

# Project for RKVY

## INSIMP

(Initiative for Nutritional Security through  
Intensive Millet Promotion)  
(Year- 2013-14)

Total cost: Rs 554.87

Submitted by  
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## Project at a glance

Serial no.	Components	Unit	Physical	Finanacial (Rs in lakh)
1.	Demonstration	ha	13300	331
2.	Minikits	No.	2862	4.01
3.	Seed production	Q.	3140	31.40
4.	TAs/PFs for PP	No.	47	22.56
5.	Training	No.	47	117.50
6.	PHT cluster with EP/PFs/NGOs	No.	10	30.00
7.	TAs for PHT clusters	No.	10	6.40
8.	Awarness program	No.	11	11.00
9.	State level program	No	1	1.00
<b>Total</b>				<b>554.87</b>



# INSIMP

## (Initiative for Nutritional Security through Intensive Millet Promotion)

### Introduction

There is only 7.53 lakh ha area under agriculture in Uttarakhand, which accounts to 13 % of the total reported area. The cropping intensity in Uttarakhand is 157.68%, which is much higher to the national cropping intensity of 129%.

#### Soils

Uttarakhand has various types of soil, all of which are susceptible to soil erosion. In the north, the soil ranges from gravel (debris from glaciers) to stiff clay. Brown forest soil—often shallow, gravelly, and rich in organic content—is found farther to the south. The Bhabar area is characterized by soils that are coarse-textured, sandy to gravelly, highly porous, and largely infertile. In the extreme southeastern part of the state, the Tarai soils are mostly rich, clayey loams, mixed to varying degrees with fine sand and humus; they are well suited to the cultivation of rice and sugarcane.

#### Irrigation

Most of the agriculture in the state is rain fed. The net irrigated area of the state stands at 340129 ha (2008-09). The ratio of net irrigated area to net sown area for the state is 45:100. At present, the sources of irrigation are canals, tube wells, wells etc. But due to undulated topography these sources are not available in all the parts of the state. Emphasis is being laid on alternate sources of irrigation to increase the net irrigated area, which in turn shall increase the cropping intensity of the state. These alternative sources can be rainwater harvesting, check dams, lift irrigation etc.

#### Land holdings

Hardly more than 3 percent of land holdings are above 4 ha in size and cover about 22 percent of the total cultivated area. As large numbers of holdings are under small and marginal categories, scale of economies cannot be availed of, and so the input cost per unit of output is higher. Therefore, it becomes a more difficult task to make agriculture a profitable occupation.



## **Crop production**

The growth of foodgrain production is quite variable in different areas. As a result, agriculture scenario presents a mixed picture. Productivity of district Udham Singh Nagar, Haridwar, Nainital (plain) and Dehradun (plain), is very high, on the other side, productivity of the hilly area is very low, although the valleys are fertile.

The State is producing cereals more than its requirement but there is deficiency of pulses and oilseeds. Wheat and rice are the main crops of the State as it covers 30.8 and 23.9 percent of the total cropped area respectively. Remaining area is covered by Mandua 10.9%, Sugarcane 9.1%, Sawan 5.4%, Maize 2.7%, pulses 2.5%, Oilseed 1.9% and others 12.8%.

## **Status of millets in Uttarakhand**

Uttarakhand has a distinct range of landforms varying from hills to plain. The climate and vegetation vary with the altitude of its location. Hilly area is characterized by gravel and light textured soils which do not retain water for long time and suits to small millets. No other crop withstands drought as efficiently as the small millets viz, finger millet, barnyard millet, foxtail millet and proso millets. This is the reason that these crops are being grown since time immemorial in hilly areas of Uttarakhand.

These crops are highly suitable marginal and degraded soil. Probably, Millets are known for their resilience, which is helpful in adjusting to diverse ecological situations. These unique quality millets have made them the choice crops for rainfed conditions of hill agriculture, where crops options are limited providing nutritionally rich staple food.

Though there are so many crops are cultivated in form of small millets in the state, but only finger millet and Barnyard millets covers the substantial area and constitutes about 2.00 lakh hectare of the net sown area. For last several years there is no remarkable change in area coverage of small millets. The reasons are-

1. Climate and soil suitability of a certain area.
2. Limited options of cropping pattern.
3. Low input requirement.
4. Easy agronomical practices.
5. Suitability of rainfed conditions.



For last several years Vivekanand Parvitya Krishi Anusandhansala Almora and the Agriculture University Pantnagar is engaged in developing seed and package of practices for millets of Uttarakhand hills. The popular notified varieties of small millets developed by these institutes are hereunder.

Finger millet (Ragi)	VL-146, VL-149, VL-315, VL-324, PRM-1, PRM-2
Barnyard millet (Sawan/Madira)	VL-172, VL-29, VL-207, PRJ-1
Amarantha (Ramdana)	VL-44

Under the schemes- MMA (CSS) and Local crop production programme (State level), efforts were made to increase the productivity of these crops as shown in the following Table.

Crop wise activities	Unit	Physical achievements			Assistance provided
		2007-08	2008-09	2009-10	
<b>Finger millet</b>					
Crop demonstration	Numbers	80	55	24	Free demos
Seed distribution	Quintal	10.46	16.27	21.40	Rs 800/qtl.
Farmers training	Numbers	-	-	8	On FFS pattern Rs 17000/training
<b>Barnyard millet</b>					
Seed distribution	Quintal	5.40	4.48	0.53	Rs 800/qtl.
<b>General Programme</b>					
Compost units	Numbers	5934	2071	78300	50% of the cost

Being paucity of the funds the programme was conducted in a limited area, which can not reflect wide impact on production.

Barnyard millet is sown as single crop, however, the finger millet has the option either to cultivate as single crop or in mix cropping system. Popular mix cropping systems are;

- Finger millet+ Local Soybean(Bhatt)
- Finger millet+ Amaranthus (Ramdana)
- Finger millet+ Urd (local pulse)
- Finger millet+ Horse gram (Gahat)



The trend of area coverage under small millets is shown in the following Table.

Year	Area under Finger millet (in ha)	Area under Barnyard millet (in ha)	Total area (in ha)
2000-01	127733	65829	193562
2001-02	131779	66907	198686
2002-03	127391	64958	192349
2003-04	126421	65151	191572
2004-05	131003	66241	197244
2005-06	124379	64698	189077
2006-07	135769	67854	203623
2007-08	128156	67159	195315
2008-09	134795	66090	200885
2009-10	131795	63636	195431
2010-11	128070	68056	196126
2011-12	125163	63002	188165
2012-13	128477	67580	196057

Uttarakhand has a large area (about 4 lakh ha) under barren and fallow land, out of this about 1 lakh ha can be brought under cultivation with least efforts. In first phase Agriculture Department of the State has derived a policy to cultivate about 10 thousand ha fallow land under pulse cultivation. Being favorable climatic condition of this area for small millets the area would also be brought for small millets with crop rotation of pulse-small millets and so on.

Small millets are grown in different agro-climatic situations and efforts have been made to enhance the productivity. Statistics reveals static slow progress and the sustainability against adverse climatic conditions in productivity. If there is any shortfall, that is due to failure in rainfall in sowing time.

Year	Productivity of Finger millet (in quintal/ha)	Productivity of Barnyard millet (in quintal/ha)
2000-01	12.71	11.98
2001-02	12.29	12.27
2002-03	10.17	9.43
2003-04	13.10	12.38
2004-05	12.85	12.61
2005-06	12.60	11.84
2006-07	13.72	12.71
2007-08	13.95	12.92
2008-09	14.32	11.31
2009-10	12.36	10.55
2010-11	13.31	12.94
2011-12	13.92	13.28
2012-13	13.65	13.59



## **Action plan of INSIMP for year 2013-14**

Under INSIMP plan two smaller millets ie Finger millets & Barnyard millets have taken. The area under finger millets & barnyard millets will be covered as 65000 & 68000ha respectively.

Five district ie Almora, Bageshur, Chamoli, Pauri & Tehri will be selected for finger millets. 13 production unit of 500ha of each will be made. Six district ie Almora, Raduraprayag, Chamoli, Pauri & Uttarkashi will be selected barnyard millets having 34 production unit of 200ha each. For each new farmers will be selected which are not selected in the previous year. The district wise details are given in annexure-I

### **Distribution of seed mini kits**

The seed mini kits of both the crops having 4kg seed per unit cost of Rs 200/ha will be distributed to the selected farmers. 2250 mini kits of Mandua & 612 mini kits of barnyard millets will be distributed. The total cost of seed mini kits distribution is proposed about Rs 5.73 lakhs.

### **Distribution of Demonstration Kit**

Demonstration kit of Rs 3000/ha for finger millets & Rs 2000/ha for barnyard millets comprising of micronutrients (zinc Sulphate , Borex & Sulpher ), fertilizers(Urea & NPK) bio-fertilizers (PSB/ Azotobacter/Micorrihza) , seed treatment bio-pesticide like trichoderma + Psudomonas are bavistin & weeside/ fungside will be distributed to the selected farmers in the selected production unit. Keeping in view the small holding the size of inputs will be delivered for 0.20ha area. The progamme will be conducted as per the intensity of area under organic or chemical mode. The details of demonstration kit composition is in annexure-II & the target of demonstration kit will be given in annexure-I

### **Seed production**

The seed production programme will be taken by state seed production agency ie Tarai seed & Development Corporation Uttarakhand as per guideline issued by GOI. For high yielding varieties seed production an incentive Rs 1000/Q of which 75% incentive would be passed on to the farmers & 25% to the seed production agency



towards their handling & processing charges. The varieties released during last five years would only qualify for the assistance. The details of seed production is given in annexure-I

### **TAs/PFs for production units**

To insure land holding of farmers during the demonstration & for effective implementation of the programme of Technical Assistant(TAs) will be kept for a period of 6month purely on contact bases @ Rs 8000/month for each production units. TAs will be kept by service provider. Alternatively if TAs are not available the progressive farmer will engaged at a monthly honorarium of Rs 1000 & mobility allowance of Rs 1000/month for a period of 6month. The targets of TAs/PFs will be given in annexure-I

### **Training**

For training in each unit 50 farmers / TAs/PFs will be selected for training as trainers. For this purpose an amount of Rs 2.50lakhs will be provided @ Rs 5000/trainee for five days. The training will be done in KVKs/SAU/ICAR institution. 13training programme for finger millets & 34 training programme for barnyard millets. The targets of Training is given in annexure-I

### **PHT Cluster with EP/PFs/NGOs**

A Complete post harvest processing cluster/ Unit at a total cost upto Rs 4lakhs/unit comprising of both primary processing (3-in-1 destoner cum grader cum cleaner + pearling machine). Costing upto Rs 2lakhs & secondary processing machines (Rava/Flaking machine popping roster finger millets) 10PHT clusters will be established 5through KVK & 5 through NGO's. Only primary processing unit is proposed to begin with. The detail of PHT Cluster with EP/PFs/NGO's is given in annexure-I

### **TA's for PHT Cluster**

To implement the programme smoothly 10 Technical Assistant(TAs) for PHT Cluster will be Kept by service provider for 8month @Rs8000/month The detail of TA's for PHT Cluster is given in annexure-I



## Awareness Campaign

Awareness campaign will organized to promote millet as food through:-

- Production of Vedeo-films & their broadcasting .
- Use of electronic media(including print media)
- National & State events, organization of mobile millet food courts millet food festivals millet melas.
- Inclusion of millets in mid day meals & other similar programmes for women & child development.
- Involve SAUs/NGOs in crating awareness generation activates.

### Summary of the Project

Sl. No.	Components	Crop	Unit	Physical targets	Financial Targets (lakh Rs)
1	Demonstrations	Finger Millet	ha	6500	195.00
		Barnyard Millet	ha	6800	136.00
		<b>Total</b>		<b>13300</b>	<b>331</b>
2	Minikits	Finger Millet	No.	2250	3.15
		Barnyard Millet	No.	612	0.86
		<b>Total</b>		<b>2862</b>	<b>4.01</b>
3	Seed production	Finger Millet	Q	1380	13.80
		Barnyard Millet	Q	1760	17.60
		<b>Total</b>	<b>Q</b>	<b>3140</b>	<b>31.40</b>
4	TAs/PFs for PP		No.	47	22.56
5	Training		No.	47	117.50
6	PHT in clusters with EP/PFs/NGOs/KVK		No.	10	30.00
7	TAs for clusters for 8 months @ Rs 8000/ month		No.	10	6.40
8	Awareness		No.	11	11.00
9	State level program		No	1	1.00
<b>Total</b>					<b>554.87</b>

Note :- Seed production programme will be implemented by T.D.C.



**Proposed target of INSIMP Programme (Finger millets and Barnyard millets)**

State- Uttarakhand

Sl. No.	District	Number of demonstrations				Capacity Building		Post Harvest Technology				Awareness activities		Seed Production		Total financial in lakh Rs								
		No. of units	Area (ha)	Number of Physical	Number of Financial	TA/ PFS Physical	Trainings Financial	PHT cluster Physical	TA for Physical	TA in Physical	Physical	Financial	Physical	Financial	Physical		Financial							
<b>A. District</b>																								
<b>Finger millet</b>																								
1	Almora	5	2500	500	0.70	2500	75.00	5	2.40	5	12.50	1	4.00	1	0.64	0	0.00	1	1.00	0	0.00	96.24		
2	Bageshwa	1	500	250	0.35	500	15.00	1	0.48	1	2.50	1	4.00	1	0.64	0	0.00	1	1.00	0	0.00	23.97		
3	Chamoli	1	500	250	0.35	500	15.00	1	0.48	1	2.50	1	4.00	1	0.64	0	0.00	1	1.00	0	0.00	23.97		
4	Pauri	4	2000	750	1.05	2000	60.00	4	1.92	4	10.00	1	4.00	1	0.64	0	0.00	1	1.00	0	0.00	78.61		
5	Tehri	2	1000	500	0.70	1000	30.00	2	0.96	2	5.00	1	4.00	1	0.64	0	0.00	1	1.00	0	0.00	42.30		
<b>Total</b>		<b>13</b>	<b>6500</b>	<b>2250</b>	<b>3.15</b>	<b>6500</b>	<b>195.00</b>	<b>13</b>	<b>6.24</b>	<b>13</b>	<b>32.50</b>	<b>5</b>	<b>20.00</b>	<b>5</b>	<b>3.20</b>	<b>0</b>	<b>0.00</b>	<b>5</b>	<b>5.00</b>	<b>1380</b>	<b>13.80</b>	<b>278.89</b>		
<b>Barnyard</b>																								
1	Almora	8	1600	125	0.18	1600	32.00	8	3.84	8	20.00	1	2.00	1	0.64	0	0.00	1	1.00	0	0.00	59.66		
2	Chamoli	2	400	100	0.14	400	8.00	2	0.96	2	5.00	1	2.00	1	0.64	0	0.00	1	1.00	0	0.00	17.74		
3	Pauri	10	2000	150	0.21	2000	40.00	10	4.80	10	25.00	1	2.00	1	0.64	0	0.00	1	1.00	0	0.00	73.65		
4	Rudrapray	2	400	62	0.09	400	8.00	2	0.96	2	5.00	1	2.00	1	0.64	0	0.00	1	1.00	0	0.00	17.69		
5	Tehri	10	2000	100	0.14	2000	40.00	10	4.80	10	25.00	0	0.00	0	0.00	0	0.00	1	1.00	0	0.00	70.94		
6	Uttarkashi	2	400	75	0.11	400	8.00	2	0.96	2	5.00	1	2.00	1	0.64	0	0.00	1	1.00	0	0.00	17.71		
<b>Total</b>		<b>34</b>	<b>6800</b>	<b>612</b>	<b>0.86</b>	<b>6800</b>	<b>136.00</b>	<b>34</b>	<b>16.32</b>	<b>34</b>	<b>85.00</b>	<b>5</b>	<b>10.00</b>	<b>5</b>	<b>3.20</b>	<b>0</b>	<b>0.00</b>	<b>6</b>	<b>6.00</b>	<b>1760</b>	<b>17.60</b>	<b>274.98</b>		
<b>Total Distt level</b>		<b>47</b>	<b>13300</b>	<b>2862</b>	<b>4.01</b>	<b>13300</b>	<b>331.00</b>	<b>47</b>	<b>22.6</b>	<b>47</b>	<b>117.50</b>	<b>10</b>	<b>30.00</b>	<b>10</b>	<b>6.40</b>	<b>0</b>	<b>0.00</b>	<b>11</b>	<b>11.00</b>	<b>3140</b>	<b>31.40</b>	<b>553.87</b>		
<b>B. State level programme</b>																								
<b>Grand Total</b>																							<b>1.00</b>	<b>554.87</b>