Success story under AICRP-TSP

1. AAU, Jorhat

Empowering Tribal farmers on Scientific Foxtail Millet cultivation in non-traditional areas of Upper Brahmaputra Valley Zone of Assam

Name of the place: Missimiati, Medok Village
District: Golaghat
State: Assam
Name of technologies/Interventions: Scientific foxtail millet cultivation with the first newly notified variety of AAU (AAU-GSG-Cawn-1).
Name of the Lead Farmer: Mr. Deboram Medok

MekokGaon of Missimiati area in the Golaghat district of Assam, has traditionally relied on farming with limited agricultural diversity. To improve farm productivity and ensure food security, a "Scientific cultivation of foxtail millet" demonstration program was implemented to mark the International Year of Millet (IYM) in 2022-23. This initiative was aimed to promote sustainable farming practices with crop diversification and to enhance the livelihoods of the local tribal communities. Emphasis was given to popularize the growing of nutri-cereals in the cropping system. The land was kept fallow after harvest of kharif rice in previous years.

Intervention Details: As a part of the IYM, 2023, the demonstration programme undertaken by providing 3 kg foundation seeds of newly released foxtail millet variety AAU-GSG-Cawn-1, developed by AAU, Jorhat to 3 tribal farmers in the Medok village of Missimiati area. To ensure the successful adoption of this new crop, Awareness cum Training program was conducted where 29 farmers took part actively. The training focused on best practices for millet cultivation, including soil preparation, sowing techniques, pest management, and post-harvest handling. Millet was a new crop in the village and hence, farmers took keen interest in the programme. After growing the crop successfully, a Field Day event was organized, where 46 farmers participated in a hands-on learning experience, crop cutting was done to see the yield performance of the crop and discussing the benefits and challenges of Foxtail millet cultivation in their village.

Impact in the form of output/outcome: The results of the program were found promising. Farmers recorded a good harvest with a mean yield of 13.5 q/ha among three farmers field and were encouraged by the success of the demonstration. The farmers have decided to save the entire quantity of seeds for future cropping. In the 2023-24crop season, more areas were brought under cultivation of this variety and the area has increased from 3 bighas (4000 m2) in the first year to 10 bighas (13,330 m2) in the second year i.e. 2023-24. Looking at the performance of the crop during 2022-23, the Department of Agriculture, Govt. of Assam has also provided foxtail millet seed to undertake millet cultivation by other farmers of the locality. Thus, a good plan for covering rice-fallow area was achieved. The

area under the crop will further increase during coming year because the crop will be fitted in the rice-fallow situation thereby increasing the farm income instead of keeping the land fallow. Thus, the intervention taken under the project proved to be a successful activity in the Missimiati area and thereby developing a profitable double cropping system in the said village.

Demonstration on Scientific cultivation of Foxtail Millet

Awareness cum Training program

Field view of the foxtail millet crop

2. UAS, Raichur

Name of the place: Buddinni & Thimmapur
District: Raichur
State: Karnataka
Name of technologies/Interventions:
Name of the Lead Farmer:

Intervention Details: Increase in area under crops by supplying of quality seeds to farmers. Adoption of basic agriculture technology like distribution of improved quality seeds of redgram, Bengalgram, sunhemp, and safflower Distribution of tarpaulins pesticides and bio inputs to farmers. Increased income of farmers by utilizing the provided inputs. Gain in knowledge and skill by conducting training programmes and awareness camps. Gain in confidence in farming. Enhancement in the livelihood security.

Impact in the form of output/outcome: It was found that as a result of the interventions the tribal farmers had gained confidence in farming. Farmers have also reported an increase in knowledge and skill on improved technologies and income from agriculture. Regular trainings on different improved agricultures practices and latest agriculture technologies by scientist and farmers interaction have helped farmers of the Raichur district. Trainings on disease and pest management and supplying the chemicals like insecticides and bio inputs to the farmers under the scheme have helped at large extent. The farmers intervened that by using the quality seeds which were distributed under the scheme has led to significant increase in productivity of the crop. The power sprayer distributed under TSP helped the farmers on managing the pests which resulted in getting higher yield. The tarpaulins which were distributed have helped the farmers during the harvesting time for drying the harvested seeds.

Training Programme at H. Thimmapur Village, Sirwar organized by Seed Unit, UAS, Raichur

View of the distribution of inputs Village, Sirwar organized by Seed Unit, UAS, Raichur

3. UAS, Bangalore

Name of the place: Chamarajanagara, Chikkaballapura
District: Chamarajanagara, Chikkaballapura
State: Karnataka
Name of technologies/Interventions:
Name of the Lead Farmer:

India is a country having 1.4 billion populations, 70 per cent mainly engaged in agricultural activities. The country is distributed over 24.62 per cent of forest and people living in forest are the tribal's and they are away from the main stream of urban culture. Main occupation of these tribal's is agriculture and the cultivation is in traditional method. Therefore, Indian Council of Agricultural Research envisaged improving the living conditions of tribal's located in forests through the distribution of improved crop variety seeds and other agri. related inputs to improve living condition of tribal farmers by providing training activities, supply of seeds of improved varieties for cultivation to enhance their productivity, agricultural implements, storage bins and tarpaulin. In view of this National Seed Project, University of Agricultural Sciences, Bangalore has conducted the training programmes and input distribution programme in villages for tribal farmers.

Achievements:

A survey was conducted by National Seed Project staff at Mysore, Chamarajanagara Chikkaballapura and Tumkur districts of Karnataka state during last 10 years (2014-15 to 2023-24) and identified 4762 tribal farmers and organized 22 training programmes. The tribal farmers listed were interviewed and identified the crops grown by them during previous years. Finger millet, Maize, Redgram, Fieldbean, Bengalgram, Cowpea and Groundnut, are the major crops grown by almost all the tribal farmers. Based on the survey, it was decided to distribute quality seeds of improved varieties of food crops as it improved the crop yield by the tune of 15-20 per cent along with fertilizers, agricultural implements and seed storage materials.

Distribution of Agricultural Inputs and Implements

The seeds of improved varieties of Finger millet (209.65 q), Maize (25.85 q), Red gram (31.10 q), Field bean (46.64 q), Bengalagram (25.00 q), Cowpea (2.30 q), Groundnut (131.16 q), Grain Amaranths (0.54 q),French bean (1.52 q), Horsegram (10.00 q), Fodder Sorghum (3.0 q), Macuna (3.0 q), 1479 pockets of kitchen garden vegetable kits (Amarnathus, Tomato, Radish, Carrot, Chilli, Bhendi, Beans and Gourds), DAP (75.00 q) and MOP (75.00 q) were distributed among the tribal farmers. In addition to this, 1350 tarpaulins, 660 storage bins, 1140 sickles, 450 spades, 150 guddalis, 400 Varwari, 150 Pickasi and 840 PVC plastic buckets were also distributed

to the tribal's to store seeds for the next season. Thirteen to fifteen training programmes have been organized at tribal areas by the National Seed Project, UAS, Bangalore to create awareness in seed production of their crop by the team of experts and educated the tribal's on crop production, use of quality seeds, seed storage, nutritional aspects and health etc.,

Area covered by improved high yielding varieties:

Crop	Area Covered (Acres)
Finger millet	4,193
Maize	431
Red gram	622
Field bean	933
Bengal gram	100
cowpea	46
groundnut	219
French bean	30
Horse gram	200
Fodder sorghum	150
Macuna	150

Impact Analysis: The tribal farmers of Mysore, Chamarajanagara and Chikkaballapura districts were re-visited and the feedback indicated that the tribal's were very happy about the new improved varieties which out yielded the local varieties. Ragi improved varieties yielded 18-20 q/ha under rained condition as against their local variety which was yielding 8-9 q/ha and also other crop varieties showed superiority in yield over the local verities. The kitchen garden seeds which were distributed among the tribal's produced nutritious vegetables for their own use and also for local sales in their villages. The taurplins were more useful at the time of sowing, harvesting and threshing and storage bins for proper storing of seeds. Moreover, the training programmes conducted at tribal areas, created awareness about the new high yielding varieties and the monitory benefits by use of improved varieties seed.

Training cum distribution of Agricultural implements under Tribal Sub Plan Programme.

4. BSKKV, Dapoli

Name of the place: Jawhar, Vanai
District: Palghar
State: Maharashtra
Name of technologies/interventions:
Name of the Lead Farmer:

Quality seed is a vital input in agriculture and farmers' access to quality seed of superior varieties is key in increasing agricultural productivity and production. The role of quality seed is documented and acknowledged across farming systems and Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli duly acknowledged and started the milestone project *viz*. AICRP- NSP (Crops) under the guidelines of ICAR from 2008-09. To operate the quality seed program, it is essential to produce a sufficient quantity of breeder seed. Similarly, to organize well-orchestrated seed production programs, research back upon various aspects of seed production technology, quality maintenance and its fine-tuning, storage, seed health care, and seed processing, *etc*. are vital and found to be indispensable.

Under AICRP-NSP (Crops), this centre received grants and started the Tribal Sub Plan (TSP) and Scheduled Caste Sub Plan (SCSP) programme from 2011-12 and 2020-21, respectively. The mandated activities are under the TSP & SCSP in tribal areas for the benefit of farmers. Special training programmes on quality seed production in various crops; farmers' participatory seed production activities; distribution of quality seed, seed storage structures, crop protection equipments& small farm equipments; demonstrations, exhibitions and exposure visits to tribal and Scheduled Caste farmers.

Since last three years, this centre conducted the 09training programmes on quality seed production (University Diary: 400) and distribution of quality seed of rice (6580 kg), cowpea (30 kg), mung (15 kg), vegetable seedlings viz., chilli, tomato, brinjal, cabbage, turnip, broccoli, cauliflower etc. (60,010) and different grafts of fruit, spice and plantation crops viv., Keshar, Lemon, cinnamon, dalchini, K. Bahadoli, kalimiri, arecanut, turmeric etc(7,878). Distributed different crop protection equipments viz., Vaibhav Sickle (50), Ankur spade (20), Khanati (50), Rakshak trap and lures (25 each), small farm equipments viz., Grass cutter (20)& fertilizers i.e., Urea Brickets (3000kg) and organized one exhibition in Wakawali and one Kisanmelasin Virar. These activities were done in Palghar, Raigad and Ratnagiri districts of Konkan region.

Outcome: After the arrangement of training programmes on quality seed production of various crops, tribal farmers received the information for improvement in there indigenous farming

system. Utilized the technologies, new interventions and some inputs (instruments) by the tribal farmers for improvement and mechanization in the farm after the distribution of technologies / interventions / inputs were developed by this centre to them. After the distribution of fertilizers and insect pest intervention to them due this they received the information regarding integrated nutrient and insect pest management for bumper yield improvement. Also distributed the improved grafts of different fruit, spice and plantation crops and cultivation of these crops received the additional income from these crops and finally uplifted their social and economic standard of living.

Photographs of TSP activities under AICRP-TSP project

Farmer Training programme and Input distribution to TSP Farmers (Virar, Thane)

5. CSKHPKV, Palampur

Name of the place: Theimgarang
District: Kinnaur
State: Himachal Pradesh
Name of technologies/Interventions:
Name of the Lead Farmer:

Under TSP programme of AICRP on Seed (Crops) - QSP component, mostly the capacity building programmes are undertaken by CSKHPKV Palampur in 2 tribal districts of Lahaul & Spiti and Kinnaur, and Bharmour subdivision of district Chamba along with distribution of inputs and small and large farm tools. As part of the programme, the centre has provided seeds of new improved varieties of wheat to the farmers of Bharmour subdivision of district Chamba. Selected farmers of 15 panchayats of Bharmour subdivision have also been provided with improved small farm tool kits having utility in agricultural and horticultural operations.

One such successful story relates to previous year wherein all 230 households of 2 villages i.e. The imgarang and Bonning Saring of the panchayat Theimgarang of Kalpa block of district Kinnaur, Himachal Pradesh were provided with improved small farm tool kits having critical utility in agricultural and horticultural operations on their demand. All the households/families of the panchayat are now equipped with improved farm tool kits provided under the TSP component of AICRP on Seed (Crops) - QSP component which are finding utility in various operations and farmers are quite satisfied and happy with these improved tools. The tool kits have pruning and cutting tools for use in apple orchards and improved serrated sickles, hand maize Sheller, diggers etc. that helps in making agricultural operations user friendly and removes drudgery in farm operations.


Farmers of panchayat Theimgarang, Kalpa block district Kinnaur, Himachal Pradesh with tool kits provided under TSP component of AICRP on Seed (Crops)

6. TNAU, Coimbatore

Name of the place: Vannadu & Kombai
District: Trichy
State: Tamil Nadu
Name of technologies/Interventions:
Name of the Lead Farmer:

Improved technologies adopted: Distributed certified seeds of newly released high yielding varieties of finger millet (CO 15), black gram (VBN 8) and horse gram (Py 2) to the tribal farmers. Bio-fertilizers like Azospirillum & Rhizobium and TNAU vegetable seed cubes were distributed to the tribal farmers. Farm implements *viz*., spade, sickle, hand hoe iron pan and crowbar were also distributed to the tribal farmers. Given training on important seed production technologies in different millet and pulse crops. Demonstrated seed treatment with bioagents, bio-fertilizers, identification of weeds, rouging of off-types, foliar application of nutrients and plant protection measures, method of harvesting and post harvest handling at different stages.

Outcome: Created awareness among the tribal farmers regarding seed production and use of certified seeds in crop production. Improved the productivity, and marketability of millets and pulses, which in turn increased the net return and profitability of the small and marginal tribal farmers. Training and demonstration of quality seed production technology to the tribal farmers motivated them to take up seed production. Many tribal farmers were actively participated in the seed production by gaining experience through training programmes and developed their skill on quality seed production in millets and pulses.

Farmer Training programme and Input distribution to TSP Farmers

7. VSI, Pune

Name of the place: Navapur
District: Nandurbar
State: Maharashtra
Name of technologies/Interventions:
Name of the Lead Farmer: Shri. Shaul Vasant Gavit

Socio-economic development of Scheduled Tribes in tribal area inputs were provided to the Schedule Tribe farmers in the tribal area from TSP funds.

Supplied of quality seed material of new pre-released improved variety CoVSI18121. Supplied of VSI Microsol and Multi Macronutrient for foliar application. Supplied of Acetobacter for foliar application and soil health for soil application in four split. Training to tribal farmer for using above inputs and improved cultivation practices. Schedule Tribe farmers having minimum one acre irrigated land and are willing to produce sugarcane are selected for implementation of this project with the help of the sugar factories in the districts of Nasik, Nandurbar & Dhule. All above inputs were supplied only to selected ten Farmers in the tribal area belonging in the category of the Schedule Tribe. This programme has closely supervised by respective sugar factories and monitored by VSI. All these farmers were adopted improved cultivation practices in their field. Yield of sugarcane is increase by 5 to 10MT/acre.

Input to Each farmers:

Quality seed Material @ 8000 Setts/Per Acre, VSI Microsol, Vasant urja, Soil Health, Multi macro nutrient, Multi micro nutrient and Humic acid

List of beneficiaries (TSP Farmer)

Sr.No.	Name of farmer	Address
1.	Shri. Shaul Vasant Gavit	Bhurvel Tal. Navapur Dist. Nandurbar
2.	Karansing Gamersing Vasave	Khatgav Tal. Navapur Dist. Nandurbar
3.	Yogesh Dinesh Gavit	Dhanrat Tal. Navapur Dist. Nandurbar
4.	Umesh Amarsing Gavit	Borpad Tal. Navapur Dist. Nandurbar
5.	Ganesh Dahilu Bhoye	Kuruswad Tal. Sakri Dist. Dhule
6.	Shri. Muralidhar jayram Gawande	Ap. Pahuchi-Bari Tal. Peth Dist. Nashik
7.	Shri. Rohidas Devram Gawande	Ap. Pahuchi-Bari Tal. Peth Dist. Nashik
8.	Shri. Ramdas Namdeo Gavali	Ap. Pahuchi-Bari Tal. Peth Dist. Nashik

9.	Shri. Tukaram Dattu Choure	Ap. Pahuchi-Bari Tal. Peth Dist. Nashik
10.	Shri. Vishnu Hari More	Ap. Pahuchi-Bari Tal. Peth Dist. Nashik

Agril. Inputs and sugarcane seed provided to Tribal Farmers

8. CRIJAF, Barrackpore

Name of the place: Jalumuru
District: Srikakulam
State: Andhra Pradesh
Name of technologies/Interventions: Scientific Mesta cultivation with the newly variety of (AMV-10).
Name of the Lead Farmer: Shri. Ramana Murthy

Yalaman chili is Mesta growing village in Jalumuru (Mandal) of Srikakulam (District) in Andhra Pradesh state. The farmers were cultivating old varieties from long time in this village. The farmers were facing problems like non availability of seed during the season, high cost of seed based on demand, lack of proper germination, purity.

The farmers (Ramana Murthy and Kameswara Rao) of this village showed interest in the cultivation of new varieties (AMV-10) of Mesta in their fields (1.0 Acre).A total of 100kg Certified

seed of Mesta Variety AMV-10 was distributed among15 tribal farmers under Tribal Sub Plan of AICRP on Seed (Crops) during 2023-24 and included in FLD programme and sowing was taken up in second fort night of May. After 15 DAS the famers has expressed that the germination was good with uniform crop growth, good plant population and drawn attention other Mesta growers in the village.

The crop growth was vigorous during initial stages which suppressed the weeds and in the later stages also the crop showed tolerance to sucking pests and disease. The variety has smooth stem which facilitated in utilization of 2-3 less labor for harvesting and enhancement in yield (10-15 %) when compared to local variety. The quality of fiber was good and fetched an additional amount of Rs.150 per quintal (Rs. 2500-3500/ha). Also, Rs.1500 saved per ha for seed cost for next 2 years. Thus, a total of Rs.5000- 6000 is saved by Mesta farmers adopting quality seed of Mesta variety AMV-10.

The other farmer in village showed their interest in cultivation of new variety as they can save the seed from previous crop for next season because of purity which reduces the cost of cultivation.

Advantages of New Mesta variety: Timely availability of seed, Quality seed with good germination and Purity. Uniform crop growth, good plant population. 2-3 less labor for harvesting due to smooth stem Enhancement in yield (10-15 %) and fiber quality, Seed multiplication for next season reduce the cost of cultivation.

Demonstration of Mesta Variety in farmer's field at Yalamanchili village