

## Best Practice #4: Comprehensive approach to environmental management through holistic development (by adopting WOTR Wasundhara Approach)

**Location:** Sattechiwadi is hamlet of the Hivargaon main village which is situated at the foothills of the Sahyadri ranges in Sangamner tehsil of Ahmednagar District of Western Maharashtra.

### Brief description of the natural environment within the specified location:

**Climate:** Sattechiwadi is situated in Sangamner Tehsil of Ahmednagar District which is a rain shadow region. The area receives all of its annual precipitation from the Southwest monsoon. The average rainfall in the area is about 450 mm. The monsoon breaks in the first/second week of June, and lasts till the end of September generally and sometimes extends up to the second week of November.

**Soil:** The watershed is characterized with sandy loam and silty loam soil, having very shallow soil depth.

**Topography:** The topography of the area is undulating and hilly. The village is encircled by mountains from three sides. The village with an area of roughly 350 ha comprises a well-defined watershed. The entire area in turn is divided in two micro-watersheds with one drainage outlet flowing from north to south.

### Prevailing socio-economic conditions of those living in the location and/or nearby:

**Income level:** Average annual income: Rs. 6,000 8,000/-

**Main income sources:** 83 % of the families have agriculture and allied activities as the main source of income. Backyard poultry and rearing of small ruminants are other supportive income sources especially for landless and very poor families. The villagers are known for expertise in onion and tomato growing.

**Land tenure and land use rights:** Most of the people in the village own land. Average gross landholding per household in Sattechiwadi is about 2.46 ha of rainfed land; 25.30% families are landless.

### Short description of the best practice:

- Climate change proofing and developmental activities implemented
- Soil and water conservation through a systematic ridge to valley area treatment (continuous contour trenches, afforestation, farm bunds) done to prevent soil erosion
- Demonstration and replication of vermi-compost units
- Collaboration with the Forest Department under Joint Forest Management Programme.
- Horticulture plots for mango and chiku plantation
- Improved agricultural equipment
- Growth assessment of the children below 5 years age, followed by establishment of Anganwadi
- Understanding the weather (Agro met station)

- Common lift irrigation schemes
- Drainage line treatments (Gully plugs, Gabions.)
- Plantation in forest area
- Farm ponds
- Alternate livelihoods: Backyard poultry sheds (44 units); barber shop (1); local banjo party group (13 members) and paper plate making (1).

#### **Main problems addressed by the best practice:**

- Environmental:
  - Drinking water security for whole year
  - Vegetative canopy
  - Reduction in runoff and zero soil erosion
  - Regeneration of biodiversity
  - Increase in wild animals.
- Economic:
  - Agricultural employment has increased from 2 months/yr to 10 months/yr
  - Increased fodder and biomass availability
  - Increase in income due to various livelihood interventions
- Social:
  - Women's drudgery reduction through promotion of renewable energy products (improved hot water stove, solar home lights)
  - Improvement in social and human capitals.
- The village community organized in various CBOs, and capacitated to function effectively and efficiently.
- Infrastructure:
  - a) Road construction: Approach road from main road to the village (4 km), constructed through Government funds
  - b) Community hall
  - c) Houses for the homeless below poverty line families through "Indira Awaas Scheme" by the Government of India
  - d) Piped drinking water schemes
  - e) Individual toilets

#### **Specific land degradation problems addressed by the best practice:**

*Land treatments and plantation:* The entire land with appropriate land treatment and drainage line treatment was completed by the Village Development Committee (VDC). Land treatment in the

forest area was completed under the Joint Forest Management through Forest Protection Committee with the collaboration of Forest Department.

*Formation of user's group:* Promoted common lift irrigation schemes for small groups of farmers on equitable water sharing basis.

**Objectives of the best practice:**

- Reducing vulnerabilities of project villagers
- Building response capacity
- Managing climate risks by reducing drought impacts
- Managing impacts of climate change

**Brief description of main activities:**

- Building response capacities, skills, livelihood assets and infrastructure (physical, environmental and ecological) that facilitate adaptation and reduce poverty.
- Promotion of climate proofing livelihood activities
- Enhanced adaptation activities that focus on building robust systems for problem solving.
- Enhancing of climate information to be incorporated in to decisions to reduce negative effects on resources and livelihoods.
- Enhanced actions focus almost exclusively on addressing impacts associated with Climate change. Promotion of climate proofing livelihood activities

**Short description and technical specifications of the technology:**

The Wasundhara watershed development approach is the basis of this programme. It is simple ridge-to-valley approach that changes lives by reshaping landscapes and combating social injustices. The poorest people hold land on the ridges, where the land is the worst because it fails to collect water. It is believed to uplift them first, and then move down toward the people in the valley who need help less urgently.

Institutions/actors involved (collaboration, participation, role of stakeholders): The best practice was developed by the Watershed Organisation Trust (WOTR), Pune (Maharashtra).

**Participation of local stakeholders, including CSOs, fostered in the development of the technology:**

- Local Village Development Committee (Satteai Village Development Committee), comprising of 3 men and 4 women, which is a subcommittee of Gram Panchayat, formed under Wasundhara Approach.
- Sanyukta Mahila Samiti



- Watershed Organisation Trust
- The Agricultural Department
- Soil Conservation Department
- Forest Department
- Hivargaon Grampanchayat (local governance body)
- Zila Parishad
- Agricultural University: Mahatma Phule Krishi Vidyapeeth (MPKV)
- Villagers
- Government of Maharashtra
- Funding Agency: Swiss Agency for Development and Cooperation, Hong-Kong Singapore Banking Corporation (HSBC), Arghyam, Bangalore and Andheri-Hilfe, Bonn (AHB)

### **Major impact of best practice:**

#### ***Production or productivity:***

- Increase in per acre production (quintals) of pearl millet and wheat from 5-6 bags to 14-15 bags.
- Grass fodder which was available only for six months earlier, now is available throughout the year.

#### ***Socio-economic level:***

- Wasundhara approach created the necessary dynamics and incentives to the Village Development Committee, the Samyukta Mahila Samiti and the Panchayati Raj Institutions to demonstrate a positive discrimination in the favour of the disadvantaged. Village Development Committee gives special attention to its poor.
- Fuelwood, dung cake and kerosene were earlier used for lighting and cooking purposes and in order to meet this need trees had to be cut down but as a result of women's initiative all the households have solar lamps and 56 hot water chulahs.

#### ***Environmental level:***

- Water Availability: Before this project, all the wells were seasonal; now 18 of them have water available till the end of June up to the next year. Water from nallahs can be used till January, which otherwise used to go dry immediately after rainy season was over. Water tables have increased.
- Land Use and Agriculture: Wasteland has decreased by 82 per cent in post-project period. Previously only 2 ha of land was perennially irrigated, which has gone up to 45 ha. Overall land use has increased by 85 per cent.

#### **Major off-site impacts:**

- The Wasundhara Approach has been adopted by WOTR in its all project areas which number 357 projects, covering more than 243,210 ha area. Also, ridge to valley approach as demonstrated by WOTR has been adopted by NABARD and Government of Maharashtra for their project areas.



- Convergence approach which was adopted for integrated village development and demonstrated successfully in Sattechiwadi village is now being spread to other WOTR project areas in its climate change adaptation project.

#### **Impact on biodiversity and climate change:**

- Hot water chullahs (cooking stoves) used for cooking reduced fuelwood consumption by 50%, thus helps reducing carbon emissions and preserving carbon sinks.
- WOTR works for mitigation through promotion practices. All efforts taken in Sattechiwadi led to secure livelihoods of the community which are more climate resilient.
- Planted trees on the agricultural bunds have added into the biodiversity of the region. These trees also act as perching sites for the natural pest control by the trees. Controlled grazing has helped strengthening soil base. Providing livelihood options has minimized pressure on the surrounding ecosystem. Minimized chemical fertilizers usage and more use of organic.

#### **Main conditions that led to the success:**

- Wasundhara approach that led to local initiative to take up the activities: Participative nature of all the activities ensured the community's continuous support throughout the project period and after the completion of the project too.
- Addressing the issue of equitable distribution of benefits and involving community to distribute benefits to the poorest of the poor.
- Village envisioning helped villagers to see their future and design their own path for development of their village.

#### **Replicability:**

*The best practice/technology can be replicated at local level.*

#### **Lessons learnt:**

##### ***Related to human resources:***

- Along with the watershed development a lot of other measures need to be taken up to nourish the human capital, one of them being promoting women's welfare under which five Self Help Groups (SHGs) were formed. These groups act as forums of developmental and income generating activities for the women of the village. The apex body of such SHGs is known as Samyukta Mahila Samiti (SMS).
- The members of the SHGs and SMS underwent training and awareness programmes in aspects like basic concept of self help, roles and responsibilities of managing SHGs, social development activities, health and education for children etc.
- The direct impact of empowered women is visible now. Almost every child in Sattechiwadi goes to school, men don't drink inordinately anymore and women are open enough to be a part of the discussions in Village Development Committee's meetings and in the normal course of life.

### **Related to financial aspects:**

- In the pre-watershed period in Sattechiwadi, water was obtained by digging and hitting lower depths successively, year after year. Rain-fed agriculture was certainly not a source of adequate income, neither were cattle and chickens. Primary source of income for the families was wages they used to get by working on others' fields and by working as industrial workers for the units around. It was not enough to feed families of 5-6 members each.
- People in Sattechiwadi used to go to work on other's fields for a mere Rs. 25/- per day irrespective of whether they had land or not; most of the people used to stay out for work, but after WOTR-Wasundhara's implementation, people had work on their own farms.
- The landless have benefitted as landowners need agricultural labour for their farms. Now they get around Rs. 80/- to Rs.100/- as daily wages.
- Agricultural income also increased significantly. The current average figure is around Rs. 30,000-40,000/- annually for each family as compared to none in the pre-watershed period. Almost 95% of families now have bank accounts as compared to 10% earlier.
- Every family earns at least Rs.100-150 per month through poultry and if required they also sell their chickens @ Rs.200 without affecting the poultry production.

### **Related to technical aspects:**

- A systematic ridge to valley approach for watershed development is essential.
- A detailed participatory net planning is important because all structures need to be site specific.

*For more information: Watershed Organisation Trust (WOTR), Satara, Road, Pune-411009, Maharashtra, Website: [www.wotr.org](http://www.wotr.org)*

