the VDC and the Gram Panchayat, a solar street light was installed near the Durga Manch.

Now the villagers are happy and social functions are celebrated without any problem near the Durga Manch. It also benefits people travelling after dark; children are happy to play games after completing their homework in the evening; SHG meetings and village common meetings, which usually take place in the evening are now conducted at Durga Manch.

The film showcases the transition from using conventional energy to solar wind Hybrid system at the Fr. Hermann Bacher Learning Centre.
Access to quality and affordable health care, balanced diet and basic sanitation is a challenge for the poor and the disadvantaged communities, especially for women and children. In India, over 50% still defecate in the open. Eliminating open defecation is the main aim of improving access to sanitation worldwide and is an accepted indicator for the SDGs. Worsening the situation, 80% of children below the age of 3 and 55% of women suffer from anaemia. These alarming statistics call for an immediate action plan that needs to be implemented and monitored on a timely basis.

WOTR’s intervention activities are in alignment with the National Health Mission (NHM) which aims to ensure achievement of indicators such as prevention and reduction of anaemia in women.

Some of WOTR’s interventions in this regard are:

1. Training Health Promoters at village level

Health promoters are motivated and trained to spread awareness amongst the villagers on sanitation, family planning, nutrition and diet, child care, treatment on common diseases, menstrual health and social issues affecting public health. 12 such trainings were conducted and 336 women participated.
2. Activities for a healthy and balanced diet

The height and weight of children of the age 0-5 is monitored on a regular basis. Our Child Growth Monitoring Tool plays a crucial role in keeping a record of every child’s nutritional status. It also helps to train parents in providing a balanced diet for their children and families.

The Tool has helped maintain a record for 2,917 children. Seeds of various vegetables and pulses with high nutritional values are distributed and women are encouraged to plant them in their backyards for daily consumption. 985 kitchen gardens were made. Also, through 102 food and cooking demonstrations, the importance of consuming a healthy and balanced diet is explained.

My son was born in the month of July 2014. He was born underweight and malnourished. His weight was about 2 kg and 500 gm. In August, 2015 he got sudden fever and we immediately took him to the hospital. Inspite of the fact that his treatment continued for almost a month, the weight of the baby reduced further. Thereafter, my family had lost all hopes of his survival.

The Health Promoter (Mahila Pravartak) of WOTR, Parveen Shah, used come to the Anganwadi (crèche) every month to monitor the weight and height of children of 0-5 years of age. Due to this monitoring, I became aware that my child who was 1.5 years old at the time was severely underweight (5.7 kg- Grade 3D in the Child Growth Monitoring System).

Now, Prajwal has turned 3 years old and his weight is 11 kg; he is now moderately underweight (Grade 2D) and steadily improving.

“He does not fall ill that often and is quite healthy because of which my family is joyous and positive.”

Sonali Dehade, Bhalgaon, Aurangabad

This film attempts to explore the problems of heat stress experienced by rural communities of Maharashtra and the mechanisms adopted by them to cope with such situations.
3. Medical Camps

Regular Haemoglobin (Hb) camps are conducted for anaemia detection. **25 HB camps benefitting 3,039 persons were conducted.** Also, **49 health camps were conducted in which 3,609 persons participated.**

4. Adolescent Trainings

Life skills enable individuals to translate knowledge, attitudes and values into actual abilities. These trainings play a vital role in grooming adolescents. **17 Adolescent trainings for 812 individuals (boys and girls) were conducted.** In all these above activities, WOTR’s Wasundhera Sevika, women volunteers from the village play a crucial role.

**17 Trainings for 67 women were conducted.** Also, **to enable women to avail of the benefits and opportunities provided by local government agencies and other schemes, 19 such trainings were conducted in which 285 women participated.**
WOTR’s Communications Unit which specialises in publishing and audio-visuals actively documents and disseminates our progress, learnings, major events and stories from the field through print, digital and social media.

With our increasing engagement on social media, WOTR’s Facebook page has reached out to 1,82,793 people. Our website has been viewed 43,855 times; 2,061 followers from LinkedIn and 403 followers on Twitter have been engaged with. WOTR’s YouTube channel has received around 1,04,138 views and has been watched for 2,03,734 minutes.

In the month of March 2016, WOTR initiated its blog, “Water, Land and Livelihoods” to regularly update the general audience on the implementation and research work carried out by Team WOTR. 28 blog posts have attracted 3,774 visitors and have been viewed 6,945 times.

To keep our friends, donors and well-wishers updated about our important interventions and events and inform and connect with those interested in the causes we promote, we have sent out 1,06,159 mailers. We have also tried to involve our readers in espousing and celebrating particular causes such as World Water Day, Environment Day, International Women’s Day, Earth Day, International Day for Biological Diversity, etc.

Moreover, WOTR is the state nodal agency for Vikaspedia, a multilingual portal of the Government of India. This portal ‘www.vikaspedia.gov.in’ creates a versatile collective knowledge repository with a specific focus on domains relevant to social and economic development. This portal makes available the various advantages of information technology in the form of useful information and also provides the necessary support for its reach to the unreached communities in their own local languages. Hence, in order to reach out to the village communities, 9 trainings for 547 participants were conducted.

The response received has been phenomenal; we would like to thank our viewers and readers from all over the globe for their feedback, appreciation and positive criticism – they help us get better.

**Films made in 2017 (12 in all)**

- Story of Naralewadi
- From Hurdles to Hope
- Jalsevak, the change makers
- Shramdaan
- Jalarogya Takta (Waterstewardship Project)
- माती पर्यावरणानुसार जीन्योजनांचे आरोग्य व्यवस्थापन
- गावाच्या विकासाच्या बाळ प्रक्रिया कसा करावी?
- हरभन्याच्या विकासाच्या बाळ प्रक्रिया कसा करावी?
- “Swagat Aahe” (Film on Save the girl Child)
- भर उडाल - Under the Blazing Sun
- Crispino Lobo’s talk about why watershed is needed? (Marathi)
- लोकसहभागाच्या पाणीव्यवस्थापन ? (Jalsevak Part - 2)
1. Published a Manual ‘Making Biodiversity a Community Resource- the People’s Biodiversity Register: A “How-To” Manual’ prepared by WOTR in collaboration with Maharashtra State Biodiversity Board (MSBB). It was released by the Chairman, National Biodiversity Authority at the ‘National Meet of State Biodiversity Boards on 1st October 2016 in Chennai. This Manual provides step-by-step guidance to non-experts on how to conduct and formulate a PBR (People’s Biodiversity Register) with the engagement of the local community.

2. Watershed Organisation Trust (WOTR) continued to be a Knowledge and Technical partner for “Satyamev Jayate Water Cup Competition” being organised by Paani Foundation, founded by Mr. Aamir Khan. The vision of the Satyamev Jayate Water Cup is to create a people’s movement in Maharashtra to make every village in the state drought free. This year, the outreach of the competition has increased and more than 1,300 villages from 30 blocks from Vidarbha, Marathwada and Western Maharashtra applied to participate in the competition. The Cup is awarded in recognition of efforts put in by the villagers to implement soil and water conservation works in the stipulated time frame. WOTR is involved in designing and providing technical training to the villagers. Our engineers provided on-site technical support in planning and execution of the soil and water conservation (SWC) measures during the contest period.
3. WOTR participated in the 22nd session of the Conference of Parties (COP-22) to the United Nations Framework Convention on Climate Change (UNFCCC) that took place in Marrakech, Morocco from the 7th to 18th November 2016 in which representatives from 196 countries participated. At the Conference, WOTR co-organised a side event titled: “Scaling up Best Practices” on 7th November 2016 along with World Vision International, Cornell University, Adelphi Research and UNDP. At the event, Dr. Marcella D’Souza, presented WOTR’s experience on ‘Climate Proofing Watersheds and Livelihoods in Semi-arid India.’

4. Following upon its successful association with the government of Malawi and having provided technical support to various projects on food security in the past, Project Concern International invited WOTR to provide technical assistance on watershed development activities, vulnerability assessment to climate change and capacity building for the Nirja project. The Nirja project is working to improve food security across vulnerable households in Balaka and Machinga districts of Malawi, Africa.

5. WOTR has played a crucial role in helping farmers from Maharashtra, Telangana and Jharkhand establish their own Farmer Producer Companies. 9 FPCs have been formed and registered this year.
WOTR provides Advisory and Consultancy Services for strategy formulation, project management, training and capacity building across all the verticals that WOTR is engaged in (Please see BOX).

Verticals of WOTR:

1. Participatory and Integrated Watershed Development and Management
2. Climate Change Adaptation (CCA)
3. Integrated Water Resources Management and Water Budgeting
4. Adaptive Sustainable Agriculture (ASA)
5. Biodiversity
6. Sustainable Livelihoods
7. Nutrition, Drinking Water, Health, Sanitation and Hygiene
8. Women Empowerment and Gender Mainstreaming

WOTR provides NGOs, government agencies, corporates, development practitioners and rural communities customised solutions and specific services, as needed. An indicative list is as follows:

1. Trainings and Exposure Dialogue Programs: Designing and conducting customised trainings and events;

2. 360° Capacity Building and Institutional Development: Upgrading the financial, managerial, technical, social, organizational, team building and communication skills of NGOs, CBOs and development practitioners through customized systems-based and outcome-oriented pedagogies supported by on-site accompaniment - essentially, hand holding through each stage in the process;

3. Project Planning, Project Formulation (DPR) and undertaking of Feasibility Studies;

4. Monitoring and Evaluation Studies;

5. Full Cycle Programme Management: From concept, project design, project formulation, implementation, technical support, training and capacity building, fund management to documentation, monitoring, and evaluation;

6. Field Research including Action Research and Thematic Studies,

7. Development of project specific IT-enabled Planning, Monitoring and Decision Support Systems;

8. Development Communication and Documentation for Learning across print, visual and digital formats;

9. GIS and Remote Sensing Services for integrated project planning, implementation, management, monitoring and evaluation: Pre-Implementation assessment of watersheds (baseline); Post-Implementation assessment of watershed and landscape management projects - Change Detection (endline); GIS-based Household analysis, etc. and tailor-made solution services in accordance with client requirements.
→ Altico Capital India Pvt Ltd
→ Andheri-Hilfe Bonn
→ Asian Paints Limited
→ Australian Consulate General Mumbai
→ Becker Cordes Stiftung and Rotary Club of Hagen-Lenne
→ Bread for the World- Protestant Development Service, Germany
→ CLP Wind Farms (Khandke) Private Limited and Nalanda Foundation
→ Concern India Foundation (CIF)
→ Credit Suisse Securities (India) Private Limited
→ Deutsche Equities India Private Limited
→ Deutsche Gesellschaft für Internationale Zusammenarbeit
→ Dr. & Mrs S.H.M. Modi Hormus House Benevolence Trust, Mumbai
→ Dr. Reddy's Laboratories Limited
→ Evangelischer Entwicklungsdienst e.V (EED), Germany
→ Foundation for Ecological Security
→ Friends of WOTR, Germany
→ Gateway to India (GTI)
→ Godrej Interio Division, Godrej & Boyce Mfg. Co Ltd.
→ GOPA-Gesellschaft Fuer Organisation
→ Government of Maharashtra
→ HDFC Bank Ltd.
→ Hindustan Unilever Limited
→ Hindustan Coca-Cola Beverages Pvt Ltd
→ HSBC Software Development (India) Private limited
→ India Development Service (IDS)
→ Indian Institute for Human Settlement (IIHS)
→ International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)
→ Larsen & Toubro Limited
→ Lion’s Club, Germany
→ Ministry of Rural Development, Govt. of India
→ National Agriculture Bank for Rural Development (NABARD)
→ Play Games 24 X 7 Private Limited
→ RBS Foundation
→ Rotaract Club Mumbai
→ SBI Funds Management Private Limited
→ State Level Nodal Agency, Government of Madhya Pradesh
→ The Hongkong and Shanghai Banking Corporation Limited
→ Vasundhara Watershed Development Agency (VWDA), State Level Nodal Agency, Government of Maharashtra
→ Volkswagen Finance Private Limited
→ Wageningen Environmental Research
## STATEMENT OF FINANCES FOR 2016-2017

<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>65%</td>
<td>205,814,249</td>
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<tr>
<td>B</td>
<td>Trainings/workshops</td>
<td>8%</td>
<td>25,062,803</td>
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<tr>
<td>C</td>
<td>Extension support/Information and Publicity material/Networking</td>
<td>7%</td>
<td>20,897,636</td>
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<tr>
<td>D</td>
<td>Operational costs</td>
<td>7%</td>
<td>23,422,526</td>
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<tr>
<td>E</td>
<td>Fixed assets</td>
<td>13%</td>
<td>40,799,483</td>
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<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>315,996,697</strong></td>
</tr>
</tbody>
</table>

### Expenditure in %

- A: 65%
- B: 8%
- C: 7%
- D: 7%
- E: 13%

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ABOUT WOTR:

Established in 1993, WOTR is a non-profit that engages at the intersection of practice, knowledge and policy across scales and in collaboration with stakeholders from across sectors. WOTR assists rural communities to assess their vulnerabilities to climate and non-climatic risks. It organises them in a socially and gender inclusive manner to help themselves out of poverty by regenerating their ecosystems in a holistic and integrated manner, conserving and optimising resource use, especially water, and undertaking climate smart sustainable livelihoods.

The WOTR Group consists of four institutions – the Watershed Organisation Trust (WOTR); the Sampada Trust (ST) for women’s empowerment and micro-finance; Sanjeevani Institute for Empowerment and Development (SIED) which is the implementation wing of WOTR; and Sampada Entrepreneurship and Livelihoods Foundation (SELF) that has been set up to promote social enterprises and livelihoods.

WOTR as a learning organisation has set up the Centre for Resilience Studies (W-CReS) in Pune with a focus on applied research. It closely engages with institutional and governance actors so that insights and good practices derived from the ground experience contribute towards shaping policies and enabling effective programs.

The WOTR Group has been undertaking rural development works directly and with its partners in 4,045 villages, impacting 2.6 million people. Of these watershed development work have been undertaking in 1,703 villages involving a total geographical area of 10,27,974 ha covered, impacting over 1.66 million people. A total of 11,913 SHGs have been formed involving 1,50,751 women. Over 3,95,000 people from 27 states from India and 63 countries have participated in trainings and exposure programs organised by the WOTR Group to date.

For more information visit us at www.wotr.org

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Concept and Cover Photo: Pragati Khabiya
Designed by: Sunaina Havelia