

Annual Progress Report: 2017-18

6. Tribal Sub Plan and NEH Programme

Contents

Executive summary	341
Detailed report	341
Tribal Sub Plan	341
Implementation of TSP programme at Dindori, Madhya Pradesh	343
Implementation of TSP programme at Athiyandal, Tamilnadu.....	343
Implementation of TSP programme at Jagdalpur, Chhattisgarh	343
Implementation of TSP programme at Vizianagaram, Andhra Pradesh.....	344
Implementation of TSP programme at Mandya, Karnataka.....	344
Popularisation of Small Millets in North Eastern Hilly regions.....	345
Popularisation of Small Millets in Assam.....	345
Prospect and Promotion of Millets in Rain-fed Eco system of Tripura	346
Popularisation of small millets in Namthung, Sikkim.....	349

6. Tribal Sub Plan and NEH Programme

Executive summary

Tribal Sub Plan:

- Programme under Tribal sub plan resulted in introduction of finger millet in tribal populations for cultivation and also consumption. The tribal population in different small millets growing states are encouraged both in physical and financial terms by facilitating small millets cultivation and increasing production and consumption by providing them with improved varieties and also required inputs and implements.
- The TSP programme was carried out in five centres viz., Jagdalpur, Athiyandal, Dindori, Mandya and Vizianagaram. An amount of Rs. 5.00 lakhs was released to different centres during the year 2017-18. The total area covered was 51.6 ha with 109 beneficiaries.
- At Dindori, the demonstrations in farmers field in 8.50 ha area in little millet indicated that there was an increase of 84.16% increase in grain yield and the B: C ratio was 1.66 for improved practice, where as it was 1.14 for farmers practice.
- At Athiyandal, the demonstrations in farmers field in 5.0 ha area in little millet indicated that there was a monetary benefit of Rs. 9845/- by using improved variety.
- At Jagdalpur, the demonstrations in farmers field in 3.80 ha area in Finger millet indicated that there was an increase of 99.24% increase in grain yield and the B: C ratio was 2.21 for improved practice. The demonstrations in farmer's field in 6.0 ha area in Little millet indicated that there was an increase of 86.51% increase in grain yield and the B: C ratio was 0.70 for improved practice. The demonstrations in farmers field in 0.80 ha area in Kodo millet indicated that there was an increase of 116.15% increase in grain yield and the B: C ratio was 1.91 for improved practice.
- At Vizianagaram, the demonstrations in farmer's field in finger millet indicated that there was an increase of 32.27% increase in grain yield

Popularisation of small millets in NEH Region

- As of now, few varieties of millets are sporadically grown by the tribal farmers and consumed in parts of Assam and adjoining the North-Eastern states in limited quantity. The popularization of small millets in this region is important to uplift the economic level of the farmers.
- A total of Rs. 40.48 lakhs has been allocated three centres, viz. Gossaigaon in Assam, Agartala in Tripura and Namthumg, Sikkim to popularise the small millets in NEH region by way of conducting demonstration in farmer's fields in summer and kharif 2017 and summer 2018.
- Besides, implements like thresher and de-husker have been provided to all the three centres.
- The improvement in demonstrations of foxtail millet during Rabi 2016-17 in Assam (Gossaigaon) was 107.83% and that of demonstrations of finger millet in Kharif 2017 was 74.50%. A total of 165 farmers are benefitted through demonstrations.
- Popularizing cultivation of finger Millet under rain fed condition of Tripura, 50.0 ha area has been identified and conducted front Line demonstrations in 8 districts and 3 KVKs across Tripura. Latest Varieties of Finger Millet (KMR-301 and KMR-204) were demonstrated in farmer's fields.

Detailed report

Tribal Sub Plan

Tribes as a whole are technologically and educationally backward though there are several schemes from the government to improve their status in the society. There is a wide range of variation in the socio-economic status as compare to the other sector of the population. It is universally accepted that despite considerable attention, the tribal areas and tribal people in our country lag woefully behind others in development and the tribals continue to be among the weakest and the most exploited section of the society. Various efforts were undertaken

to close the development gap and provide opportunities for tribals in the areas of education, employment and entrepreneurship.

At present India has the record of largest tribal population in the world next only to Africa. Scheduled tribes account for 8.2 per cent of the Indian population (2011 census) living mostly in rural India particularly in the hilly region. Scheduled tribes are being known as "Adivasi". There are a total of 645 distinct tribes in India, majorly found in the states viz., U.P, Bihar, Orissa, M.P, Tamil Nadu, Maharashtra, Jammu and Kashmir, Tripura etc.

The Tribal Sub Plan (TSP) was one such effort by the Government of India initiated during 5th five year plan for the socioeconomic amelioration of the tribal communities. Under the centrally sponsored Tribal Sub Plan project, agricultural schemes are being implemented by the All India Coordinated Research Project (Small millets) under ICAR in different tribal areas of the country for improving the livelihood of the tribal farmers by encouraging small millets cultivation and consumption. The basic objective of TSP is to channelize the flow of outlays and benefits from general sectors in the different departments of GOI for the development of scheduled tribes at least in proportion to their population. The programme resulted in introduction of finger millet in tribal populations for cultivation and also consumption. The tribal population in different small millets growing states are encouraged both in physical and financial terms by facilitating small millets cultivation and increasing production and consumption by providing them with improved varieties and also required inputs and implements.

The TSP was carried out in 5 centres viz., Jagdalpur, Athiyandal, Dindori, Mandya and Vizianagaram and an amount of Rs. 5.00 lakhs was released to different centres during the year 2017-18. The Centre-wise number of farmers and area covered during 2017-18 under TSP is presented in Table 1

Table 1: Centre-wise physical location of tribal farmers under TSP: 2017-18

State	Crop (Variety)	Centre	District	No. of Farmers	Area covered (ha)
Chattisgarh	Kodo millet (JK 439)	Jagdalpur	Bastar	2	0.8
	Little millet (JK 8)	Jagdalpur	Bastar	10	6
	Finger millet (GPU 28)	Jagdalpur	Bastar	6	3.8
Andhra Pradesh	Finger millet (VR 847, (VR 762)	Vizianagaram	Vizianagaram	50	20
Tamilnadu	Little millet (Co 4)	Athiyandal	Tiruvannamalai	9	5
Madhya Pradesh	Little millet (JK 36)	Dindori	Dindori	17	8.5
Karnataka	Finger millet (KMR-301, KMR-340)	Mandya*	Chamarajanagar	15	7.5
			Total	109	51.6

*The demonstrations are planned in summer 2018

Table 2: Centre-wise details of physical and financial achievements of TSP during 2017-18

Centre	Amount earmarked (in lakhs)	Financial achievements (in lakhs)	Area (in ha)	Physical and financial achievement during the year			
				No. of beneficiaries	Physical asset created	Type of asset created	Any other information
Jagdalpur	0.90	0.90	10.6	18	Seeds	-	Front line demonstration

Athiyandal	0.50	0.50	5.0	9	Seeds material, fertilizers and Bio-fertilizers	-	Two trainings and one field day
Dindori	0.85	0.85	8.5	17	Seed materials	-	Filed demonstration
Mandya*	0.75	0.75	7.5	15	Seeds, fertilizers	Seed cum fertilizer drills, inter-cultivators, sieves, sickles, Bamboo baskets	Preliminary survey for the selection of farmers
Vizianagaram	2.00	2.00	20.0	50	Seeds, Vermico mpost, Bio-fertilizers	Sickles, Tarp alines, Millet dehulling machines	Three training programmes Millet Mela
Total	5.00	5.00	51.60	109			

*The demonstrations are planned in summer 2018

Implementation of TSP programme at Dindori, Madhya Pradesh

At Dindori, the demonstrations in farmers field in 8.50 ha area in Little millet indicated that there was an increase of 84.16% increase in grain yield and the B: C ratio was 1.66 for improved practice, where as it was 1.14 for farmers practice.

Demonstration in Little millet at Dindori under TSP

Area (ha)	Grain Yield (Kg/ha)		% Increase over FP	GMR (/ha)		Net Monetary Return (/ha)		B:C Ratio	
	IP	FP		IP	FP	IP	FP	IP	FP
8.5	1081	587	84.16	33166	18198	13166	2198	1.66	1.14

IP = Improved Practice, FP = Farmer's Practice, GMR = Gross Monetary Return

Implementation of TSP programme at Athiyandal, Tamilnadu

At Athiyandal, the demonstrations in farmers field in 5.0 ha area in Little millet indicated that there was a monetary benefit of Rs. 9845/- by using improved variety..

Demonstration in Little millet at Athiyandal under TSP

Area (ha)	Grain Yield (Kg/ha)	Straw Yield (Kg/ha)	GMR (/ha)	Net Monetary Return (/ha)	B:C Ratio
	IP	IP		IP	
5	905	1372	32345	9845	1.44

IP = Improved Practice, GMR = Gross Monetary Return

Implementation of TSP programme at Jagdalpur, Chhattisgarh

At Jagdalpur, the demonstrations in farmers field in 3.80 ha area in Finger millet indicated that there was an increase of 99.24% increase in grain yield and the B: C ratio was 2.21 for improved practice.

The demonstrations in farmers field in 6.0 ha area in Little millet indicated that there was an increase of 86.51% increase in grain yield and the B: C ratio was 0.70 for improved practice.

The demonstrations in farmers field in 0.80 ha area in Kodo millet indicated that there was an increase of 116.15% increase in grain yield and the B: C ratio was 1.91 for improved practice.

Demonstration in Finger millet at Jagdalpur under TSP

Area (ha)	Grain Yield (Kg/ha)		% Increase over FP	GMR (/ha)	Net Monetary Return (/ha)	B:C Ratio
	IP	FP		IP	IP	
3.8	1570	788	99.24	29830	20530	2.21

IP = Improved Practice, FP = Farmer's Practice, GMR = Gross Monetary Return

Demonstration in Little millet at Jagdalpur under TSP

Area (ha)	Grain Yield (Kg/ha)		% Increase over FP	GMR (/ha)	Net Monetary Return (/ha)	B:C Ratio
	IP	FP		IP	IP	
6	636	341	86.51	10042	4141	0.70

IP = Improved Practice, FP = Farmer's Practice, GMR = Gross Monetary Return

Demonstration in Kodo millet at Jagdalpur under TSP

Area (ha)	Grain Yield (Kg/ha)		% Increase over FP	GMR (/ha)	Net Monetary Return (/ha)	B:C Ratio
	IP	FP		IP	IP	
0.8	1325	613	116.15	19875	13050	1.91

IP = Improved Practice, FP = Farmer's Practice, GMR = Gross Monetary Return

Implementation of TSP programme at Vizianagaram, Andhra Pradesh

Farmer practice	Demonstration plot
Direct sowing through broadcasting	Transplanting
Use of low yielding local varieties	Use of High Yielding Varieties like VR-708, VR-762, VR-847, VR-936(W)
No use of fertilizers or manures (Podu cultivation on hill slopes)	Use of organic fertilizers like Vermicompost and Neem cake
No weeding or hoeing	One or two intercultivations with in 45DAT by using hand operated implements

Yield and economics of technologies demonstrated: At Vizianagaram, the demonstrations in farmer's field in finger millet indicated that there was an increase of 32.27% increase in grain yield.

Average Yield and economics of TSP demonstrations during kharif 2017-18

Total: 20 ha area, 300kg seed was distributed

Area in ha	Average grain yield(kg/ha)		% Increase over FP
	Demo	FP	
20	2250	1701	32.28

Finger millet grain price: Rs.22/kg

Implementation of TSP programme at Mandya, Karnataka:

he demonstrations of finger millet improved varieties is planned in 7.50 ha in Summer 2018.

Popularisation of Small Millets in North Eastern Hilly regions

As of now, few varieties of millets are sporadically grown and consumed in parts of Assam and adjoining the North-Eastern states in limited quantity. Millets are grown basically by the tribal farmers and there is less knowledge about millets in the North-Eastern regions. But, it has been cultivated traditionally and consumed. The popularization of small millets in this region is important to uplift the economic level of the farmers.

Details of amount utilized for NEH programme for the year 2016-17 and 2017-18

S. No.	Center	Area and no. of demonstration	Items supplied	Fund allotted in lakhs	
				2016-17	2017-18
1.	Agartala (Tripura)	Training programme, FLDs in 50 ha. production of certified seed and breeder seed	De-husker Ragi Thresher	13.37	4.50
2.	Gossaigaon (Assam)	FLDs in 30ha in finger millet and 25ha in foxtail millet.	De-husker Ragi Thresher	8.87	3.40
3.	Namthang (Sikkim)	Supply of FYM organic bio fungicide and insecticide and nutrients in 20ha	De-husker Ragi Thresher	8.84	1.50
Total				31.08	9.40

A few varieties of millets are sporadically grown and consumed in some parts of Assam and adjoining North-Eastern states with limited utilization. Millets can bring value addition and adapt to climate change conditions when they come to the northeast, i. e. Nagaland, Arunachal Pradesh, Manipur, Mizoram, Meghalaya and Tripura. Relation between millets, shifting cultivation and biodiversity was brought out by community people. People recollected many varieties of millets that were traditionally grown. NE with its practice of *jhum* cultivation has traditionally promoted crop diversity and thus is well placed to send a message on food sovereignty on behalf of the country.

Popularisation of Small Millets in Assam

Millets are an upland area crop and millet based 'apong' (local wine) brewing is common in the northeast. In Assam the area, production and productivity is very negligible. But if we see the statistic from 2008 to 2015 it has been seen that the production and productivity is in slowly increasing trend. In Assam Millets are grown basically by the tribal farmers and siaothali farmers for local wine preparation and pithas (chapatti) and laddu. Even muslim community farmers are also giving emphasis on millet cultivation in "char" areas of Assam for their home consumption and commercial purpose. The grains are to be dehusked with 'dhenki', a locally used dehusking device.

In Assam and other north eastern states generally during *kharif* season farmers grow Finger Millet (*Eleusinecoracana*) which is commonly known as "Marubadhan." One month old seedling transplanted in the month of 1st week of September and harvested in the month of November. During *rabi* season farmers grows Foxtail Millet (*Setariaitalica*), which is commonly known as "Cawn". Seed are sown during Middle of January to middle of February (the best time is last week of January).

NEH programme at Regional Agricultural Research Station (RARS), Gossaigaon: The Lower Brahmaputra Valley Zone of Assam has been facing the ramification of chronic problems of low crop productivity, food & nutritional insecurity, population explosion, poverty and resource shrinkage and degradation. Being the largest zone of the state it enshrines wide array of agro-ecological situations, socio-economic conditions, ethnicity, flood and drought proneness, soil conditions and microclimate variations. The RARS, AAU, Gossaigaon is meant for conducting research for the Lower Brahmaputra Valley Zone of Assam comprising of 10 no of districts viz. Kamrup, Nalbari, Baksa, Barpeta, Chirang, Bongaigaon, Goalpara, Dhubri, Kokrajhar (Urban) and Kamrup (Rural).

Activities of the station for popularizing the Millets: Presently this station has giving emphasis on popularizing the millets cultivation among the farming community of the Central Brahmaputra Valley Zone (CBVZ) and Lower Brahmaputra Velly Zone (LBVZ) of state by taking Frontline demonstration with prominent local varieties of Finger millet and foxtail millet. For conducting FLD on finger and foxtail millet fund has been provided from Project Coordinator (Small Millets), AICRP on SM, Bengaluru. During the *rabi* 2016-17, FLD on Foxtail millet has been conducted in four district for popularizing the millets among the farming community in Assam by covering and areas about 10 ha.

Demonstration of Foxtail millet during Rabi2016-17				
No of farmers	Area	Demonstration yield (q/ha)	Farmers practice (q/ha)	Percent improvement
30	10.33	24.58	12.06	107.83
Demonstration of Finger millet during Kharif 2017				
35	10.2	27.02	15.52	74.50

Training Conducted during Rabi 2016-17 for Foxtail millet: 3 no's of Training on "Scientific cultivation of Foxtail Millet" conducted indifferent villages of Kokrajhar district of Assam by benefiting total 116 no's farmer.

Date of training	Training topic	Location	Total No. of trainees
02/04/2017	Scientific cultivation of Foxtail millet	Barzabil	37
25/08/2017	Scientific cultivation of foxtail millet	Maktaigaon	40
9/11/2017	Scientific cultivation of foxtail millet	Harapota	39

Training Conducted during Kharif 2017 for Finger millet: 3 no's of Training on "Scientific cultivation of Finger Millet" conducted indifferent villages of Kokrajhar district of Assam by benefiting total 122 no's farmers

Date of training	Training topic	Location	Total No. of trainees
14/11/2017	Scientific cultivation of fingermillet	Burichatam-2	41
15/11/2017	Scientific cultivation of fingermillet	Bhomrabil-2	43
22/12/2017	Scientific cultivation of fingermillet	Shimaltapu	38

Training Conducted during Rabi 2017-18 for Foxtail millet:: 1 no's of Training on "Scientific cultivation of Foxtail Millet" conducted at Karbi Anlong district of Assam by benefiting total 50 no's farmers

Total no of Beneficiary	District Covered	Total Area
100 no's	Kokrajhar, Hojai, Bongaigaon, Chirang, Karbi Anlong	20 ha

Prospect and Promotion of Millets in Rain-fed Eco system of Tripura

Millets are adapted to a wide range of ecological conditions often growing on skeletal soils that are less than 15 cm deep. It does not demand rich soils for their survival and growth. Hence, for the vast dry land area, they are a boon. Rice is the major staple food of our State Tripura & it is contributing 97 % of the total Food Grains. Due to Urbanization, farming lands are decreasing day by day. Therefore, to feed the entire population of the state, The Department of Agriculture, Government of Tripura is trying to utilize all the cultivable land by increasing cropping intensity & productivity with best natural resources & diversified farming. In our State, the tribal community are

cultivating Foxtail Millets as one of the component of their Mixed cropping System since very earlier era. In order to revive the demand of millets in Tripura as well as in India, there is need to enable to bring all the stakeholders in production to consumption system value chain on a common platform and link poor dry land farmers with market and the consumers at large.

Proposed Plan

Crop	2016-17			2021-22		
	Area (Ha)	Production (MT)	Yield (Kg / ha)	Area (Ha)	Production (MT)	Yield (Kg / ha)
Millets	1035	828	800	9724	14933	1536

Fund placed in favour of	Finger Millets Frontline Demonstration						Fund Allotted (excluding Seed cost)		Total Fund placed (Rs.)	
	Variety wise Area to be covered (In Ha.)			Quantity of Seed allotted (In KG)			Cost of Seed @Rs.80 / kg	Frontline Demonstration (Rs.)		Training (Rs.)
	KMR-301	KMR-340	Total	KMR-301	KMR-340	Total				
DDA, North Tripura	5.0	-	5.0	37.5	-	37.5	3000 /-	47,000/-	10,000/-	57,000/
DDA, Unakoti	4.33	0.66	5.0	32.5	5.0	37.5	3000 /-	47,000/	10,000/-	57,000/
DDA, Dhalai	5.0	-	5.0	37.5	-	37.5	3000 /-	47,000/	10,000/-	57,000/
DDA, howai	5.0	-	5.0	37.5	-	37.5	3000 /-	47,000/	10,000/-	57,000/
DDA, West Tripura	4.33	0.66	5.0	32.5	5.0	37.5	3000 /-	47,000/	10,000/-	57,000/
DDA, Sipahijala	5.0	-	5.0	37.5	-	37.5	3000 /-	47,000/	10,000/-	57,000/
DDA, Gomati	5.0	-	5.0	37.5	-	37.5	3000 /-	47,000/	10,000/-	57,000/
DDA, South Tripura	5.0	-	5.0	37.5	-	37.5	3000 /-	47,000/	10,000/-	57,000/
PC, KVK, Chebri	3.33	0.66	4.0	25.0	5.0	30.0	2400 /-	37600/-	8,000/-	45,600/-
PC, KVK, Dhalai	2.33	0.66	3.0	17.5	5.0	22.5	1800 /-	28,200/-	6,000/-	34,200/-
PC, KVK, Panisagar	2.33	0.66	3.0	17.5	5.0	22.5	1800 /-	28,200/-	6,000/-	34,200/-
Total	46.65	3.3	50.0	350	25	375.0	30,000/-	4,70,000/-	1,00,000	5,70,000

Foxtail Millets, Finger Millets, Sorghum may be the best suitable alternatives to Wheat flour from the point of view of nutritional value as well as the tremendous national gain especially in the ensuing decades of climate crisis/water scarcity. During this year Kharif-2017-18 under the Project on Small Millet (Finger Millet), of AICRP on Small Millet, ICAR has provided a fund for implementation at SARS, A.D.Nagar, as shown below:

- We have Procured 100 kg Breeder Seed of Finger Millets which has been produced in the farmers' field
- We have purchased a Laptop and a projector for imparting training to farmers as well as field functionaries under the item of fund "Need Based articles"

To popularise the cultivation of Finger Millet during ensuing Kharif season under rain fed condition of Tripura, 50.0 ha area has been identified and conducted front Line Demonstration as per Project Schedule mentioned below, in 8 districts and 3 KVKs across Tripura. Latest Varieties of Finger Millets were demonstrated in farmers field at different locations.

Out of total fund received, an amount of Rs. 5.7 Lakhs has been provided to growers and trainees for affecting conduction of Front Line Demonstration with Finger Millet and for the purpose of training & awareness programmes of farmers as per project schedule.

Cost of cultivation of cultivation of 1 Ha Finger Millets for FLD-2017-18		
S. No.	Items	Cost
1.	Cost of Seeds @ Rs. 80/- per kg for 7.5 kg seed /ha	Rs. 600.00
2.	Cost of FYM	Rs. 2000.00
3.	Cost of Chemical Fertilizers: @ 40:20:20	
	a) Urea- 90kg@Rs.5.736 / kg	Rs.518.40
	b) SSP 120 kg @Rs.10.95 / kg	Rs.1314.00
	c) MOP 30 kg @Rs. 10.78 / kg	Rs. 323.40
4.	Cash assistance for Land preparation, Sowing, Intercultural Operations , Harvesting, Post harvest operations etc	Rs. 4000.00
5.	Cost of PPC	Rs. 744.20
6.	Cost of Signboard	Rs. 500.00
	Total=	Rs. 10,000.00

S. No.	Activities	Approx. Amount involved (in Lakhs)	Remarks
1.	a) Training and Awareness Programme of Farmers	1.00	Area based training programme of farmers in batch of 25 farmers
2.	b) Training of field functionaries along with cost of literatures etc	0.50	for 20 nos field functionaries
3.	Conduction of Front Line Demonstrations	5.0	50 ha @Rs. 10,000.00 per ha inclusive of inputs
4.	Conduction of adaptive trial at State Agriculture Research Station	0.5	to identify suitable genotype
4.	Maintenance and Production of Breeder Seed and post harvest operations.	2.0	
5.	Production of certified Seed through Registered Growers Programme	1.00	
6.	Need based Articles	1.50	
	Total	11.5	

Performance of Finger millet varieties at Tripura during Kharif-2017-18

Crop	Variety	Parameters	Remarks
Finger Millet	KMR-301	Name of Farmer	Chandamani Reang
		Village	Purnarampara
		Area Covered	2.33 ha
		Colour	Red

		Max. Plant Height	119 cm
		Crop Duration	120-125 days
		Disease/Insect	Nil
		Yield/ ha	25 qt/ha
Finger Millet	KMR-340	Name of Farmer	Abul Hussein
		Village	Gandhitilla
		Area Covered	0.66 ha
		Colour	WHITE
		DOS	8/16/2017
		Max. Plant Height	117 cm
		Crop Duration	95-100 days
		Disease/Insect	Nil
		Yield/ ha	19 qt/ha

Popularisation of small millets in Namthung, Sikkim

At Krishi Vijnan Kendra, Namthung , Sikkim, the demonstration on finger millet were implemented. The beneficiaries include 33 farmers in Tokdanj, Lingmoo, South Sikkim amd 31 farmers in Kaw, South Sikkim. The results are under process.