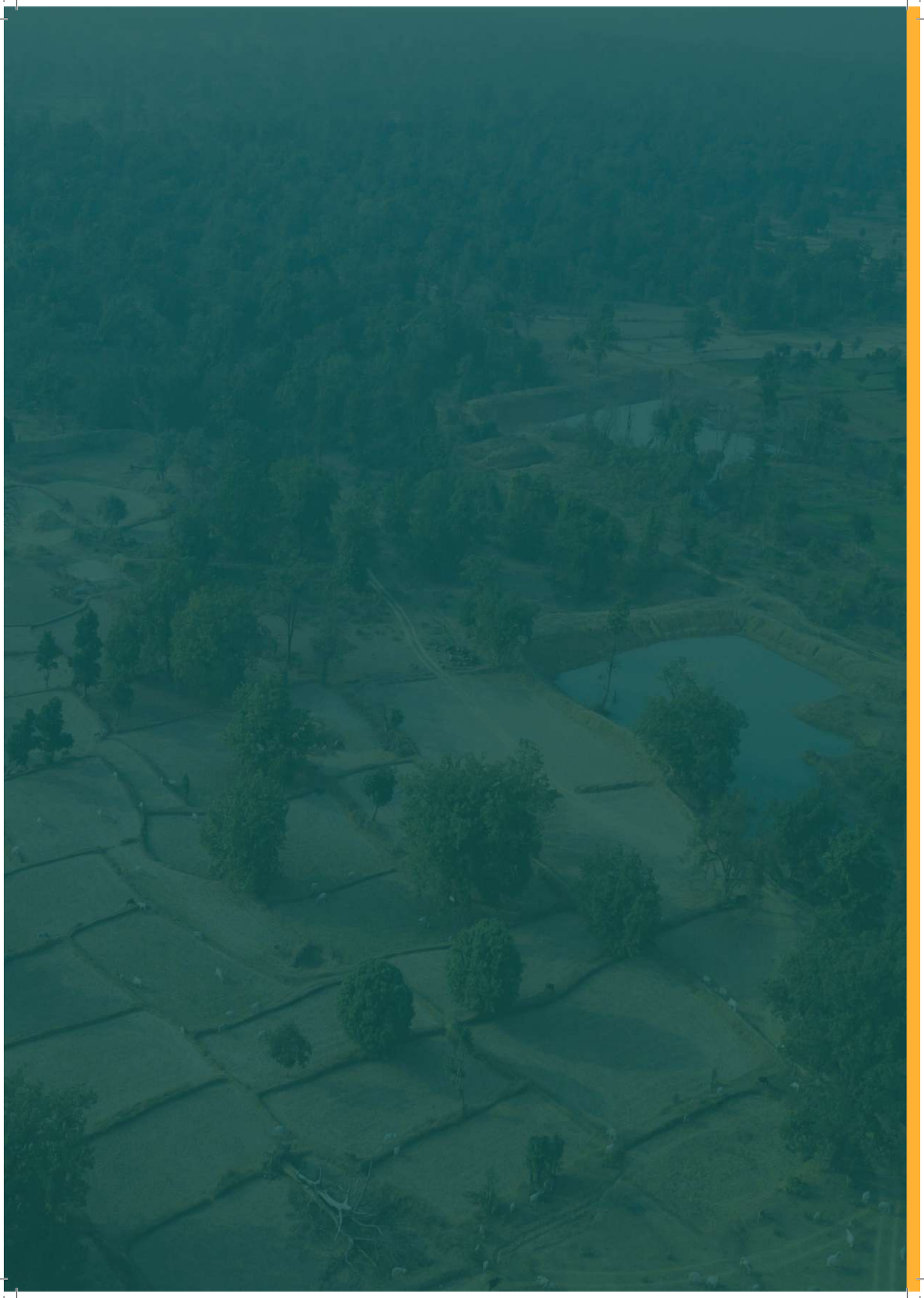
WOTR
Rejuvenating Communities & Ecosystems

ECOLOGIC

A WOTR Newsletter
May 2021

Building adaptive capacities of the community in the Kanha Pench corridor of Madhya Pradesh



CONTENTS

Authors: Shyna Dudeja, Chiti Gupta, Arvind Uikey, Samson David and Rishu Garg
Copyediting: Asif Alam Mazumder
Concept & Design: Vandana Salvi

2nd Floor, "The Forum", Padmavati Corner
Pune Satara Road, Pune – 411009
www.wotr.org

This publication is available electronically at http://wotr.org/publications

Empowering rural communities of the Kanha Pench corridor in Madhya Pradesh

The project "Building adaptive capacities of the community in the Kanha Pench corridor (KPC) of Madhya Pradesh" is a United Nation Climate Change Adaptation Fund funded project. National Bank for Agriculture and Rural Development (NABARD) has been the national implementation entity, while the Royal Bank of Scotland Foundation India as executing entity and WOTR as field implementing partner NGO in the project. It is a four-year project which commenced in April 2017. The project is implemented in 56 KPC villages, of which WOTR is working in 24 villages of Kurai Block of Seoni district. The district is situated in the catchment area of river Pench and Wainganga. The Kurai block is located at a distance of 32 Kms from the Seoni district. WOTR in Madhya Pradesh is involved in building up the capacity of the target groups in the proposed villages to undertake the mix of measures and activities such as the capacity building of community members, institutional building, soil and land conservation, watershed development, climate resilience agriculture, women empowerment and child growth monitoring. Through the proposed project, issues related to agriculture practices, water availability, crop production and nutrition security, migration, and inactive local institutions were identified. Interventions were planned to solve the problems related to the above-mentioned issues. Considering local institutions as key to climate change adaptation, the project has invested in their capacities. As a result, some rules and regulations on commons (both land and water) are framed in most villages. Farmers of the area are informed about the benefits or area treatment. Training and exposures have been undertaken during the reporting period to

capacitate farmers about the goodness of adopting an organic way of farming. Further efforts have been put to eradicate water-related issues by constructing water harvesting structures such as check dams, farm ponds, etc., in the project villages. To promote alternate livelihood provision of kids and bucks has been initiated to those who practice goatery. Benefits of renewable energy have been adopted in the project activities by distributing solar based appliances and gobar gas units. To strengthen a diversified livelihood portfolio, the project invests in a variety of interventions targeted to the poor and marginalized sections of the village. These include strengthening investments in small ruminants and climate-resilient crops like millets, local varieties of paddy and vegetables etc. The project has specifically promoted conservation agriculture practices, contributing to the resilience of farmers. The project's major achievements were the increase in cultivable land. From 2017 to 2020, approximately 25 percent of the increase in cultivable land can be observed. With the increase in water availability and cultivable land, the agricultural production area has also increased by almost 30% in both Kharif and Rabi seasons. The activities varying from land treatment to water conservation for sustainable water harvesting were done in four years under this project. The project has also focused on the capacity building of marginal farmers and women at the village level. In this region of Kanha-Pench Corridor, biodiversity and ecosystem conservation plays an important role, keeping the development of villagers as one of the major goals

Increase in crop production through an area treatment

Devi Prasad is a resident of Khapardarasi village in the Seoni district of Madhya Pradesh and owns 2 acres of barren and uncultivable land adjoining the Pench forest area. Devi Prasad, along with other farmers of the village, proposed farm bunding and allied area treatment activities for the farmland.

Farm bunding is done via the construction of big bunds (usually of earth or stone or both) across large blocks of sloping lands to enclose water and seize soil washed from the fields lying above. The bunding is made to withstand the force of water from the catchment.

Watershed Organisation Trust supported Devi Prasad in completing farm bunding activity after thorough planning and feasibility check of land for area treatment. Farm bunding was done by Devi Prasad himself in his field, while training on the technique of bunding was provided by WOTR's experts. With the help of the interventions, the fallow land has been converted into cultivable land.

Land and soil conservation measures are one of the major activities of the project "Building adaptive capacities of the community in the Kanha Pench corridor (KPC) of Madhya Pradesh" undertaken by WOTR in 24 villages of Seoni district, Madhya Pradesh. One of the objectives of this project is to adopt mechanical and vegetative measures to prevent soil erosion by means of treating area and constructing various structures using the Ridge to Valley concept aimed at reducing soil erosion and maximizing runoff harvesting.

Devi Prasad explains that he had never been able to cultivate a single crop on his land. But, after the intervention, he can grow two crops in Kharif and Rabi season. The soil quality has improved tremendously because runoff of rainwater and soil erosion has been checked through various land treatment activities. Soil moisture and nutrient content are also restored. This year after the paddy harvest, Devi Prasad has also taken up the cultivation of peas and wheat in the current season.

Unsustainable and degraded land has been both cause and consequences of any income-generating livelihoods in rural communities. The majority of the villagers in the region are either forest dwellers or small and marginalized farmers with low household incomes. Combatting land degradation would eventually ensure an increase in household income and diversify livelihood options for the villagers. Most of the farmers face a loss of soil moisture and nutrients, soil erosion, and sedimentation due to excessive deforestation and runoff of rainwater from upland to lowland catchment area.

Before implementing the Soil and Water Conservation (SWC) activity, Participatory Net Plan (PNP) is carried out in the 24 villages. PNP plays a vital role in planning for soil and moisture conservation activities. It is the process of surveying and planning the type of treatment that needs to be carried out in different parts of the watershed area. In this process, the farmer participates along with the VDC members and the technical expert. The process of PNP was carried out by Wasundhara Sevaks in their respective villages. To keep the community informed about the SWC work, their participation was assured in net planning. For soil and water conservation activities, the "The Ridge to Valley" approach has been adopted.

Shramdaan was done to take the project to the community and to assess their readiness. This is carried out to develop ownership of the project in the community so that they can carry out the impacts of the project and maintain its sustainability even after the project gets over.

The area under cultivation has increased, whereas surface runoff of water and sedimentation has reduced hence maintaining soil moisture and fertility. Post successful implementation of interventions, approximately 60 acres of area treatment was done, and cultivable land has increased by 20 acres converting barren land to productive land. Area treatment is directly linked with an increase in cultivable area. The farmers have switched from single crop to multiple crops in Rabi as well as Summer season Field bunding and other allied area treatment structures have been developed by farmers and villagers themselves for which they earned additional income. The farmers in the project villagers are keener on contributing towards the upkeep and maintenance of these structures. Tremendous results have been observed in Khapardarasi, Jhalagondhi and Bisapurmal villages, where the cultivable area has increased by more than 13 acres.

Besides land and soil conservation, WOTR has been helping farmers to adapt to new agro-climatic conditions and acclimatize to new, improved practices and technologies for crop selection and diversification.

Promoting Green and Sustainable Livelihoods

Women of the 24 villages in the Kanha Pench Corridor of Madhya Pradesh are often seen spending their time making Dona – Pattal out of Mahual leaves. They usually make these eco-friendly utensils manually with their hands. This activity was generating income for the families, but had problems with its sustainability. It was found to be consuming a lot of time. The hand-made pattals did not have any standardisation in terms of their size and quality so far. The perishability of the Mahual leaves was also one of the issues. This activity was found to be contributing more towards women's drudgery instead of reducing it. The fine stitching required to hold the pattal was harming the maker's eyes and affecting their eye sights.

WOTR has been working in convergence with National Rural Livelihood Mission to promote SHG formation in the 24 project villages where a project on "Adaptive Capacities in Communities, Livelihoods and Ecological Security in The Kanha Pench Corridor of Madhya Pradesh" is undertaken.

The Village Development Committee (VDC) and the Self-Help Group (SHG) work as conglomerates to achieve the common objective of sustainable development. The SHG ensures women's participation in the process of socio-economic development and community progress. The project intervention includes mobilization of women members of the VDC and village to form an SHG, participate in SHG meetings, handhold the process of documentation, capacity building and registration process, and provide information regarding various schemes and benefits notified by the inline departments.

Basnati Kumre, the president of 'Adivasi Swayam Sahayata Samooh', says, "Before becoming a part of the SHG group, I was

only managing my household chores and other small domestic work of the family. With the launch of the project in our village, I met Neetu who was working as a Wasundhara Sevika in the project. She told the other women and me of the village the benefits of being associated with an SHG group. Along with the other 11 women of the village, I decided to form an SHG in December 2017 and started conducting monthly meetings. Neetu and the other project staff helped us in getting a bank account and a passbook. With this, we started saving money for important activities. We have also lent money to those members who at times were found to be in dire need. We have named our group 'Adivasi Swayam Sahayata Samooh'. Now we have enough savings. Whenever needed, men of our houses also ask to help them and the rest of the family financially. The SHG has empowered us in a way that now we are also a part of the decision making in our families."

Geeta, another member of the SHG, shares her experience of making dona pattal with hands, "I am one of the members of the Adivasi Swayam Sahayata Samooh. I have been involved in making dona pattal for a long time, even before forming our SHG. The first step of making dona pattal is collecting Mahual leaves. They are easily available in the village area. The hard part is to give them a proper shape and sew them together. This requires a lot of precision and hard work. A lot of times, my eyes used to start watering while making dona pattal. It was tough for us first to take care of household chores in the morning and then put so much strain on our eyes later in the day to make few pairs of dona pattal. The whole process used to take a lot of time. Also, the shape of dona and pattal was not that even. Because of its irregular shape and looks, they were sold at a very low rate in the market. Even after putting a lot of effort into making these biodegradable utensils, the return obtained was very low and minimum."

To make dona pattal a common livelihood practice in the area, the project decided to provide hand holding support to one "Adivasi Swayam Sahayata Samooh" of village Jilapur by providing them a Dona Pattal Manufacturing unit. To create a sense of ownership among them, they were asked to contribute half the manufacturing unit's price. The rest half was paid through the project funds. The SHG members contributed Rs 8000 while the rest Rs 8000 were paid through the project funds.

With the provision of dona pattal manufacturing unit, socio-economic upliftment of the SHG group; standardisation of leaf plate size; increasing productivity of the dona pattal; improving market linkage and branding aspects was achieved.

Sulochna, another member of the SHG says, "With the provision of dona pattal manufacturing unit, our lives are now a little easier. Now with the availability of machine, all we have to do is gather Mahual leaves and clean them. We don't have to either sew the leaves together in the shape of dona or pattal. The size and shape are also appropriate and the same for all the units. They look good, and their quality is even better. I t does not take long hours to prepare, nor does it require much hard work. We as a group have earned Rs 20000 annually this year as compared to last year when earnings were approximately Rs. 4000 working manually. The size and number of batches of dona pattal has also increased. It takes a day to complete manufacturing of 2000 dona pattals. While working manually on manufacturing dona pattals, only 250-300 could be prepared in a day as compared to current situation. We also rent out our machine to other SHG as and when required at very less or zero cost. The machine has made our lives much easier, and we cannot be thankful enough to the project for this provision."

Adoption of energy-efficient mechanisms: A case of Atarwani village

A large number of rural settlements are still living without access to electricity in the villages of the Seoni District of Madhya Pradesh. Locals are forced to use sources like burning wood, kerosene, and other fuels to produce light. It has also been noticed that while all villages have installed electricity connection; few of the villagers don't get electricity for days at a stretch due to poor supply. The rural community, particularly children and women, are most affected during these times. People who own a cell phone were seen to be travelling to nearby villages during such times and pay hourly for charging their mobile phones.

Phoolvansha, a native of Atarwani village, says, "As our village falls in the forest area, animal attacks were a common scenario. I used to walk long distances to get wood from the forest so that I can burn those and my family could get some light. My husband, who is the only person with a mobile phone in our family, pays money to get it charged once the battery is dead."

Watershed Organisation Trust (WOTR) has been implementing the "Building Adaptive Capacities of Communities, Livelihoods, and Ecological Security" in the Kanha Pench Corridor in 24 villages of the Seoni district of Madhya Pradesh. One of the project's objectives was to reduce the overdependence of villagers on the forest for energy by promoting alternate uses of power. Solar lanterns, which also have a provision of mobile battery charging, have been provided to 333 households in 24 villages of the Seoni region.

The identification of villages for the distribution of solar lamps was based on a household for electrification. Several

visits were made to the village area, and meetings with full form VDC were held. With the consent of VDC, the selection of beneficiaries for the provision of solar lanterns was decided. The provision of street lanterns is based on a 360-degree model that brings light and impacts lives by addressing issues such as education, livelihood, health, and the environment.

People in 24 villages of Seoni were noticed to be burning woods, fossil fuels, and kerosene for the production of light. With the provision of solar lanterns, the pressure of forests for wood and over-dependence on kerosene oil and fossil fuels has reduced. Students now get more time to study, and women no longer depend solely on sunlight to complete their household chores. Lighting also benefited other household activities, such as sewing by women, social gatherings after dark, and much more. Solar electricity also helped local enterprises like small shops and village markets to operate during the evening. It relieved their reliance on electric supply, which is very unreliable, especially in rural areas of Seoni.

Solar energy can also have significant health and environmental benefits in rural areas. It is considered inexhaustible and does not leave any carbon footprint behind. The installation rates of solar lanterns are very minimal and so is the maintenance cost. Villagers who used to buy kerosene every month for kerosene lamps have reported that their expenses have reduced and now they can use the same money for other purposes. Moreover, due to efficient lighting, women of the village were able to pursue commercial activities like sewing and handicrafts. Owners of tea stalls, local shops and grocery shops reported that with the provision of solar lanterns they have started witnessing longer business hours and increased profits.

Phoolvansha, who benefitted from a solar lantern, now states, “With the provision of the solar lantern, now we very rarely go to the forest for woods. The children also have the availability of proper lighting for studies. With the provision of mobile charging facility, now my husband does not have to wander around to pay and get his phone charged. I have again started sewing clothes for my family members and others with the availability of proper lighting.”

Solar energy is an economically viable source of energy. The installation rates of solar lanterns are very minimal, and so is the maintenance cost. Villagers who used to buy kerosene every month for kerosene lamps have reported that their expenses have reduced, and now they can use the same money for other purposes. Moreover, due to efficient lighting, women of the village were able to pursue commercial activities like sewing and handicrafts. Owners of tea stalls, local shops, and grocery shops reported that they have started witnessing longer business hours and increased profits with the provision of solar lanterns.

It was noticed that solar lanterns have a profound and far-reaching economic, socio-cultural, and demographic impact on 24 villages. Most of the beneficiaries were found to be satisfied with their Solar Lantern.

Enhancing Agroecology -A low-cost adaptation strategy to climate change

"I can see a change in the quality of my land, and the cultivable land has also increased to 1 acre. This Kharif season I have produced a high quality of paddy, using organic fertilizers," – says Jai Singh Baghel, a middle-aged farmer from Khapadarasi village in the Seoni District of Madhya Pradesh.

Jai Singh's primary source of income is from paddy cultivation, which has been dependent on chemical fertilizers such as urea and DAP (Di-ammonium Phosphate). The use of chemical fertilizers has input cost, which for many of the villagers, including Jai Singh, is challenging to manage. In addition to this, excessive use of chemical fertilizers and pesticides was causing damage to the soil ecology. There was not much financial benefit from agriculture as input matched the revenue generated from the sale of the agriculture produce. Most of the earnings were spent on the procurement of DAP and urea.

WOTR has been implementing the project on "Building adaptive capacities of the community in the Kanha Pench corridor (KPC) of Madhya Pradesh," which focuses on issues related to water availability, agriculture practices, crop productivity and nutrition security, local institutions, and increased migration towards making the community adapt to climate change.

Most of the farmers in the project villages were using chemical fertilizers and pesticides such as urea and DAP, leading to land degradation and loss of soil moisture and nutrients. To overcome the challenges of deteriorating agroecology, WOTR has implemented various interventions for soil and land conservation. In Khapardarasi village, 35 farmers have adopted sustainable agriculture practices, especially organic farming. The Village Development Committee (VDC) has played an important role in the mobilization and capacity building of

the farmers in organic farming as well as generating various alternative livelihood opportunities.

With the support from the agriculture experts, organic manure and pesticides were prepared manually by the farmers. A 100 liters capacity drum is used to manufacture Amritpani, whereas 200 liters are used for Dashparni. Organic manure, fertilizers, and pesticides are prepared using locally available resources and is a low-cost input activity. The raw material such as cow dung and neem leaves etc., are readily available to the farmers.

Soon after the initiation of the project, VDC and the project team observed the disinterest in Jai Singh in adopting the organic farming practices, even when his productivity of land was low and stagnant. He was migrating to nearby districts in search of labor work while incurring losses in paddy produce. The activity of preparation of organic manure requires more dedicated time to prepare manure manually, which makes Jai Singh questions to participate in the same. Looking into it, WOTR's agricultural expert and VDC members mobilized Jai Singh and farmers like him on benefits from organic manure and formulations.

During community mobilization, net planning, and training, the knowledge of organic farming and its benefits was shared with the villagers. Technical training was provided in the preparation of Amrit-pani and Dashparni by WOTR's agriculture experts. Then, Jai Singh participated in exposure visits and several training on organic farming. In addition to this, input on System of Crop Intensification (SCI) and System of Rice Intensification (SRI) was provided multiple times. Since these interventions are low or no-cost Jai Singh, and many farmers like him agreed to participate, learn and experiment in their field. This transition took a lot of time and effort to be accepted holistically to adopt all the practices holistically and not partially.

After perusal through training and orientation, he started manufacturing organic manure for his farm and in a very short period recorded noticeable changes not only in the growth of rice crops but also improvement in his farm-land quality. Eventually, enrichment of soil ecology, moisture, and nutrient content could be observed by Jai Singh. Organic farming has benefited Jai Singh in many ways.

He has developed a pit for manufacturing and preparing organic manure (vermicompost) using cow dung and other organic material. Annually 28 quintals of organic manure are prepared by Jai Singh, and one slot of 7 quintals in a respective season is used for 2-3 acres of land for approximately 3 to 4 months. He has recently also begun preparing and using Amrit-pani and Dashparni. Earlier, he used to spray urea and DAP, which now he doesn't use. He has also stated that earning Rs. 7000/- to 8000/- from paddy cultivation on his 1 acre of land. Now, he readily uses organic manure, which not only produces good quality rice but also improves soil fertility. These formulations, when taken with the SCI methodology of cultivation, helps enhance production and reduce crop losses. A simple technique is helping small and marginal farmers to adapt to climate vagaries.

Many farmers of the village had participated and adopted organic farming. Training through farmer field schools and exposure visits were conducted by WOTR's agriculture experts. It is also observed that usage of chemical fertilizers and pesticides has decreased and farmers readily use organic fertilizers and pesticides which doesn't incur any additional agriculture expenses. Therefore, the farmers tend to save a lot of expenditure from procurement of expensive chemical fertilizers and pesticides and eventually has shown an increase in their household income.

Kitchen Gardens improves the nutritional and economic security of households in the Kanha Pench Corridor (KPC)

Vimla Baghel lives with her family in village Khapadarasi of Gopalganj Block in Seoni District. Her family relies primarily on farming for their livelihood. She has been involved in growing kitchen gardens before becoming one of the beneficiaries of the KPC project. However, her previous experience with kitchen gardens was not successful, as she was not aware of an appropriate way of developing a kitchen garden.

Vimla mentioned that before becoming a part of the project, her family's diet lacked diversity and consisted mainly of the crops they could grow on their farmland or purchase in the market. Vimla further noted that relying on the market for food can be costly; thus, their family could not expand their diets through the market.

The project on Building Adaptive Capacities of Communities, Livelihoods and Ecological Security in the Kanha Pench Corridor, which is undergoing in 24 villages of Seoni district of Madhya Pradesh, promotes development and promotion of the sustainable way of living. Under the project, an intervention to grow and maintain a kitchen garden is promoted. Kitchen gardens are commonly known as Badis, a colloquial term in the rural regions of MP serves as an additional source of income and caters to the daily household nutritional needs of the rural family. However, a structured garden with multiple crops, including annuals, perennials with a mix up of vegetables, fruits and flower crops has its advantages over a mono-cropping system. With the same intent, a model of Mandap Vidhi has been introduced in the project villages.

Mandap Vidhi is a unique method to grow a kitchen garden. With the help of this method, it is possible to make maximum use of a little space to grow different types of vegetables. In this method, plants of vegetables that grow as climbers or vines can flourish above the mandap while the root vegetables, tubers, and small plants can be grown under the mandap. This is an efficient method for vegetables that require shade. This method does not have a lot of irrigation requirements. It is feasible for those who don't have access to water resources. Even the wastewater coming out of the kitchen or bathrooms can be reused in such Badis. In fact, during summer, when there is a shortage of water, it is possible to grow vegetables in a Mandap with a minimum requirement of water.

In the KPC project region, 11 villages have been involved in developing the kitchen garden. This activity is being implemented with 519 households. The development of the kitchen garden has been adapted as an activity to grow vegetables and fruits for self-consumption and also for sale.

During the COVID-19 outbreak, Kitchen gardens have proved to be the most important source of nutrients. The major agenda behind the kitchen garden is to provide for necessary nutritional greens in times of scarcity so that household's cost of buying vegetables from the market is reduced.

Kitchen gardens help increase household income either by the sale of the food products grown in the gardens or by the consumption of the same food items that the families would have otherwise purchased from markets using a significant portion of the family income. The total monetary value of the vegetables is around 1700-1800 INR, which is distributed as vegetables sold, vegetables shared and self-consumption.

Vimla Baghel's kitchen garden is on a plot size of 20 × 30. The production area is situated in her backyard and is located where the wastewater from the kitchen flows. She has adopted organic practices for vegetable production; incorporating organic practices like using compost and amritpani as fertilizer and dashparni as a pesticide has ensured organically produced vegetables which has reduced exposure to harmful chemicals and has also reduced the expenditure on chemical fertilizers and pesticides. The long-term impact can be seen in the improvement in soil quality and moisture content hence improving the overall soil profile.

During the lockdown imposed due to the spread of COVID19, Vimla Baghel had shared vegetables with neighbors in the time of need when markets were not operating, and there was a demand shortfall for vegetables. Many women look up to Vimla as an inspiration for backyard utility and ownership. Her efforts have placed her in a higher position within the family and have made her in-charge of the resource.

Following are the villages and no of families who adopted the activity. The objective of the intervention was to provide for nutrition, to create a year - around source of fresh vegetable supply. The major objective behind the activity is to utilize the waste water from the household efficiently.

S.No	Village	Households	No of farmers in 2018	Farmers in 2020
1	Atarwani	101	45	99
2	Magarktha	52	35	42
3	Bakarampath	53	30	45
4	Jhalagondi	130	65	120
5	Darasikala	165	45	150
6	Karkoti	47	35	40
7	Darasikhurd	274	51	210
8	Nayegaon	150	15	100
9	Khapachitaphal	123	30	111
10	Rukhad	89	3	45
11	Khapadarasi	170	69	150
12	Bichhuvamal	154	15	97
13	Bichua Ryt	15	3	10
14	Sawri Reth	63	13	48
15	Pindrai	445	17	138
16	Gorakhpur	103	20	67
17	Chandrapur	88	14	73
18	Bisapurmal	64	23	58
19	BisapurRYT	106	12	86
20	Jilapur	109	25	84
21	Bhilwa	109	28	87
22	Chikhli	216	50	178
23	Sewankanhar	76	15	54
24	Bawli	75	30	70
Total		**2977**	**688**	**2162**

From open grazing to sustainable fodder development

Hybrid Napier grass of variety BHN 10 has been introduced in village Khapadarasi of the Seoni district situated in the corridor area. The purpose of the intervention was to reduce the dependency of the cattle rearer on forest and community land while promoting natural regeneration and enhancing milk and meat production.

Napier is a perennial grass as fodder sweet in taste and is suitable for cattle and goats. Napier production has reduced the grazing time and forest dependency to a measurable extent helping in checking human-livestock-wildlife conflicts in the area.

Livestock has been a major source of livelihood for the forest-dependent communities. With the decrease in available pasture land, it has been a challenge for farmers to carry on with the practice of free-range system due to a lack of land as a resource. Along with this grazing lands available for livestock have already been heavily grazed, resulting in total loss of natural regeneration, creating fragmentation. This has resulted in patches becoming devoid of vegetation cover, expediting soil erosion and causing irreversible damage to the forests. Villagers involved in livestock management feel burdened because of the high maintenance and input cost required compared to expected returns from livestock, which are very low, whereas returns have been meagre. Those involved in livestock production use the animals either for milk and meat production or for selling purposes.

WOTR looked into the villagers' concern on the loss of livestock due to diminishing sources of fodder. The farmers in the village are dependent on forest land and resources for grazing of animals and as the summer approaches, the availability of green fodder also decreases. It results in lower milk yield and the possibility of the cattle to stray deeper in the reserve forest area leading to cattle kills or offendable and punishable entry to the forest area. Therefore, under the project "Building adaptive capacities of the community in the Kanha Pench corridor (KPC)" WOTR has introduced a hybrid variety of Napier Grass (BHN 10) as a provision for fodder in the project villages. The beneficiaries were selected with the help of Gram Panchayat and Village Development Committees (VDCs). Introduction to the hybrid grass variety to ensure year-round fodder availability to dairy animals and goats was made.

Napier is a perennial grass as fodder, sweet in taste and is suitable for cattle and goats. It is known to improve milk fat which can result in profitability. Napier production has reduced the grazing time and forest dependency to a measurable extent helping in checking human-livestock-wildlife conflicts in the area.

It is proven that milk production and yield can be increased with proper supplementation and increasing the quantity of green fodder in animal diet as well as provision for necessary nutrient supply and basic components for the animals. Napier grass is the variety which regenerates very fast and occupies a small part of farm land for cultivation. Its production is approximately 300-400 tonnes per hectare rate with harvest period of 75-80 and subsequent harvests of grass after every 45 days. The nutritive value of Napier grass is as follows:

Table 1: Napier grass nutritive value

Growth period (in weeks)	Crude protein (in %)	crude fibre (In %)	Nitrogen free extract In %)	Crude fat (in %)	Ash (in %)	Digestible nutrients
6	7.9	28.8	41.9	2.2	19.2	present
8	6.9	30.7	41.2	2.0	19.2	
10	6.0	32.0	42.5	1.9	17.6	
12	5.9	32.6	42.4	2.0	17.1	
14	5.6	33.9	43.1	2.0	15.4	

The production of fodder in homestead has increased milk yield and helped farmers to reduce their dependence on community and forest land resulting in reduced grazing, decrease in cattle encounters with wildlife and increased scope for natural regeneration on degraded patches. It has been observed that stall feeding conditions have shown great results in cattle health and the optimal weight gain, therefore cattle yield and production is also improved. The following table shows livestock production data and usage patten per hectare in the Khapardarasi village is given as below:

S. No.	Name of the farmer	Date of plantation	Harvesting date	Total usage months	Production per month	Total availability days	8 months cumulative usage quantity	Total cattle for milk purpose	
								Cow	Buffalo
1	Mohanlal	23/8/2019	23/12/2019	8	31.5 KG	240	75	2	0
2	Vijaykumar Valmik			8	31.25 KG	240	75	2	0
3	Sonsingh			8	12.5 KG	240	30	1	1
4	Lakshmiprasad Pandurang			7	2.85 KG	210	6	0	1
5	Dolchand Rahangdale			6	2.77 KG	180	5	1	
6	Deviprasad Chaudhary			5	1.33 KG	150	2	1	
7	Seshchand Munnalal			5	1.33 KG	150	2	1	

The farmers have felt the ease of rearing cattle in the stall feed conditions as their grazing time have reduced and milk production has increased to 20% as per the above-mentioned data.

Rejuvenating Communities & Ecosystems

WATERSHED ORGANISATION TRUST (WOTR)

'The Forum', 2nd Floor, S.No. 63/2B, Padmavati Corner,
Pune Satara Road, Pune- 411009.
Phone: +9120 24226211; Fax: +91 20 24213530
Email: info@wotr.org | Web: www.wotr.org

Follow us at: