SUSTAINABLE SPICES INITIATIVE

BRIDGING THE SUSTAINABILITY GAP IN THE INDIAN SPICE INDUSTRY

sustainable spices initiative - India

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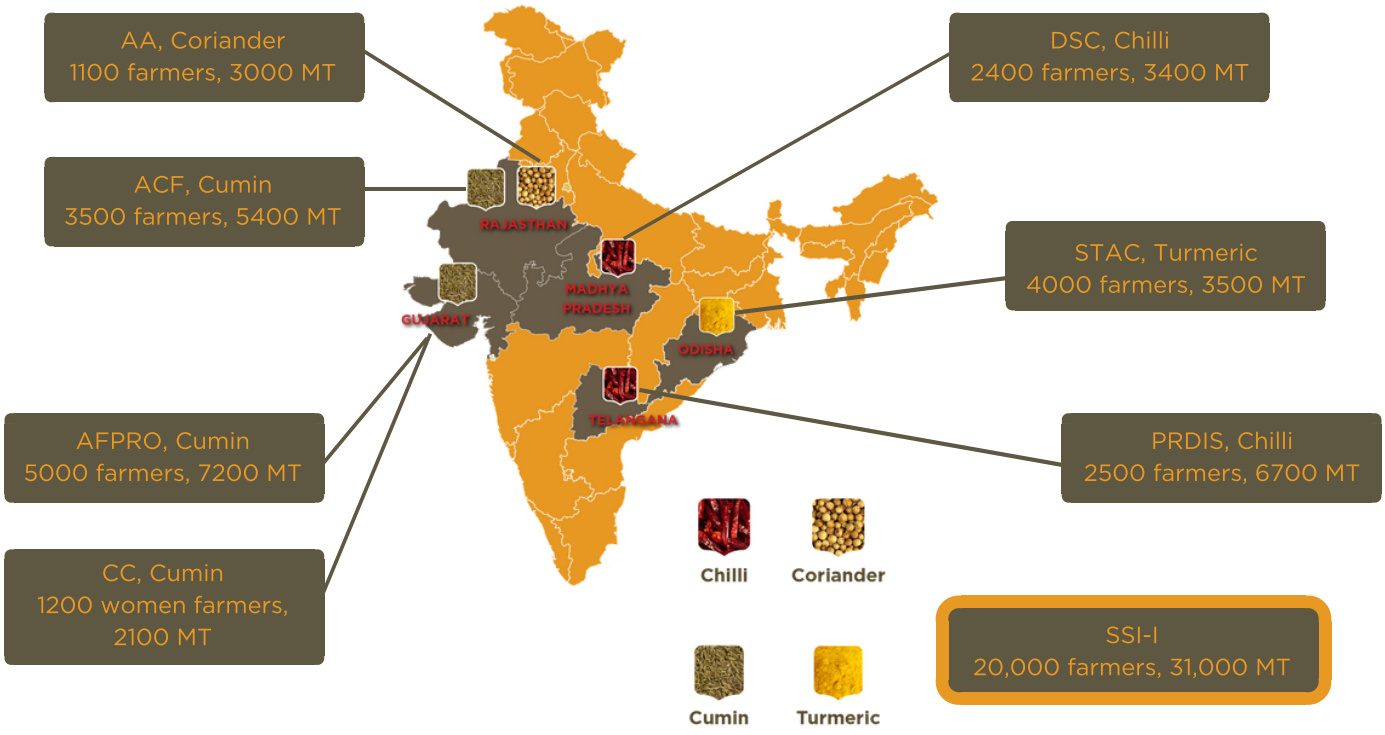
SUSTAINABLE SPICES INITIATIVE - INDIA

The Sustainable Spices Initiative India (SSI-I), part of the global SSI program, is an industry-led voluntary multi-stakeholder platform established as a section 8, not-for-profit to drive sustainable sourcing in the Indian spice industry, while improving the livelihoods of producers, and giving consumers - both locally and globally - increased access to sustainable, food-safe spices.

By participating in SSI-I, farmers benefit from lower input costs, better managed farms, potential for higher incomes and a more sustainable future. Food manufacturers, buyers and retailers will benefit from a higher quality product, a more sustainable source of supply, greater supply chain transparency and a more cost-effective means of improving farming practices.

VISION
To make transparent, credible and traceable sustainable spices in India a mainstream commodity, serving both domestic and international markets

MISSION
To bring sustainable spices to scale by engaging farmers and capturing a 25% share of Indian spices production by 2025.



Our approaches are designed to drive sustainability from niche to norm in mainstream markets, delivering impact on SDGs. That's what our program vision is all about, creating a long-term roadmap for working together with our members.

SSI-I projects are in key spice growing areas in the country. Executed by our implementing partners, the projects have been created an impact on the field towards driving sustainability in the sector.

Participatory Rural Development Initiatives Society (PRDIS)
Khammam, Telangana

Chilli

INTRODUCTION

PRDIS is implementing the SSI-I program in Khammam district to drive sustainable chili production. The program is in its third year of implementation and has made significant impact on areas such as responsible agrochemical management and gender empowerment.

This year, they are working with 2500 farmers to drive sustainable chili production. The program consists of capacity building on package of practices, farmer support, adoption of practices and verification by SSI-I and PRDIS. The core components of training include community development, women empowerment and well-being, optimum natural resource management, proactive farming systems, supply chain linkage and value addition. For 2017-18, the program aims to produce MRL-free chilies with 600 farmers, covering 600 Ha.

RESPONSIBLE AGROCHEMICAL MANAGEMENT

- Under the program, the number of pesticide sprays decreased from 20 to around 12. Further, use of fertilizers such as complex fertilizer decreased by 3 times as compared to the last year. However, the yield increased by 2.5 quintals per acre on an average and the cost of cultivation decreased by Rs. 15,000-18,000 per acre as compared to the previous years.
- Usage of botanicals like Neem seed kernel extract increased this year and Root dipping technique is now followed by maximum farmers in the project area. All project farmers are raising green manure to improve organic matter in the soil.
- All farmers associated with the project are following PHI (pre-harvest interval) period to reduce the MRLs.

INTEGRATED PEST MANAGEMENT

- The program has been promoting border crop, trap crops, sticky traps and pheromone traps for integrated pest management. Further, root dipping technique, bird perches, use of botanicals, growing of green manure crops in main field before transplanting and use of need-based recommended dose of pesticides were also advised.

Training on root-dip method to women farmers

GENDER EMPOWERMENT

- Trainings are given to women group on health, hygiene and nutrition.
- Farm women are trained on decision making on fertilizer application, harvesting techniques and grading of the crop and are also taught botanical preparations.

WATER MANAGEMENT

- Alternate furrow irrigation and irrigating during critical stages of crop including flowering and fruit formation stages, are conducted under the program to improve water management at the farm level.

WORKING CONDITIONS

- Plant Protection Equipment: Trainings were given to workers on PPE to avoid any health-related risk from spraying pesticides.
- Child Labor: Committees were formed on child labor and campaigning was done in schools, where parents were encouraged to send their children to school.
- Sanitation: The program works towards improving school and village sanitation.

Training school children on sanitation

Women farmers being trained on grading

BIODIVERSITY

- The program promotes growing border crop, inter cropping and trap crop to create a bio-diversity by attracting beneficial insects and fight natural enemies of the crop. Further, crop rotation is also encouraged under the program.

SOIL HEALTH & NUTRITION

- Under the program, soil samples for 600 farmers were tested free of cost for soil test-based fertilizer application.
- Under the program, soil samples for 600 farmers were tested free of cost for soil test-based fertilizer application.
  Other activities include incorporation of crop residues and application of farm-yard manure and vermi compost into the soil and growing of green manure crops.

PU Staff participating in construction of toilets under Swachh Bharat Campaign

Farmer Focus

Laxmi Shetti, Chili Farmer
Koyachelaka village, District Khammam

Lakshmi is educated till the 10th standard and has four members in the family. She has a total of 3.5 acres of farm land and is the key decision-maker for farming done on her land. She grows cotton in 2.5 acres of land and chili in 1 acre. She has been cultivating chili for past five years and this year she has grown Teja variety of chili.

On changing agricultural practices at her farm after getting associated with the SSI-I project, she states, "Earlier, I used to apply about 25 bags of fertilizers including, DAP, Urea, Potash on the advice of neighboring farmers and pesticide dealers.

But now I am raising green manure crop, applied sheep penning and reduced fertilizer up to 10-15 bags. Now I am spraying pesticides as advised by chilli project officials and based on the literature given by the organization only when I see pests".

"Now I also know about beneficial insects like spider and lady bird beetle. Further, on the advice of organization staff, I have raised border crop jowar, trap crop marigold, castor and grown intercrop cowpea. I have also erected pheromone traps, yellow sticky traps and bird perches to decrease pest incidence".

"For me, the cost of cultivation is Rs 1,25,240, from which I had got 29 quintals chillies. After being associated with the project, I had reduced cost of cultivation but my profit depends on market price. It will be good if some exporter buys my produce as promised by the organization. This year the profit will be around Rs 1.07 lakhs at the present market prices excluding cost of my family labor".

Bhukya Paramaiah, Chili Farmer
Khammam, Telangana

Bhukya is a farmer with eight members in his family. He has 6.5 acre of land and is the sole decision maker for crop cultivation on his land. Right now, he is growing cotton in 4.5 acres and chili in the remaining area. He has been cultivating chili since the past 10 years and has grown Teja variety of chili this year.

On his association with the project he says, "I joined the project three years ago and am advised on chili crop cultivation by the project facilitator in our village, Sri K. Santhiah.

For the past three years, I am raising my own nursery with T. Viridi and compost. This year, soil sample from my plot was collected and analyzed at Khammam and I was briefed on the availability of the nutrients in my soil. Accordingly, I raised green manure crop and incorporated into the soil one month before planting".
"Earlier, I used to buy pesticides by observing neighboring farmers and on the advice of pesticide dealers. Now I am spraying pesticides as advised by chilly project staff and based on literature given by the organization and only when I observe the pests and their intensity in the field".

"For me, the cost of cultivation is Rs. 1,90,300 and I got 54 quintals dry chillies from the crop this year. The cost of cultivation has reduced considerably for me and the yield is almost same as previous year. As the price was good this year the profit is about 3.5 lakhs. We can increase our profits if the organization can bring some more buyers to export".

Cotton Connect
Surendra Nagar, Gujarat

Cumin

INTRODUCTION

Cotton Connect is implementing SSI-I program in the Surendra Nagar district of Gujarat, focusing on sustainable cumin production. This project is intended to train 1200 cumin farmers (mostly women) in the Dhanghadra region of Surendranagar district in Gujarat. It is being implemented with the help of SEWA, which is the World's largest association for working women, who also have their own local spice brand call "RUDI".

RESPONSIBLE AGROCHEMICAL MANAGEMENT

- Trainings were conducted to raise awareness among cumin farmers under the program regarding banned pesticides. Farmers have been informed that pesticides with red, yellow and blue mark are dangerous to our health and these pesticides are not for food crop and they ultimately reduces quality of cumin and fetches low price in market.

INTEGRATED PEST MANAGEMENT

- Farmers have been trained on identification of beneficial and harmful insects of cumin crop.
- They have also been trained on use of yellow sticky trap for identification and control of aphid in cumin. A demonstration cum training program has been organised in all 11 villages under the project on process of preparation of homemade pesticide such as neem leaf extract and Panchgavya.

Women farmer training

Botanical Preparation

GENDER EMPOWERMENT

- Trained women farmers on sustainable agricultural practices and value addition through local processing by the women self-help groups.

WATER MANAGEMENT

- Farmers have been demonstrated and trained on reduced use of water in cumin crop. They were also demonstrated that flood irrigation at the time of sowing delays germination because seed gets deeper in soil and a hard crust are formed on top layer of soil.

WORKING CONDITIONS

- Personal Protection Equipment: Some farmers have provided personal protection equipment to farm labor such as goggles, face mask, gum boot and full sleeve shirts.
- Steps have also been taken towards improvement of attendance in schools. Quiz contest and educational games were conducted to improve participation from school children and encourage them to attend schools regularly.
- Special training program for farm workers were organised in all villages for health and safety and farmers and farm labors were also trained on equal wage rights.

Women farmer training

Pest and disease identification

BIODIVERSITY

- Farmers have been trained on installation of T-shaped bird perchers.
- Trainings have also been imparted on retaining and protecting plantation in the field as well as the villages.

SOIL HEALTH & NUTRITION

- Soil test of 10% sample farmers was undertaken and fertilizer dose was recommended as per the results of the analysis.

Pest and disease identification demonstration

Farmer Focus

Bhikhiben Ramsangbhai, Cumin Farmer
Village Kuntalpur

IBhikhiben is a 47-year old farmer, who has been into agriculture from the last 27 years. She has two sons and two daughters and 6 acres of agricultural land, in which she has been cultivating cumin in two acres. Even with her years of agricultural experience, she says that she had limited knowledge in agrochemical and pest management.

She states, "I used to apply costly agrochemicals in my cumin crop which always increased my input cost. I used to apply 100 Kgs of Di-Ammonium Phosphate (DAP) per acre."

After getting associated with the program, she has keenly adopted the sustainable practices in her farming methods. She shares, "Now in place of DAP, I had started using NPK- 10 @ 50 kgs per acre and along with this, I had applied one tractor trolley of Farm Yard Manure at the time of land preparation. I also prepare neem leaf extract and Panchgavya (fermented mixture of five elements) in my home and used for first two sprays in the cumin crop. As a result, for the first time, I could see honey bees, spider and lady bird beetle in my field. I have also received 10 yellow sticky traps from CottonConnect and RUDI, which has helped me in identifying pest attack in my field".

Rukhi Ben, Cumin Farmer
Village Nagwada

Rukhi Ben is a farmer based in Nagvada village in Surendra Nagar district in Gujarat. She has a family of four daughters and two sons and is the decision maker in the farming practices in the family. She joined the Sustainable Spice Initiative program earlier this year and is learning about sustainable practices of cumin cultivation. She has six acres of land and is cultivating cumin in one acre.

She shares, "I have received training on benefits of deep ploughing, optimum use seed and plant distance management. Along with this, important part of training was on integrated pest management under which we have learned about border crop and inter crop plantation. I was also surprised to know that yellow sticky traps can be used in cumin and it had helped me lot to understand about type of pest attack specially aphid. From training program, we had also learned that spray of mixture of 500 gm detergent in 15 litre water helps in controlling aphid".

"I also made natural preparation with the help of cow urine mixed with butter milk and allowed it to ferment for 5-7 days and then sprayed in cumin crop, which has helped me to control wilting of cumin. This year, I had also disposed pesticide and fertilizer containers properly as advised. Now we have harvested our cumin crop from the field and left it for two days for drying. After drying, threshing has been done on plastic sheet to control contamination of soil".

Development Support Centre (DSC)
Manavar, Madhya Pradesh

Chilli

INTRODUCTION

DSC is implementing an SSI-I project in Manavar, focusing on sustainable chili production. The program is working with 1200 farmers, who are being trained on the sustainable practices in chili farming including agrochemical management and good agricultural practices. The following variety of chili are planted in the DSC projects: Saniya, Sonal, US 720, Krishna, Priti, Yashoda, Pusa-Jwala, 2680, US 711, and HPH 1900.

RESPONSIBLE AGROCHEMICAL MANAGEMENT

- The program created awareness among the farmers on banned pesticides and its effect on human health.

INTEGRATED PEST MANAGEMENT

- Trainings were conducted on integrated nutrient management method such as use of neem cake and spray of neem seed kernel extract. Further, farmers were trained on border plantation and trap crop plantation with use of yellow sticks traps and pheromone traps.

GENDER EMPOWERMENT

- Self-help groups have been established under the program. These groups are now getting engaged in enterprise activities.on through local processing by the women self-help groups.

Demonstration pilot

WATER MANAGEMENT

- About 90% of the farmers under the program are using drip irrigation for efficient use of water. They are also using Vermi compost for containing the moisture in the crop, which results in less water usage.

WORKING CONDITIONS

- The project actively works towards promoting worker health and safety and creating awareness about child labor and migrant labor.
- Personal Protection Equipment (PPE): Farmers have been trained on safety of their health as well as the farm laborers including use of masks and hand gloves during application of hazardous pesticides and fertilizers.
- The laborers have also been made aware about their wages and received minimum wages as per the government rules.
- Child labor: Awareness program are conducted to reduce the child labor work in farm.

SOIL HEALTH & NUTRITION

- NPK soil testing has been conducted for the farmers to check soil health.
- Farmers have also been trained in applying farm yard manure, trico derma, neem cake and vermi compost, which results in increased soil health and production.

Farmer Focus

Mohan Patidar, Chili Farmer
Village Kolgaon, Dhar

I have been engaged with the project since past three years. With the support of SSI-I project, I have updated my knowledge in farming and learnt about the sustainable farming.

The program has given us training and exposure for the best practices in chili farming. Earlier, we used hazardous pesticides several times on the crop, which increased our cost of cultivation and was also harmful for our health.

After the program intervention, we have started using neem oil in the place of other pesticides, have our own production of vermi compost and organic pesticide for farming and use integrated pest management methods such as border crop, trap crop and blue and yellow sticky traps to prevent the crop from pest attack. Also, we are not using any banned pesticides.

There are measurable changes in our farming practices after getting associated with the program, including reduced cost of cultivation, and safe use of pesticides and fertilizers.

I am thankful to be associated with the project and to receive technical and useful knowledge to sustain farming.

Arvind Patidar, Chili Farmer
Village Ajandikot, Manavar

I belong to a family of farmers and our major crops are Cotton, Chili and Maize. Chili is the cash crop for us and we started producing it a long time ago.
I came in touch with the project two years ago and learnt about all the aspects of farming, including the overall human and social aspect. The SSI project brings to us as a package of knowledge in agriculture practices.

The SSI-I project improved our farming method. Earlier, I did not know about the Trico derma and we never did the seed treatment. But now, do seed treatment for every crop with the Trico derma. Also, we do the nursery rising on the bed and cover up the nursery for the prevention of root rot and pest attack and use vermi compost, neem oil and neem cake on the nursery rising.

Further, we also now know about the banned pesticides with their label. In the last two years, I have never used the banned pesticides in my field. The practices under the programme has helped me in reducing the cost of cultivation and I have been able to learn about organic farming, In the last two years, we had virus attacks on the crop but we still managed to receive the cost of cultivation due to the package of practices followed. Currently, I am doing the pure organic farming in one-acre land.

Ambuja Cement Foundation (ACF)
Nagaur, Rajasthan

Cumin

INTRODUCTION

Ambuja Cement Foundation (ACF) is implementing SSI-I program in Nagaur area of Rajasthan, with a focus on sustainable production of cumin. The project is managed and executed by ACF for 2500 farmers from 18 villages, inclusive of 700 IPM farmers from 5 villages.

RESPONSIBLE AGROCHEMICAL MANAGEMENT

- Under the program, five villages with 954 farmers have been selected for production of MRL-free Cumin.
- Farmers have been advised to avoid using banned pesticides in their crop and were provided with a list of these pesticides for easy identification.
- Farmers have also been trained on health issues related to exposure to pesticides.
- Farmers are trained on biological methods of making organic pesticides such as neem-based Oil, Neemshtra, Brahmashtra, Beejamrit, neem-based seed kernel for promotion of organic pesticides. Awareness on beneficiary insects and seed and soil treatment using Trichoderma Harziarium has also been created through the program.

Training of women farmers on decent work and child labor

INTEGRATED PEST MANAGEMENT

- Trainings have been conducted on agronomical practices which includes deep ploughing,

Training on NSKE preparation

- removing old plant residues, crop rotation, systematic use of fertilizers and irrigation management.
- Farmers have also been demonstrated border crop, trap crop and intercropping for pest management.
- Farmers have also been trained on mechanized method of farming including pheromone traps, and yellow sticky traps.

GENDER EMPOWERMENT

- Trainings have been given to three groups of women farmers on various agronomical aspects to grow cumin in a sustainable way. They were also made aware about same wages policy and equals rights to work.
- Women farmers have been involved in every aspect of project training under the program through self-help groups.
- They are also given assistance to improve their income and saving habits. They are encouraged to open a bank account, which gives them access to bank loans and increase their economic activities.

WATER MANAGEMENT

- The project has selected 18 villages for providing training on efficient uses of water in their cumin crop.
- Trainings were conducted on collection and preservation of rainwater by making farm ponds. Use of mini sprinklers and drip irrigation in place of flood irrigation was also endorsed. Further, crops with less water intake have been promoted to the farmers under the project.
  " Street play for children promoting water conservation was conducted under the project to increase awareness.

Application of yellow stick in Roon village

Training farmers about wilt disease in cumin

SOIL HEALTH & NUTRITION

- Under the project, 833 soil samples were collected from the villages in the project area and tested at Nagaur Soil Testing Lab. Based on the test results, farmer trainings were conducted on soil health and nutrients management, in which they were also trained on soil fertility, making of green manure, compost and farm-yard manure. They were also trained to grow pulses every three years for adaptation of crop cycle and to maintain rhizobium bacteria in soil to increase the fertility of the land.

WORKING CONDITIONS

- Trainings were conducted with the farmers promoting health and safety of farm workers. They were encouraged to wear safety goggles, mask and cap while spraying pesticides in their farms.
- Farmers under the program were strongly advised to not let any person below 18 years to work in the field and farmer parents and laborers were encouraged to send their children to school.
- Women farmers were trained to properly cover their body before applying pesticides and pregnant women were discouraged from working in the farms.

BIODIVERSITY

- Preservation of natural habitats through bird pitchers, border crops, and trap crops, decreased use of pesticides and eliminating usage of banned pesticides have been promoted through the program to the farmers.
- They were also made aware of the differences between beneficiary and harmful insects and encouraged use of yellow stick in the fields for protection from harmful insects.
- Awareness was created among them on cleanliness, saving pond and rivers and benefits of organic farming. Further they were also educated on saving natural habitats and decreasing erosion of top soil by conservation through plantations.

Farmer Focus

Ram Niwas, Cumin Farmer
Village Indokali

Ram Niwas is a seasoned farmer, who has taken over farming from his father. He has 10 members in his family who are all engaged in agricultural activities and animal husbandry. He was growing Cumin on 10 ha land. While the earlier phase of cumin farming was good for him, in recent years it was getting affected with a lot of diseases and then he stopped growing cumin.

On his association with SSI-I, he says, "I benefitted a lot. I attended trainings on topics like integrated pest management, integrated nutrition management, and water management. I also got to know the importance of water and soail testing. During the meetings, I also learnt the importance of crop rotation, crop deep ploughing, application of green manure and compost fertilizers".

"During the trainings, we got to know about banned pesticides which we used to spray in our Cumin crop. This year, we did not spray any pesticides which are banned on our cumin crop. We learnt the techniques of making organic pesticides like Neemshtra, Jeevamrit, Brahmashtra and Neem Seed Kernel Extract. We were also made aware that border crops like coriander, mustard, fenugreek to surround the cumin crop attract beneficiary insects towards which help in pollination. The overall production has increased due to adaptation of these practices. In the Cumin crop, we are also now using advised technique and quantity of water."

Ram Kunwar, Cumin Farmer
Village Khajwana

Ram Kunwar has been a farmer for past 25 years and owns 28 acres of land. He is cultivating cumin in 20 acres out of these. Though he comes from a family of farmers, he states that he had limited understanding of on agrochemical management and right irrigation practices.

He mentions, "I got to know about SSI project during a training session that I attended in my village two years ago. I have been associated with the project since then. Earlier, even after using a lot of chemical pesticides in our Cumin crop, we were not able to control the insects and diseases in the plant. It was also reducing our profits as we used to spend a lot on these pesticides. During the trainings, I learned the harmfulness of the chemical pesticides and that even the beneficiary insects die in the process".

"I also attended trainings on preparation of bio-pesticides, Neemashtra, Jeevamrit, and Brahmashtra and in this season, I have not used any kinds of chemical pesticides in my Cumin crop. Due to this, lots of money which I used to spend on pesticides was saved. I also used a yellow stick and bird pitcher in my field to attract beneficiary insects in our field."

In terms of irrigation, earlier we used to irrigate our crop by flood method. But, on advice of project officials, I have used drip and sprinkler method of irrigation in Cumin crop this year. Because of the water that I saved, I was able to sow Kasuri Methi in my remaining land, which used to remain empty earlier due to limited irrigation options."

Action For Food Production (AFPRO)
Surendra Nagar, Gujarat

Cumin

INTRODUCTION

Action for Food Production (AFPRO) is implementing SSI-I program in Surendra Nagar district of Gujarat, focusing on sustainable cumin production. The project is managed and executed by AFPRO for 5000 cumin farmers, who are trained on good agricultural practices, agrochemical management and IPM.

RESPONSIBLE AGROCHEMICAL MANAGEMENT

- A list of banned pesticides has been prepared and shared with the farmers through Farmer Field Book (FFB) to enable them to easily identify these pesticides and avoid using them. Special training has also been organized in each village under the project for pesticide management.

Campaign on banned pesticides

INTEGRATED PEST MANAGEMENT

- The project is working towards capacity building of farmers on MRL-based cumin cultivation with regular trainings and campaigning on pesticide use.
- Cultural practices such as trap crops and border crops have been adopted by farmers on advice of the project field staff. IPM-based approaches have been demonstrated through cultural practices, alternate pesticides Beauveria, Tricoderma, yellow traps and pseudomonas.

Women farmer training on decent work

- Farmers under the project are categorized and monitored. They have also been provided with SMS advisory service to address the concerns they are facing on the field.
- Trainings have been conducted by Mr. Bala on IPM and pesticides management.

GENDER EMPOWERMENT

- Women trainings have been conducted under the program to create awareness among the women farmers. Further, linkages have also been developed with the Integrated Child Development Services (ICDS) for women group training.

WATER MANAGEMENT

- The project workers have developed water management schedule for the crops. Further, farmers have been trained on alternate irrigation and raised bed. Farmers were also made aware of wilting of crop due to over irrigation.

SOIL HEALTH & NUTRITION

- Fertilizer schedule has been developed based on need assessment and dose as per university recommendations. Under the project, campaigning has been done to reduce DAP and Urea and the farmers have been provided with alternate nutrients.
- Farmers have also been trained in cultural practices, and preparation of castor and neem cake. They are also trained on chemical fertilizer management and organic fertilizer application.
- Farmers have been demonstrated composting and using bio fertilizers. Organic farming is promoted under the program through exposure cum training. Organic farming training is delivered to the farmers through Anand Agricultural University.

Training cum exposure visit

Amrut Jal preparation demonstration

WORKING CONDITIONS

- A list of the farm laborers in the project area has been prepared and adequate training on appropriate working conditions has been delivered to them. Safety kits have also been distributed to the farm workers.

BIODIVERSITY

- Border crop and trap crop is promoted under the project to encourage biodiversity. Farmer are trained IPM-based farming and also made aware on the importance of saving natural habitats.

INNOVATIVE APPROACHES

- Activity-based training for farmers, farm women and laborers have been conducted under the program.
- WhatsApp group for project team members and key farmers have been created to facilitate easier and prompt communication between them.
- Experts from KVK, Agricultural Universities, NGOs, ICT service providers and NRCSS have been involved in the project.
- An SMS service for cumin farmers has also been developed for quick redressal of issues.
- Involvement of capacity builders for farmers training and interaction with experts are facilitated for understanding of best practices.
- Experience of progressive farmers from outside the project area and also from within project area are shared with farmers to improve learnings.
- Exposure cum training visit were conducted for the farmers.
- IEC (extension) materials have been developed in local language.
- AFPRO is also exploring possibilities for solar drying of cumin seeds to get rid of contamination
- LCD projectors, presentations in local language and small video clip practices are used to deliver farmer trainings.

Farmer Focus

Praveenbhai Kalidasbhai Patel, Cumin Farmer
Nanagoraiya, Dasada

I am the member of Sustainable Spice Initiative Project from 2016 and have been provided training and knowledge on cumin cultivation practices. From my learnings, I adopted MRL-based IPM practices in the field. Due to this, I can have reduced cultivation cost through fertilizer applications, pesticides use and also saved water with good crop management practices.

Earlier, I was growing cumin using only chemical fertilizers and pesticides. After involvement with the SSI-I program, I got the regular advice and updates and I started to use organic fertilizer like castor cake and compost, that I never used in our farm in Rabi season. I reduced DAP fertilizer from 125 Kg per acre to 12 Kg per acre. I also saved Rs. 2000 per acre from fertilizer. Due to use of castor cake and compost, the crop demand of urea reduced from 125 kg to 40 kg per acre. The pest attack also reduced.

I also adopted border crop, yellow trap, water management practices, bio pesticides and cultural practices. Due to this, I reduced my overall cost of cultivation by 40% and yield was same as the conventional system. Also, I used Trichoderma, due to which the wilt disease had been not seen in my field. I was also able to reduce seed rate from 10-12 Kg to 7.5 Kg per acre. I started use of biopesticides like Jivamrut and Gaumutra. I applied Agrishakti and Agrisafe instead of the high dose of chemical pesticides. These practices reduced the use of chemical pesticides. We learnt how to cultivate MRL-based cumin and what is the demand of such types of cumin in international market.

Lamanbhai Laljibhai, Cumin Farmer
Surendranagar, Gujarat

Lamanbhai is a cumin farmer from Gujarat, who became a part of the project in 2016. He has been receiving training on sustainable cumin cultivation under the project and has successfully adopted these practices in his farming methods.

He states, "Since adopting the advice given by the trainers, I have been able to reduce the cultivation cost of my crop through reduced fertilizer applications and pesticides use and I have also been able to save water with good crop management practices. Now, I am also using organic fertilizers such as castor cake, that we never used earlier in our farm. I have reduced DAP fertilizer from 100 Kg/acre to 35 Kg/acre. With the use of castor cake, the crop demand of urea reduces from 125 kg to 25 kg. It also directly impacts pest incidence and hence, pest attack reduced considerably, which led to reduced use of pesticides by 5 to 6 times".

"Overall, I was able to reduce my cost of cultivation by around 45% on adopting the water management practices, cultural practices and using bio pesticides. As per learning from sustainable practices, I reduced seed usage from 10-12 Kg to 7.5 Kg per acre. I started use of biopesticides like Gaumutra. I applied Agrishakti and Agrisafe instead of the high dose of chemical pesticides".

"I am now looking at sending the sample of my cumin to the AFPRO office for testing and have stored my produce to sell to the exporters" he mentions.

Azad Agro Enterprise
Kota, Rajasthan

Coriander

INTRODUCTION

Azad Agro is implementing the SSI-I program in Kota district in Rajasthan to drive sustainable coriander production. The program has completed 2nd year of implementation and has made significant impact on IPM-based farming as well as overall farmer community development.

The program is focused on providing all agri related services to the coriander growing-farmers. The program mainly focuses on promoting sustainable practices of agriculture with the aim of working on MRL.

RESPONSIBLE AGROCHEMICAL MANAGEMENT

- Creating awareness of banned pesticides and encouraging farmers to use approved pesticides in right doses.
- Training farmers in making and using botanical preparations on the field.

INTEGRATED PEST MANAGEMENT

- The program has been promoting border crop, trap crops, sticky traps and pheromone traps for integrated pest management. Further, root dipping technique, bird perches, growing of green manure crops in main field before transplanting and use of need-based recommended dose of pesticides were also advised.

WATER MANAGEMENT

- The program has undertaken construction of water pits under various government subsidies and promotes water harvesting techniques.

Sanitation drive under the program

Farmer field visit by project officials

WORKING CONDITIONS

- Child Labor: The project gives special focus to child labor in the program, keeping a vigil on the farms to ensure no child is involved in farm activities. Efforts are made to increase enrolment in schools.
- Health camps and blood donation programs are organized at regular intervals for promoting improved healthcare in the region, especially for children and women.
- Safety kits have been distributed to farmers and farm workers and trainings have been provided to them on safe application of fertilizers.
- Sanitation: The program works towards improving school and village sanitation, under this program Movie 'Toilet Ek Prem Katha' was also showcased at village High School.

SOIL HEALTH & NUTRITION

- Under the program, soil samples for 900 farmers were taken and reports were prepared from NABL accredited lab.
- Farmers have been trained on deep sowing, seed treatment and soil solarization to improve the quality of the soil and the crop.

Training on seed treatment being provided to the farmers

Soil solarisation

With these interventions, the IPM produce in the project area is increasing and the farmers have started applying the techniques suggested under the program. Further, demand for NRCSS seeds from the project region is also increasing. The farmers are now also applying botanical sprays in large numbers.

Farmer Focus

Doltram Sain, Coriander Farmer
Village Barodiya, District Kota

I am a school dropout, and me and my family members are dependent totally on farming. I have a total of 12 bigha of land and out of which coriander is grown in 6 bigha. I have been cultivating coriander for long as it is the cash crop of the region. But from past 2 years, the prices of coriander crashed even though the expenses remained the same or even increased.

After getting associated with the SSI program, implemented by Azad Agro, many things changed in our farming system. Earlier, I used to apply a huge quantity of fertilizers including, DAP, Urea, Potash on the advice of neighboring farmers and pesticide dealers. No natural practice was being performed at the farms. But after getting soil reports, I started implementing the practices advised by the project officials. This has resulted in a very less quantity of fertilizers. I also started using Farmer Field Book and reading literature given by project officials from time to time.

Now with less expense, my profit margin has increased by 20%. I use lesser fertilizers that has decreased my input cost. My crops are also less prone to diseases due to seed treatment and deep sowing. In moderate weather condition, the spray of pesticides is almost nil on my fields. I am also receiving better price for my crops.

Sustainable Textile and Agriculture Commodity (STAC)
Kandamal, Odisha

Turmeric

INTRODUCTION

Sustainable Textile and Agriculture Commodity (STAC) is implementing the SSI-I project in Odisha, focusing on sustainable production of turmeric. The STAC project is under progress with training of 4000 tribal farmers, focusing on botanical application and preparation, data management, demo plots and group trainings. This project also focuses on women group training to help women farmers learn about better agricultural practices.

The STAC turmeric project is being implemented with focus on high curcumin residue free turmeric projection and sustainable agricultural practices. Last season crop's curcumin content is as per industry standard and we expect a high curcumin output this year as well. The major varieties grown are: Turmeric Local, Lakdong, and Reshmi.

Woman turmeric farmer

RESPONSIBLE AGROCHEMICAL MANAGEMENT

- The farmers in the region are doing 100% organic farming. The project is promoting use of botanical preparations such as Jivamrut and Panchamrut for nutrition management of the soil.

INTEGRATED PEST MANAGEMENT

- Project farmers are using Neem and Karanjia oil in the fields. Under the program, they are also trained on using Jivamrut and Gaumutra to improve pest management. The farmers associated with the program are using 100% organic practice toward IPM.

GENDER EMPOWERMENT

- STAC has formed Agri. Women CAFÉ to engage the women in the region. In second year of its formation, we have developed linkages with Manglam Mission, Government of Odisha. We use this platform at village level to train women members of SHGs women turmeric on package of practice. We have plans to establish Agri. Service mall, which will be managed by skilled women in the group.
- 6 women Agri cafés have their own post-harvest centers, thorough this they are giving boiling vessels to the village community at a subsidized rate.

WORKING CONDITIONS

- The project has undertaken capacity building of farmers and staff members on agriculture and management topics, community mobilization, women empowerment health and sanitation activities at village level.
- Community development is one of the major areas in this project and various events were organised at community level to promote sustainable development in the community including hand wash activities with children, programmes on sustainable agriculture, women empowerment and child education.

BIODIVERSITY

- For the boiling exercise, farmers were using wood as the fuel. Under the project, they are trained to find alternative sources or planting 10 trees every year. The project officials have also been working together with the regional forest department towards the plantation exercise. The farmers are also encouraged to plant trees in the farms and using honey bee boxes to improve bio-diversity in the region.

Anandamaye Mahila Sangha, Women;s agri cafe, Kumbharmunda village

Boiling vessels for turmeric

SOIL AND NUTRITION

- Soil testing: Under the project, soil samples from each village was collected and importance of soil testing was explained to the farmers.
- Composting: Traditionally, farmers in the region were using cowdug as a natural substance added to soil or land to increase its fertility. Under the program, they were advised to use natural manure in an improved way and trained on proper compost management practices. In each project village, 10 farmers were selected to do demonstration for compost making. This exercise was started 60-70 days prior to land preparation. In each village, detail pictorial explanation and live demos were given to all farmers.

INNOVATIVE APPROACHES

STAC has taken the initiative of creating its own brand 'Vedic' for sustainable spices grown under the project. The project has established post-harvest centers, which give support to the farmers for boiling vessels and other tools to assist the farmers in having contamination-free crops.

Health and sanitation activities conducted for schoolchildren

Farmer Focus

Balaram Nayak, Turmeric Farmer
Jadabadi, Odisha

Balaram Nayak is a farmer based in Jadabadi village. He has been growing turmeric for several years. When he started farming, he continued the practices he learnt from his fathers.

He shares, "I came across one of the project officials about three years ago, who was sitting at the tea stall in the village and speaking to the farmers about turmeric crop pattern. I got interested and curious upon listening to him and invited to my cluster to discuss the practices in detail. I have been associated with the project since then and have learnt some new and innovative ways to do farming".

"Earlier we faced several challenges, mostly related to nutrition management, contamination and marketing. We are only doing organic farming, so we do not add any chemicals to the field. Our crop quality was decreasing day by day and we are getting very less value for our crop. However, after being associated with the project we were trained on IPM practices, which is increasing the quality of our crops".

"We also did not have much idea about varieties of seed, but this year, I have planted more than 10 varieties of seeds on advice of the project officials". have been associated with the project since then and have learnt some new and innovative ways to do farming.

Sarala Pradhan, Turmeric farmer
Kandamal, Odisha

Sarala Pradhan is a 42-year old farmer, living in the village Kurkuti of Kandamal District in Odisha. This hilly region of Odisha is naturally beautiful with several waterfalls and a lot of greenery. However, the community development in the area has been limited due to lack of basic amenities, negligible communication with outer world and limited knowledge about modern or upgraded agriculture methods.

Sarala Pradhan shared that her entire family of 5 members depend on farming on their 2-acre land. From this, they are cultivating paddy on 1-acre land for household consumption and turmeric on the remaining, which is the major source of income for them. However, farmers in the region are facing several hurdles in their farming practices, including soil testing and market linkage.

While these challenges were not difficult to alleviate, there was a lack of support to these farmers. Speaking about her journey after being associated to the SSI-I, she says "now we are getting better price of turmeric and are also getting training for better cultivation". She also informs that she is now a 'leader of women agri café' under the project, which focuses on gender equality and skill development of women.

Sarala is illiterate, however, after getting associated with the women agri café, she started to learn basic reading and writing and is now able to do her signatures.

She says, "these are very positive changes that came in our live after SSI project started in the region. I am now a confident farmer, getting trained as a master trainer and will be now training others on sustainable and organic agriculture".

SSI-I Impact: How we are making a difference

Started in 2014 as a working group, SSI-I is now a non-for-profit organization functioning as a multi-stakeholder platform to promote sustainable spice production in the country. Since the project started, it has reached about 50,000 farmers, training them on sustainable farming practices. In 2017, around 20,000 farmers were trained under the program, with a collective production of 50,000 MT of sustainable spices.

The program has focused objective of promoting social, economic and environmental sustainability, closely aligned to the Sustainability Development Goals defined by UN. The program is working towards the following goals, which are common to all SSI-I projects:

Gender Empowerment

- No pregnant or nursing women allowed to apply pesticides
- Equal wages for work of equal value (women are often paid lesser wages for same work)

Health and Safety

- Use of minimum Personal Protective Equipment (PPE) in application of pesticides
- Access to potable water on the field

Food Safety

- Responsible agrochemical management
- Need-based pesticide and fertilizer application
- IPM-based pest and disease control
- Awareness on banned and hazardous pesticides
- Awareness on pre-harvest interval

Decent Work

- Child labor, fair wages, improved working conditions
- Natural Resource Management:
  - o Soil conservation
  - o Water management
  - o Eco-system-based approach

sustainable spices initiative - India

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