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ICAR-Indian Institute of Wheat and Barley Research, Karnal

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All India Coordinated Research Project on Wheat and Barley

**PROGRESS REPORT
2022-23**

SOCIAL SCIENCES

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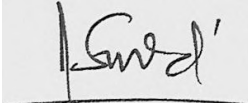
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In the end, it is stated that although utmost care has been taken to avoid any error in presentation of the results in this report, any error/omission is unintended and may please be brought to the notice of the undersigned.



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Frontline Demonstrations (2022-23)

India has achieved a record wheat production of 112.74 million tons during 2022-23 despite of erratic rainfall, water logging during grain filling stages in different parts of the country. Despite of such natural calamities, the climate resilient varieties being developed by the IIWBR and All India Coordinated wheat and barley improvement program helped in surpassing the target in 2022-23. The varieties being developed are not only climate resilient but most of them are bio-fortified which provide nutrients to the consumers, thereby tackling malnutrition.

The ICAR-IIWBR Karnal has done a remarkable work in developing improved varieties. At present, the varieties developed by the institute are recommended for 65 percent of the total wheat grown area in the country and occupy about 45 percent of the total area sown.

India faces a number of challenges including yield gap, awareness about bio-fortified varieties, availability of quality seed, adoption of latest production technologies, etc. These challenges are more prominent in barley compared to wheat. Availability of improved barley varieties (Husk less) for food is a major challenge for the scientists, as a large population is suffering from diabetes in urban as well as rural areas. Making barley a staple food is one of the major challenges apart from increasing the area under barley. Procurement policy is another challenge and private traders can play an important role in providing remunerative price to the wheat and barley growers.

During 2022-23, dissemination of wheat and barley technologies was carried out among farmers through 24 Krishi Vigyan Kendras and 13 All India Coordinated Wheat and Barley Improvement Centres. The demonstrations were conducted across different agro-climatic conditions in India on the basis of need-based interventions by identifying the location-specific constraints to bridge yield gap and popularize the technologies. Under Front line demonstrations, SCSP and TSP programs, critical inputs were provided to the farmers to demonstrate production potential of technologies. The neighboring farmers, extension workers and other stakeholders are invited at different stages of crop growth at the demonstration site to demonstrate the superiority of technologies being demonstrated. The scientists and extension personnel interact with the farmers to educate them about the latest technologies. The scientists issued need based advisories to the farmers during the crop season. The DA&FW and ICAR-IIWBR Karnal organized regular meetings to issue advisory to the farmers to tackle heat stress, erratic rainfall and water logging problems. The demonstration farmers are also advised to provide seed of improved varieties to the fellow farmers so that the whole village is saturated with the latest variety. Integrated communication approach was used to transfer the efficient technologies to farmers' fields.

The report highlights the outcome of barley FLDs, yield gain due to FLDs, wheat demonstrations under SCSP, costs and returns as well as constraints in barley production.

Barley Frontline Demonstrations (2022-23)

During the *rabi* crop season 2022-23, 140 hectares Barley Frontline Demonstrations (BFLDs) were allotted to 37 cooperating centers all over India in eight states/UT namely, Himachal Pradesh, Uttar Pradesh, Bihar, Jammu & Kashmir, Punjab, Haryana, Rajasthan and Madhya Pradesh. Out of these, 134.4 BFLDs were conducted by 36 centers, covering 141.72 hectares area of 382 farmers (Table1). Improved barley varieties with complete package of practices (irrigation management, nutrient management, weed control, seed treatment etc.) were demonstrated.

Table 1: Centre wise distribution of barley FLDs during *rabi* 2022-23 (in hectares)

S.No.	Zone and Centre	BFLDs Allotted	BFLDs Conducted	Area sown (Hectares)	No. of farmers / locations
Northern Hills Zone (NHZ)					
1.	CSKHPKV, HAREC, Bajaura, Kullu (HP)	4.8	4.8	4.8	12
2.	ICAR-IARI, RS, Amartara Cottage, Shimla (HP)	2	1.2	1.32	19
North Eastern Plains Zone (NEPZ)					
3.	NDUA&T, Kumarganj, Ayodhya (UP)	4	4	4	10
4.	KVK (IAS-BHU), Barkachha, Mirzapur (UP)	4	4	5.2*	13
5.	CSAUA&T, Kanpur (UP)	4	4	4	10
6.	BHU, Varanasi (UP)	4.8			
7.	KVK, Gorakhpur-2, (Guru Gorakshnath Seva Sansthan), Chauk Mafi (Peppeganj), Jangal Kaudiya, Gorakhpur (UP)	4	4	4	10
8.	KVK (NDUA&T) Basti, Katiya, Banjariaya Farm, Basti (UP)	4	4	4	15
9.	KVK (Dr. RPCAU, Pusa, Samastipur), Begusarai (Bihar)	2	2	2	5
10.	KVK (BAU, Bhagalpur), Agwanpur, Barh, Patna (Bihar)	2	2	2	5
11.	KVK, Samastipur-1 (Dr. RPCAU, Pusa, Samastipur), Birauli, Samastipur (Bihar)	2	2	2	5
12.	KVK, Samastipur-2 (Dr. RPCAU, Pusa, Samastipur), Lada, Singhia, Samastipur (Bihar)	2	2	2	5
North Western Plains Zone (NWPZ)					
13.	KVK (SKUAST-Jammu), Rajhani, Kathua (J&K)	4	4	4	17
14.	PAU, Ludhiana (Punjab)	3.2	3.2	3.2	8
15.	KVK, (PAU), Khokhar Khurd, Mansa (Punjab)	4	4	5.2*	13
16.	KVK (PAU), Kheri, Patran Road, Sangrur (Punjab)	4	4	5.2*	13
17.	KVK (PAU), Goneana, Muksar (Punjab)	4	4	4	10
18.	KVK (PAU), Dabwali Road, Near Khedi Bhawan, Bathinda (Punjab)	4	4	5.2*	13
19.	CCSHAU, Hisar (Haryana)	4	4	4	10
20.	KVK (BB Ashram), Rampura, Rewari (Haryana)	4	4	4	8
21.	KVK (CCSHAU), Bhiwani (Haryana)	4	4	5.2*	13
22.	ICAR-IIWBR, Karnal (Haryana)	2.8	2.8	2.8	7
23.	RARI (SKNAU), Durgapura, Jaipur (Rajasthan)	4	4	4	10
24.	KVK (Pragati Trust), Chomu, Jaipur (Rajasthan)	3.2	3.2	3.2	10
25.	KVK (AU-Kota), Akorashi, Dhindora, Hindauncity, Karauli (Rajasthan)	4	4	5.2*	13
26.	KVK, Alwar-1 (SKNAU-Jobner), Navgaon, District-Alwar (Rajasthan)	2	2	2	5
27.	ACES, Amity University Uttar Pradesh, Noida (UP)	4	4	4	10
28.	KVK (SVPUA&T, Modipuram, Meerut), RRS, Nagina, Bijnor (UP)	2	2	2	5
Central Zone (CZ)					
29.	RCOA (MPUA&T), Udaipur (Rajasthan)	4.8	4.8	4.8	12
30.	KVK (MPUA&T), Dhoinda, Rajasmand (Rajasthan)	4.8	4.8	4.8	12
31.	KVK (JNKVV), Kuthulia Farm, Rewa (MP)	4.8	4.8	4.8	12
32.	KVK (JNKVV), Purushottampur, Panna (MP)	4.8	4.8	4.8	12
33.	KVK (JNKVV), Tikamgarh (MP)	4.8	4.8	4.8	12
34.	KVK (RVSKVV), Biaora, Kothi Bagh, Rajgarh (MP)	4.8	4.8	4.8	12
35.	COA (JNKVV), Ganj Basoda, Vidisha (MP)	4.8	4.8	4.8	12
36.	KVK (BUA&T-Banda), Lalitpur (UP)	4.8	4.8	4.8	12
37.	KVK (BUA&T-Banda), Bharari, Bhojla, Jhansi (UP)	4.8	4.8	4.8	12
TOTAL		140	134.4	141.72*	382

* Area covered more than allotted which is restricted to area equal to allotted FLDs.

Table 2: State wise distribution of barley FLDs during rabi 2022-23 (in hectares)

S.No.	State/UT	BFLDs Allotted	BFLDs Conducted	Area Sown (hectares)	No. of Farmers/ locations
1.	HP	6.8	6.0	6.12	31
2.	UP	40.4	35.6	36.80	97
3.	Bihar	8.0	8.0	8.00	20
4.	J&K	4.0	4.0	4.00	17
5.	Punjab	19.2	19.2	22.80	57
6.	Haryana	14.8	14.8	16.00	38
7.	Rajasthan	22.8	22.8	24.00	62
8.	MP	24.0	24.0	24.00	60
Total		140	134.4	141.72*	382

* Area covered more than allotted which is restricted to area equal to allotted FLDs.

Table 3: Zone wise distribution of barley FLDs during rabi 2022-23 (in hectares)

Zone	BFLDs Allotted	BFLDs Conducted	Area sown (hectares)	No. of farmers/ locations
NHZ	6.8	6.0	6.12	31
NEPZ	32.8	28.0	29.20	78
NWPZ	57.2	57.2	63.20	165
CZ	43.2	43.2	43.20	108
Total	140	134.4	141.72*	382

* Area covered more than allotted which is restricted to area equal to allotted FLDs.

Table 4: State wise yield gain during rabi 2022-23

State	BFLDs yield (q/ha)	Check yield (q/ha)	Gain (%)
HP	27.95	19.98	39.92***
Eastern UP	35.90	22.50	59.56***
Central UP	33.58	24.90	34.84***
Western UP	58.43	52.10	12.14***
All UP	37.68	26.30	43.25***
Bihar	42.18	36.40	15.87*
UT of J&K	30.70	22.30	37.67***
Punjab	47.58	40.38	17.83***
Haryana	42.20	38.63	09.26*
Rajasthan (NWPZ)	60.03	50.15	19.69***
Rajasthan (CZ)	42.20	36.10	16.90***
All Rajasthan	53.13	44.70	18.85***
MP	39.75	26.93	47.63***

*** Significant at 1 per cent level, ** Significant at 5 per cent level

The highest gain in barley yield was recorded in Eastern UP (59.56%) followed by MP (47.63%), All UP (43.25%), HP (39.92%), UT of J&K (37.67%), Central UP (34.84%) and Rajasthan NWPZ (19.69%). The lowest gain in yield was reported in Haryana (9.26%) (Table 4).

Table 5: Zone wise productivity over regional productivity during *rabi* 2022-23

Zone	BFLDs yield (q/ha)	Regional mean yield (q/ha)	Gain (%)
NHZ	27.95	18.93	47.69***
NEPZ	37.63	25.33	48.57***
NWPZ	47.85	39.68	20.60***
CZ	38.75	27.00	43.52***

*** Significant at 1 per cent level ** Significant at 5 per cent level, * Significant at 10 per cent level, NS is Non-significant

The yield gain due to improved varieties over regional mean yield was highest in NEPZ (48.57%) followed by NHZ (47.69%), CZ (43.52%) and NWPZ (20.60%) (Table 5).

Table 6: Zone wise productivity over check during *rabi* 2022-23

Zone	BFLDs yield (q/ha)	Check mean yield (q/ha)	Gain (%)
NHZ	27.95	19.98	39.92***
NEPZ	37.63	25.65	46.69***
NWPZ	47.85	41.10	16.42***
CZ	38.75	28.43	36.32***

*** Significant at 1 per cent level, ** Significant at 5 per cent level, * Significant at 10 per cent level, NS is Non-significant

The yield gain due to improved varieties over check was highest in NEPZ (46.69%) followed by NHZ (39.92%), CZ (36.32%) and NWPZ (16.42%) (Table 6). Therefore, efforts should be made to increase barley yield in the NEPZ, CZ and NHZ by promoting recent barley production technologies in collaboration with the state department of agriculture.

Centre wise data analysis revealed that the yield gain under barley FLD was highest at center Rewa (142.40%) followed by Lalitpur (50.58%) in CZ; Mirzapur (115.29%) in NEPZ; Bajaura (44.75%) in NHZ and Mansa (38.93%) followed by Kathua (37.67%) in NWPZ. The yield gain was lowest at Muktsar (05.02%) in NWPZ (Table 7).

Table 7: Centre wise performance of improved barley varieties during *rabi* 2022-23

Zone and Centre	BFLDs yield (q/ha)	Check yield (q/ha)	Gain (%)
NHZ			
Bajaura	28.95	20.00	44.75***
Shimla	23.93	19.83	20.68 ^{NS}
NEPZ			
Ayodhya	34.88	26.25	32.86***
Mirzapur	42.95	19.95	115.29***
Kanpur	26.75	17.75	50.70***
Gorakhpur	42.75	32.68	30.83***
Basti	31.98	18.58	72.14***
Begusarai	41.53	35.13	18.22**
Barh Patna	56.33	46.65	20.74***
Birauli Samastipur-1	36.18		
Lada Samatipur-2	29.05	23.30	24.68***

NWPZ			
Kathua	30.70	22.30	37.67***
Ludhiana	55.33	47.50	16.47*
Mansa	49.43	35.58	38.93***
Sangrur	44.53	38.28	16.33***
Muktsar	48.30	46.00	5.00**
Bathinda	43.45	38.55	12.71**
Hisar	45.83	42.43	8.01 NS
Rewari	50.83	45.00	12.94***
Bhiwani	30.88	29.33	5.29**
Karnal	45.35	40.90	10.88***
Durgapura, Jaipur	60.25	50.25	19.90***
Chomu, Jaipur	55.10	46.23	19.20***
Karauli	66.78	55.88	19.51***
Alwar-1	51.80	42.95	20.61***
Noida	58.43	52.10	12.14***
Nagina Bijnor	39.00		
CZ			
Udaipur	44.28	38.88	13.89***
Rajasmand	40.15	33.33	20.48***
Rewa	45.45	18.75	142.40***
Panna	31.15	23.85	30.61***
Tikamgarh	28.88	21.55	33.99***
Rajgarh	47.58	36.18	31.51***
Vidisha	46.90	35.75	31.19***
Lalitpur	35.58	23.63	50.58***
Jhansi	31.10	26.45	17.58***

*** Significant at 1 per cent level, ** Significant at 5 per cent level, * Significant at 10 per cent level, NS is Non-significant

Table 8: Variety wise performance of improved barley varieties during rabi 2022-23

Zone and Centre	Improved variety	Average yield (q/ha)	Check variety	Average yield (q/ha)	Yield gain over check (%)
NHZ					
Bajaura	HBL 713	28.75	Local	19.18	49.93***
Bajaura	HBL 804	29.18	Local	20.83	40.10***
Shimla	BHS 400	25.75	BHS 352	19.88	29.56 NS
Shimla	BHS 380	20.25	BHS 352	19.75	2.53 NS
NEPZ					
Ayodhya	DWRB 137	32.70	Azad	25.83	26.62***
Ayodhya	DWRB 137	33.75	Local	20.00	68.75 NS
Ayodhya	DWRB 137	34.70	Narendra Jau -2	30.63	13.31 NS
Ayodhya	RD 2907	37.50	Local	20.95	79.00**
Ayodhya	RD 2907	36.25	Narendra Jau -2	30.95	17.12 NS
Mirzapur	DWRB 137	43.33	Amber K71	20.58	110.57***
Mirzapur	RD 2907	42.50	Amber K71	19.23	121.07***
Kanpur	RD 2907	21.50	Azad	16.50	30.30**
Kanpur	DWRB 137	32.00	K 508	19.00	68.42***
Gorakhpur	DWRB 137	42.80	RD 2660	33.05	29.50***
Gorakhpur	RD 2907	42.70	RD 2660	32.30	32.20***
Basti	RD 2907	34.13	Local	18.08	88.80***

Zone and Centre	Improved variety	Average yield (q/ha)	Check variety	Average yield (q/ha)	Yield gain over check (%)
Basti	DWRB 137	30.68	Narendra Jau -2	18.48	66.04***
Basti	RD 2907	32.13	Narendra Jau -2	19.25	66.88***
Begusarai	DWRB 137	41.53	BR 32	35.13	18.22**
Barh Patna	DWRB 137	56.33	Local	46.65	20.74***
Birauli Samastipur-1	RD 2907	36.18			
Lada Samstipur-2	DWRB 137	29.05	Local	23.30	24.68***
NWPZ					
Kathua	DWRB 137	31.95	Local	21.93	45.72***
Kathua	RD 2907	29.33	Local	22.73	29.04***
Ludhiana	DWRB 137	55.33	PL 807	47.50	16.47*
Mansa	DWRB 137	48.33	PL 426	35.20	37.29***
Mansa	DWRB 182	62.50	PL 426	40.00	56.25 ^{NS}
Sangrur	DWRB 137	48.10	PL 807	45.78	5.08*
Sangrur	DWRB 182	45.00	PL 807	37.50	20.00 ^{NS}
Muktsar	DWRB 137	46.25	PL 426	43.75	5.71 ^{NS}
Muktsar	DWRB 137	49.60	DWRB 123	47.40	4.64*
Muktsar	DWRB 182	50.00	DWRB 123	48.00	4.17 ^{NS}
Bathinda	DWRB 137	42.70	Local	38.45	11.05**
Bathinda	DWRB 182	52.50	Local	40.00	31.25 ^{NS}
Hisar	DWRB 137	45.93	BH 946	42.93	6.99 ^{NS}
Hisar	DWRB 182	45.00	BH 946	38.00	18.42 ^{NS}
Rewari	DWRB 137	50.83	BH 393	45.00	12.94***
Bhiwani	DWRB 137	30.50	BH 393	29.28	4.18**
Bhiwani	DWRB 182	35.00	BH 393	30.00	16.67 ^{NS}
Karnal	DWRB 137	45.43	BH 393	41.05	10.66***
Karnal	DWRB 182	45.00	BH 393	40.00	12.50 ^{NS}
Durgapura	DWRB 137	57.93	RD 2052	49.58	16.84***
Durgapura	RD 2907	63.75	RD 2052	51.25	24.39***
Chomu	DWRB 137	53.83	RD 2035	45.28	18.88***
Chomu	RD 2907	55.75	RD 2035	45.30	23.07*
Chomu	RD 2907	56.83	RD 2052	48.43	17.35***
Karauli	DWRB 137	68.50	RD 2035	56.10	22.10***
Karauli	RD 2907	65.70	RD 2035	55.73	17.90***
Alwar	DWRB 137	50.43	RD 2552	43.00	17.27***
Alwar	RD 2907	53.88	RD 2552	42.88	25.66*
Noida	DWRB 137	57.83	BH 393	51.88	11.47*
Noida	DWRB 137	59.33	Local	52.45	13.11**
Nagina Bijnor	DWRB 137	38.88			
CZ					
Udaipur	DWRB 137	44.28	RD 2552	38.88	13.89***
Rajsamand	DWRB 137	40.75	Local	32.13	26.85*
Rajsamand	DWRB 137	40.78	RD 2660	33.70	20.99***
Rajsamand	DWRB 137	37.00	RD 2786	33.00	12.12 ^{NS}
Rewa	DWRB 137	45.45	JB 58	18.75	142.40***
Panna	DWRB 137	30.95	JB 58	24.08	28.56***
Panna	DWRB 137	31.25	Local	23.75	31.58***
Tikamgarh	DWRB 137	28.88	JB 58	21.55	33.99***
Rajgarh	DWRB 137	47.58	JB 58	36.18	31.51***
Vidisha	DWRB 137	46.90	Local	35.75	31.19***
Lalitpur	DWRB 137	35.58	Munda	23.63	50.58***
Jhansi	DWRB 137	31.10	Munda	26.45	17.58***

*** Significant at 1 per cent level ** Significant at 5 per cent level, * Significant at 10 per cent level, NS is Non-significant

The varieties HBL 804 (29.18 q/ha) at Bajaura centre in NHZ; DWRB 137 (56.33 q/ha) at Barh Patna in NEPZ, RD 2907 (63.75 q/ha) at Durgapura Jaipur in NWPZ and DWRB 137 (47.58 q/ha) at Rajgarh in CZ were the highest average yielding (Table 8). It is evident from Table 8 that recent varieties outperformed old/check varieties at all the locations. The yield gain due to varietal intervention ranged from 4.18 % at Bhiwani center in Haryana to 142.40% at Rewa center in MP.

Table 9 : Yield potential of barley varieties in different zones during *rabi* 2022-23

Zone	Centre	Variety	Yield(q/ha)
NHZ	Bajaura Kullu	HBL 713	35.00
NEPZ	Barh Patna	DWRB 137	58.50
NWPZ	Karauli	DWRB 137	69.50
CZ	Rajgarh	DWRB 137	51.00

It is evident from Table 9 that varieties HBL 713 (35.00 q/ha), DWRB 137 (58.50 q/ha), DWRB 137 (69.50 q/ha) and DWRB 137 (51.00 q/ha) performed better than other varieties at Bajaura Kullu, Barh Patna, Karauli and Rajgarh centres in the NHZ, NEPZ, NWPZ and CZ, respectively.

Table 10: Barley varieties grown in different zones during *rabi* 2022-23

Zone	Improved varieties	Check varieties	Popular varieties in the region
NHZ	HBL 713, HBL 804, BHS 400, BHS 380	BHS 352, Local	Sonu, Dolma, HBL 276, Gopi (HBL 316), Local
NEPZ	DWRB 137, RD 2907	Narendra Jau-2, K 125 (Azad), Local, K 508, Amber (K 71), RD 2660, BR 32	Narendra Jau-2, Lakhan, Jyoti, Jagriti, Amber (K 71), K 125 (Azad), K 409, K 508, K 551, RD 2660, RD 2794, Local, Manjula, Prakhar, Narendra Barley-4, DL 36, BR 32
NWPZ	DWRB 137, DWRB 182, RD 2907	PL 807, PL 426, BH 393, BH 946, RD 2035, RD 2052, RD 2552, DWRB 123, Local	RD 2907, PL 807, PL 426, PL 891, DWRB 123, DWRUB 52, BH 393, BH 946, RD 2035, RD 2052, RD 2552, RD 2660, RD 2715, RD 2786, RD 2794, RD 2899, Local
CZ	DWRB 137	RD 2552, RD 2660, RD 2786, JB 58, Munda, Local	RD 2035, RD 2552, RD 2660, RD 2715, RD 2786, RD 2899, JB 58, Munda, Local

Barley FLDs conducted at ICAR-IIWBR, Karnal centre

During the year 2022-23, Barley FLDs were conducted by ICAR-IIWBR, Karnal and ICAR-IIWBR, Seed and Research Farm, Hisar using improved barley variety DWRB 137 and DWRB 182, covering 5 acres area of five farmers in villages Pabra in district Hisar; and 2 acres area of two farmers in village Sheikhpura in district Yamunanagar of Haryana state. The demonstrations were conducted with complete package of practices.

Constraints analysis in different barley producing zones of India (2022-23)

Variation in yield levels among different states, farmers and farms leads to yield gap in different states and different zones. There are many reasons of this yield gap which need to be addressed to increase area, production and productivity of barley across different zones. Through constraint analysis an effort has been made to identify the factors impeding barley production in different parts of the country. For this an inventory of constraints was developed after thorough review of literature and taking experts' opinion. Data were collected on a well designed pre-structured questionnaire mailed to all the cooperating centres conducting barley FLDs. The responses were collected on a three point continuum *viz.*; most serious, serious and not serious. The scores were assigned as 2, 1 and 0 for the most serious, serious and not serious constraints, respectively. Based on the total score, the level of seriousness for each constraint has been calculated and final ranks have been assigned.

Northern Hills Zone (NHZ)

In NHZ, untimely rain, high cost of inputs, decline in water table, small land holdings, yellow rust, *Phalaris minor*, poor information delivery by state extension machinery, poor participation in exposure visits, poor participation in kisan melas/field days/kisan goshtis/ trainings, lack of extension literature, lack of training facility and low price of barley grains were perceived as major constraints (Table 11).

Table 11: Constraints in NHZ (n=15)

Constraints	Score	Rank
Untimely rain	27	I
High cost of inputs	24	II
Decline in water table	24	II
Small land holding	18	III
Yellow rust	15	IV
<i>Phalaris minor</i> (Mandusi)	15	IV
Poor information delivery by state extension machinery	15	IV
Poor participation in exposure visits arranged by various departments	15	IV
Poor participation in kisanmelas/field days/kisangosthi/training	15	IV
Lack of extension literature	15	IV
Lack of training facility	15	IV
Low price of grain	15	IV

North Eastern Plains Zone (NEPZ)

In this zone, untimely rain, high cost of inputs, decline in water table, non-availability of labour, sudden temperature rise in the month of February, poor participation in exposure visits arranged by various departments, low price of grain, infestation of barley fields with *Phalaris minor* and poor information delivery by state extension machinery were identified as major constraints in NEPZ. These constraints need to be addressed immediately to make barley cultivation easier and profitable. Marketing of barley grains

ensuring better price has been a concern for area expansion under barley in NEPZ. There is a need to promote contract farming in eastern states too for popularization of barley as nutri-cereal. (Table 12).

Table 12: Constraints in NEPZ (n=80)

Constraints	Score	Rank
Untimely rain	136	I
High cost of inputs	120	II
Decline in water table	119	III
Non availability of labour	93	IV
Sudden temperature rise in February	85	V
Poor participation in exposure visits arranged by various departments	82	VI
Low price of grain	82	VI
<i>Phalaris minor</i> (Mandusi)	80	VII
Poor information delivery by state extension machinery	75	VIII

North Western Plains Zone (NWPZ)

NWPZ is the most important zone for the production of barley in the country. Farmers of this zone perceived untimely rain, lodging, high cost of inputs, *Phalaris minor*, non-availability of labour, low price of barley grains, small land holding, decline in water table, poor participation in exposure visits arranged by various departments and poor quality herbicides/pesticides were reported as major production constraints. In NWPZ, barley is grown for industrial purpose under contract farming too. Hence, there is a need to address these constraints for the benefit of the farmers and area expansion under barley crop (Table 13). In recent years many new varieties have been released for malt purpose in NWPZ. These varieties need to be promoted through contract farming for more yield and returns.

Table 13: Constraints in NWPZ (n=165)

Constraints	Score	Rank
Untimely rain	422	I
Lodging	416	II
High cost of inputs	366	III
<i>Phalaris minor</i> (Mandusi)	297	IV
Non availability of labour	256	V
Low price of grain	235	VI
Small land holdings	220	VII
Decline in water table	215	VIII
Poor participation in exposure visits arranged by various departments	213	IX
Poor quality herbicides/pesticides	119	X

Central Zone (CZ)

In CZ, decline in water table, high cost of inputs, untimely rain, non-availability of labour, poor information delivery by state extension machinery, poor participation in exposure visits arranged by various departments, low price of barley grains, *Phalaris minor*,

lodging, poor quality herbicide/pesticides and resistance against herbicide were the major production constraints of barley crop (Table 14).

Table 14: Constraints in CZ (n=109)

Constraints	Score	Rank
Decline in water table	178	I
High cost of inputs	168	II
Untimely rain	166	III
Non availability of labour	133	IV
Poor information delivery by state extension machinery	94	V
Poor participation in exposure visits arranged by various departments	94	V
Low price of grain	94	V
<i>Phalaris minor</i> (Mandusi)	84	VI
Lodging	84	VI
Poor quality herbicide/pesticides	84	VI
Resistance against herbicide	84	VI

Major constraints impeding barley production in the country

Overall analysis of constraints in different zones clearly indicated that Untimely rain, lodging, high cost of inputs, decline in water table, *Phalaris minor*, low price of barley grains, small land holding, non-availability of labour, poor participation in exposure visits arranged by various departments and poor information delivery by state extension machinery were the major constraints affecting barley production and productivity in the country (Table 16). Farmers need to be educated and upskilled on recent barley production technologies, complete package of practices and soil health management. There is a need of government intervention to ensure supply of quality seed and inputs to the farmers. Farmers need to be updated on impact of climate change on barley cultivation and adaptation strategies for mitigation. To ensure better price, farmers have to go for quality barley production. There is a need to register barley growers on e-NAM platform for selling of barley.

Table 15: Major constraints impeding barley production in the country (n=369)

Constraints	Score	Rank
Untimely rain	582	I
Lodging	559	II
High cost of inputs	513	III
Decline in water table	402	IV
<i>Phalaris minor</i> (Mandusi)	337	V
Low price of grain	332	VI
Small land holding	310	VII
Non availability of labour	310	VIII
Poor participation in exposure visits arranged by various departments	295	IX
Poor information delivery by state extension machinery	286	X

Farmers' perception about barley FLDs

- The farmers of the same village and nearby villages were highly satisfied with the performance of demonstrated varieties and ready to adopt them in the coming crop season.
- All the farmers were highly satisfied with the yield advantage of demonstrated varieties and with their increased income due to higher yield.
- Neighbouring farmers booked seed from FLD farmers for next crop season.
- The FLD farmers were highly satisfied with performance of demonstrated barley varieties and production technologies. All the improved varieties outperformed check varieties on all locations.

Monitoring of Barley Frontline Demonstrations (FLDs) and SCSP Wheat Demonstrations during rabi 2022-23

The ICAR-IIWBR team accompanied by the experts from the Ministry of Agriculture & Farmers Welfare and the concerned centres monitored the following barley FLDs and SCSP Wheat Demonstrations centres during the *rabi* crop season 2022-23.

Table 16: Centers monitored by different monitoring teams

Team Leader	Centres Monitored	Dates of Monitoring
Dr. Randhir Singh	Durgapura-Jaipur, Chomu-Jaipur, Alwar	20-23 February, 2023
Dr. Satyavir Singh & Dr. Anil Khippal	Jalandhar, Kapurthala	12-13 January, 2023
Dr. Satyavir Singh	Bathinda	12 April, 2023

Barley Frontline Demonstrations (FLDs) Monitoring Report of Durgapura-Jaipur, Chomu-Jaipur and Alwar centers

Monitoring Center: RARI (SKNAU), Durgapura, Jaipur (Rajasthan)

Monitoring Date: 21.02.2023

Monitoring Team

Dr. Randhir Singh, PI (Social Sciences), ICAR-IIWBR, Karnal, Haryana

Dr. Ved Prakash Yadav, Professor & Incharge AICRP on Wheat & Barley, RARI (SKNAU), Durgapura, Jaipur (Rajasthan)

Dr. S.S. Rajput, Assistant Barley Breeder, RARI (SKNAU), Durgapura, Jaipur (Rajasthan)

The Team monitored barley FLDs conducted by RARI, Durgapura, Jaipur at farmers field namely Ram Prasad Yadav, Bardri Prasad Yadav, Rajendra Singh Palawat and Smt. Rama Palawat. The barley varieties RD 2907 and DWRB 137 were demonstrated.

Monitoring Center: KVK, Chomu, Jaipur (Rajasthan)

Monitoring Date: 21.02.2023

Monitoring Team

Dr. Randhir Singh, PI (Social Sciences), ICAR-IIWBR, Karnal, Haryana

Dr. B.L. Yadav, SMS (Agronomy), KVK, Chomu, Jaipur (Rajasthan)

The Team monitored barley FLDs conducted by KVK, Chomu, Jaipur at farmers field namely Jagdish Prasad Sharma, Bhagwan Sahay Sharma, Shankar Lal Sharma, Rud Mal Sharma and Prabhu Dyal Sharma. The barley varieties RD 2907 and DWRB 137 were demonstrated.

Monitoring Center: KVK, Navgaon, Alwar-1 (Rajasthan)

Monitoring Date: 22.02.2023

Monitoring Team

Dr. Randhir Singh, PI (Social Sciences), ICAR-IIWBR, Karnal, Haryana
Dr. S.C. Yadav, Sr. Scientist & Head, KVK, Navgaon, Alwar (Rajasthan)
Dr. H.R. Mali, SMS (Agronomy), KVK, Navgaon, Alwar (Rajasthan)
Dr. Vikas Arya, SMS (Animal Science), KVK, Navgaon, Alwar (Rajasthan)

The Team monitored barley FLDs conducted by KVK, Navgaon, Alwar at farmers fields namely Babli, Amar Singh, Prem Singh, Rajesh Yadav, and Rakesh Yadav. The barley varieties RD 2907 and DWRB 137 were demonstrated. The following observations were made during the overall monitoring and discussion with the FLD beneficiaries.

The farmers were provided good quality seed. Some of the fields were having display boards and near the road. All the fields were line sown. The crop condition was very good. There were no incidence of disease and insects. There were some incidences of frost damage in one farmers field. The farmers were very happy with the performance of the crop. They expected that the DWRB 137 to be good for fodder also as it doesn't have awn problem. The cooperating centres were also expecting good yield.

SCSP Wheat Demonstrations Monitoring Report of Jalandhar and Kapurthala centers

Monitoring Center: KVK, Noormahal, Jalandhar (Punjab)

Monitoring Date: 12.01.2023

Monitoring Team

Dr. Satyavir Singh, Pr. Scientist (Agricultural Extension), ICAR-IIWBR, Karnal, Haryana
Dr. Anil Khippal, Pr. Scientist (Agronomy), ICAR-IIWBR, Karnal, Haryana
Dr. Rupinder Chandel, AP (FMP), KVK, Noormahal, Jalandhar (Punjab)
Dr. Baljit Kaur, SMS (Agro-Meteorology), KVK, Noormahal, Jalandhar (Punjab)
Dr. Opinder Singh Sandhu, AP (Soil Science), KVK, Noormahal, Jalandhar (Punjab)

The Team monitored Wheat Demonstrations conducted in the fields of Sh. Surjeet Singh and Sh. Dharampal Singh at village Dalla, district Jalandhar (Punjab), by KVK, Nurmahal, Jalandhar under SCSP Programme.

Monitoring Center: KVK, Kapurthala (Punjab)

Monitoring Date: 12.01.2023

Monitoring Team

Dr. Satyavir Singh, Pr. Scientist (Agricultural Extension), ICAR-IIWBR, Karnal, Haryana
Dr. Anil Khippal, Pr. Scientist (Agronomy), ICAR-IIWBR, Karnal, Haryana
Dr. Harinder Singh, Associate Director (Training), KVK, Kapurthala (Punjab)
Dr. Amit Salaria, AP (Agronomy), KVK, Kapurthala (Punjab)

The Team monitored Wheat Demonstrations conducted in the fields of Sh. Gurmej Singh, village Kokalpur and Sh. Lakshman Dass, village Jhal Thikriwal, district Kapurthala (Punjab), by KVK,

Kapurthala under SCSP Programme. The following observations were made during the overall monitoring and discussion with the SCSP Wheat Demonstrations beneficiaries.

The weeds infestation in SCSP Wheat Demonstrations was negligible. The Wheat Demonstrations crop was free from diseases. The demonstrated new improved wheat variety DBW 222 has good tillering. The neighbour farmers of the SCSP wheat demonstrations were impressed by the performance of new wheat variety. Farmers expected more yield from the new variety than the old varieties. Wheat Demonstration is a good source of Transfer of Technology. The farmers appreciated the work done by Wheat Demonstrations co-operators.

Barley Frontline Demonstrations (FLDs) Monitoring Report of Bathinda center

Monitoring Center: KVK, Bathinda (Punjab)

Monitoring Date: 12.04.2023

Monitoring Team

Dr. Satyavir Singh, Pr. Scientist (Agricultural Extension), ICAR-IIWBR, Karnal, Haryana

Dr. Gurdeep Singh, Head, KVK, Bathinda (Punjab)

Dr. Sarvpriya Singh, AP 9Frut Science), KVK, Bathinda (Punjab)

The Team monitored barley FLD conducted by KVK, Bathinda at farmer's field namely S. Manjinder Singh, village Jagaram Tirath, district Bathinda. The barley variety DWRB 137 was demonstrated. The farmer was satisfied with the performance of variety DWRB 137. The crop condition was very good. There were no incidence of disease and insects. The crop was near harvesting stage. The farmer was expecting good yield.

Wheat Demonstrations Conducted Under SCSP Programme During 2022-23

Under SCSP Programme, 510 varietal demonstrations of wheat varieties DBW 187, DBW 222, DBW 327, DBW 332 and HI 1605 were organized during 2022-23 *rabi* crop season to assess their performance at farmers' field. The demonstrations were carried out through KVKs of Punjab (18), Haryana (4), Rajasthan (2) and Jammu & Kashmir (1); and RLBCAU Jhansi (10) benefitting 539 farmers (Table 17). The demonstrations were conducted in 18 aspirational districts of Punjab (Amritsar, Barnala, Bathinda, Faridkot, Fatehgarh, Firozpur, Gurdaspur, Hoshiarpur, Jalandhar, Kapurthala, Ludhiana, Mansa, Moga, Muktsar Sahib, Rupnagar, Sangrur, Nawanshahar and Tarn Taran), 4 aspirational districts of Haryana (Ambala, Fatehabad, Sirsa and Yamunanagar), 2 aspirational districts of Rajasthan (Sriganganagar and Hanumangarh), 1 aspirational district of UT of Jammu & Kashmir (Samba), and 1 aspirational district of UP (Jhansi) covering a total of 510 acres area and 539 farmers of Scheduled Castes (SC) category. In Punjab, the demonstrations were conducted in 360 acres area benefitting 360 SC farmers; in Haryana, the demonstrations were conducted in 80 acres area benefitting 80 SC farmers; in Rajasthan, the demonstrations were conducted in 40 acres area benefitting 40 SC farmers; in J&K (UT), the demonstrations were conducted in 20 acres area benefitting 49 SC farmers; and in UP, the demonstrations were conducted in 10 acres area benefitting 10 SC farmers (Table 18). In each aspirational district, 20 demonstrations were conducted, except Jhansi in which 10 demonstrations were conducted. At all the locations, the yields of demonstrated varieties were more than the check varieties. Improved wheat varieties DBW 187, DBW 222, DBW 327, DBW 332 and HI 1605 with complete package of practices (irrigation management, nutrient management, weed control, seed treatment etc.) were demonstrated.

Table 17: District wise distribution of wheat demonstrations under SCSP programme during 2022-23

S.No.	State and District	Demonstrations conducted	Area sown (acres)	Number of farmers
Punjab				
1.	Amritsar	20	20	20
2.	Barnala	20	20	20
3.	Bathinda	20	20	20
4.	Faridkot	20	20	20
5.	Fatehgarh Sahib	20	20	20
6.	Firozpur	20	20	20
7.	Gurdaspur	20	20	20
8.	Hoshiarpur	20	20	20
9.	Jalandhar	20	20	20
10.	Kapurthala	20	20	20
11.	Ludhiana	20	20	20

12.	Mansa	20	20	20
13.	Moga	20	20	20
14.	Muktsar Sahib	20	20	20
15.	Rupnagar	20	20	20
16.	Sangrur	20	20	20
17.	SBS Nagar (Nawanshahar)	20	20	20
18.	Tarn Taran	20	20	20
Haryana				
19.	Ambala	20	20	20
20.	Fatehabad	20	20	20
21.	Sirsa	20	20	20
22.	Yamunanagar	20	20	20
Rajasthan				
23.	Sriganganagar	20	20	20
24.	Hanumangarh	20	20	20
Jammu & Kashmir (UT)				
25.	Samba	20	20	49
Uttar Pradesh				
26.	Jhansi	10	10	10
Total		510	510	539

Table 18: State wise distribution of wheat demonstrations under SCSP programme during 2022-23

Zone and State	Demonstrations conducted	Area sown (acres)	Number of farmers
Punjab	360	360	360
Haryana	80	80	80
Rajasthan	40	40	40
Jammu & Kashmir	20	20	49
Uttar Pradesh	10	10	10
Total	510	510	539

Table 19: District wise yield gain in wheat demonstrations under SCSP programme during 2022-23

State and District	Wheat demonstrations yield (q/ha)	Check yield (q/ha)	Gain (%)
Punjab			
Amritsar	57.23	54.50	5.00***
Barnala	54.78	52.15	5.03***
Bathinda	53.10	50.43	5.30***
Faridkot	52.58	48.18	9.13***
Fatehgarh Sahib	52.95	51.18	3.47***
Firozpur	50.68	48.65	4.16**
Gurdaspur	50.45	48.53	3.97 ^{NS}

Hoshiarpur	45.70	45.05	1.44 ^{NS}
Jalandhar	50.33	48.10	4.63 ^{***}
Kapurthala	54.55	48.65	12.13 ^{***}
Ludhiana	50.98	49.45	3.08 ^{**}
Mansa	59.15	55.83	5.96 ^{***}
Moga	50.43	48.33	4.35 ^{***}
Muktsar Sahib	54.93	51.23	7.22 ^{***}
Rupnagar	51.33	49.08	4.58 ^{**}
Sangrur	55.38	52.58	5.33 ^{NS}
Nawanshahar	53.48	51.25	4.34 ^{***}
Tarn Taran	49.75	46.58	6.82 ^{***}
Haryana			
Ambala	51.85	48.90	6.03 ^{***}
Fatehabad	58.90	52.15	12.94 ^{***}
Sirsa	55.45	49.98	10.96 ^{***}
Yamunanagar	57.28	52.65	8.78 ^{***}
Rajasthan			
Sriganganagar	50.05	40.35	24.04 ^{***}
Hanumangarh	46.58	42.45	9.72 ^{***}
Jammu & Kashmir			
Samba	21.50	18.50	16.22 ^{***}
UP			
Jhansi	23.33	20.10	16.04 ^{***}

*** Significant at 1 per cent level, ** Significant at 5 per cent level, * Significant at 10 per cent level, NS is Non-significant

The yield gain due to improved variety under SCSP wheat demonstrations was highest in Sriganganagar (24.04%) district in Rajasthan state followed by Samba (16.22%) district in Jammu and Kashmir (UT), Jhansi (16.04%) in UP state, Fatehabad (12.94%) district in Haryana state and Kapurthala (12.13%) district in Punjab state. The lowest yield gain was in Fatehgarh Sahib (3.47%) district in Punjab state (Table 19).

Table 20: State wise yield gain in wheat demonstrations under SCSP programme during 2022-23

State and Zone	Wheat demonstrations yield (q/ha)	Check yield (q/ha)	Gain (%)
Punjab	52.63	49.98	5.30 ^{***}
Haryana	56.10	51.10	9.78 ^{***}
Rajasthan	48.28	41.43	16.54 ^{***}
Jammu & Kashmir	21.50	18.50	16.22 ^{***}
Overall (North Western Plains-NWPZ)	49.85	46.50	7.20 ^{***}
Uttar Pradesh (CZ)	23.33	20.10	16.04 ^{***}

*** Significant at 1 per cent level ** Significant at 5 per cent level, * Significant at 10 per cent level, NS is Non-significant

Under SCSP wheat demonstrations, the yield gain was highest i.e.16.54% in Rajasthan. The lowest yield gain was 5.30 % in Punjab state. The zonal (NWPZ) yield gain was 7.20% (Table 20). The demonstrated varieties outperformed the existing varieties.

Table 21: Varietal performance in wheat demonstrations under SCSP programme during 2022-23

State and Centre	Improved variety	Improved variety mean yield (q/ha)	Check variety	Check variety mean yield (q/ha)	Yield gain over check (%)
Punjab					
Amritsar	DBW 187	54.95	HD 3086	52.70	4.27 ^{NS}
Amritsar	DBW 222	58.10	HD 3086	55.60	4.50 ^{***}
Amritsar	DBW 327	58.50	HD 3086	53.50	9.35 ^{NS}
Amritsar	DBW 332	59.43	HD 3086	56.13	5.88 ^{NS}
Barnala	DBW 187	54.05	HD 2967	52.50	2.95 ^{NS}
Barnala	DBW 222	56.25	HD 2967	52.50	7.14 ^{**}
Barnala	DBW 222	52.83	HD 3086	50.08	5.49 ^{NS}
Barnala	DBW 222	56.18	PBW 766	52.50	7.00 ^{NS}
Barnala	DBW 327	55.00	HD 2967	53.50	2.80 ^{NS}
Barnala	DBW 332	55.75	DBW 222	55.00	1.36 ^{NS}
Bathinda	DBW 187	52.98	HD 3086	50.45	5.00 ^{***}
Bathinda	DBW 222	52.33	HD 3086	49.98	4.70 ^{**}
Bathinda	DBW 327	58.75	HD 3086	52.50	11.90 ^{NS}
Bathinda	DBW 332	56.25	HD 3086	52.50	7.14 ^{NS}
Faridkot	DBW 187	51.33	HD 3086	48.08	6.76 ^{***}
Faridkot	DBW 222	53.33	HD 3086	48.05	10.98 ^{***}
Faridkot	DBW 327	58.00	HD 3086	49.00	18.37 ^{NS}
Faridkot	DBW 332	50.25	HD 3086	49.50	1.52 ^{NS}
Fatehgarh	DBW 187	53.13	PBW 677	52.50	1.19 ^{NS}
Fatehgarh	DBW 187	51.25	PBW 766	49.18	4.22 ^{NS}
Fatehgarh	DBW 222	51.25	PBW 677	49.18	4.22 ^{NS}
Fatehgarh	DBW 222	53.75	PBW 725	51.00	5.39 ^{NS}
Fatehgarh	DBW 222	52.50	PBW 869	52.50	0.00 ^{NS}
Fatehgarh	DBW 332	52.50	PBW 677	50.00	5.00 ^{NS}
Ferozepur	DBW 187	50.83	HD 2967	49.80	2.06 ^{NS}
Ferozepur	DBW 187	49.83	HD 3086	47.58	4.73 ^{NS}
Ferozepur	DBW 222	51.00	HD 3086	48.68	4.78 [*]
Ferozepur	DBW 327	51.25	HD 3086	49.38	3.80 ^{NS}
Ferozepur	DBW 332	48.13	HD 3086	47.50	1.32 ^{NS}
Gurdaspur	DBW 187	49.43	PBW 725	47.45	4.16 ^{NS}
Gurdaspur	DBW 222	49.93	PBW 725	47.68	4.72 ^{NS}
Gurdaspur	DBW 222	57.00	PBW 824	54.25	5.07 ^{NS}
Gurdaspur	DBW 327	53.63	PBW 725	52.88	1.42 ^{NS}
Gurdaspur	DBW 332	48.75	PBW 869	48.75	0.00 ^{NS}
Hoshiarpur	DBW 187	45.13	PBW 677	44.00	2.56 ^{NS}
Hoshiarpur	DBW 187	46.20	PBW 725	45.38	1.82 ^{NS}
Hoshiarpur	DBW 222	47.00	HD 3086	45.38	3.58 ^{NS}
Hoshiarpur	DBW 222	45.95	PBW 725	45.85	0.22 ^{NS}
Hoshiarpur	DBW 222	44.93	PBW 824	44.58	0.79 ^{NS}
Hoshiarpur	DBW 327	45.63	PBW 766	45.25	0.83 ^{NS}
Hoshiarpur	DBW 332	44.50	HD 3086	42.75	4.09 ^{NS}
Jalandhar	DBW 187	50.00	PBW 766	47.93	4.33 ^{**}
Jalandhar	DBW 187	49.50	PBW 677	45.00	10.00 ^{NS}
Jalandhar	DBW 222	48.75	PBW 677	46.70	4.39 ^{NS}
Jalandhar	DBW 222	51.85	PBW 766	49.95	3.80 ^{NS}
Jalandhar	DBW 222	50.00	PBW 869	48.38	3.36 ^{NS}
Jalandhar	DBW 332	47.50	PBW 869	45.00	5.56 ^{NS}
Kapurthala	DBW 187	55.50	PBW 725	49.38	12.41 ^{***}
Kapurthala	DBW 222	54.18	HD 3086	47.43	14.23 ^{***}
Kapurthala	DBW 222	54.08	PBW 725	48.50	11.49 ^{***}
Kapurthala	DBW 332	54.50	PBW 725	49.25	10.66 ^{NS}
Ludhiana	DBW 187	50.88	HD 2967	47.00	8.24 ^{NS}
Ludhiana	DBW 187	53.25	PBW 677	51.50	3.40 ^{NS}
Ludhiana	DBW 222	49.55	HD 2967	47.83	3.61 ^{NS}
Ludhiana	DBW 222	51.68	PBW 677	51.33	0.68 ^{NS}

State and Centre	Improved variety	Improved variety mean yield (q/ha)	Check variety	Check variety mean yield (q/ha)	Yield gain over check (%)
Ludhiana	DBW 222	50.95	PBW 725	49.93	2.05 ^{NS}
Mansa	DBW 187	59.70	HD 2967	55.30	7.96 ^{NS}
Mansa	DBW 222	60.33	HD 2967	57.33	5.23 ^{NS}
Mansa	DBW 222	57.30	HD 3086	53.80	6.51*
Mansa	DBW 222	55.00	PBW 725	52.50	4.76 ^{NS}
Mansa	DBW 327	64.00	DBW 187	62.00	3.23 ^{NS}
Mansa	DBW 332	62.00	DBW 187	60.00	3.33 ^{NS}
Moga	DBW 187	50.93	HD 2967	48.30	5.43***
Moga	DBW 187	50.63	HD 3086	48.88	3.58 ^{NS}
Moga	DBW 222	50.43	HD 2967	48.35	4.29 ^{NS}
Moga	DBW 222	50.68	HD 3086	48.35	4.81***
Moga	DBW 222	50.50	PBW 725	48.05	5.10*
Moga	DBW 327	48.40	WH 1105	48.18	0.47 ^{NS}
Moga	DBW 332	48.50	HD 3086	47.50	2.11 ^{NS}
Muksar Sahib	DBW 187	53.25	HD 3086	49.50	7.58 ^{NS}
Muksar Sahib	DBW 222	53.50	DBW 187	51.00	4.90 ^{NS}
Muksar Sahib	DBW 222	56.08	HD 3086	51.20	9.52**
Muksar Sahib	DBW 327	53.75	PBW 826	52.50	2.38 ^{NS}
Muksar Sahib	DBW 332	62.50	PBW 826	61.50	1.63 ^{NS}
Ropar	DBW 187	51.50	HD 3086	49.00	5.10 ^{NS}
Ropar	DBW 222	47.20	HD 2967	46.25	2.05 ^{NS}
Ropar	DBW 222	53.75	HD 3086	51.25	4.88*
Ropar	DBW 222	53.75	PBW 677	48.75	10.26 ^{NS}
Ropar	DBW 222	51.25	PBW 725	50.00	2.50 ^{NS}
Ropar	DBW 327	51.25	PBW 725	50.00	2.50 ^{NS}
Ropar	DBW 332	50.00	PBW 725	47.50	5.26 ^{NS}
Sangrur	DBW 187	57.08	DBW 303	55.00	3.77**
Sangrur	DBW 187	55.43	HD 3086	51.25	8.15 ^{NS}
Sangrur	DBW 222	55.00	DBW 303	53.45	2.90 ^{NS}
Sangrur	DBW 222	51.58	HD 3086	49.23	4.77 ^{NS}
Sangrur	DBW 327	70.00	DBW 303	62.50	12.00 ^{NS}
Sangrur	DBW 332	67.50	DBW 303	62.50	8.00 ^{NS}
Nawanshahr	DBW 187	54.08	Unnat PBW 343	51.05	5.93***
Nawanshahr	DBW 222	52.95	Unnat PBW 343	51.33	3.17***
Nawanshahr	DBW 327	54.25	Unnat PBW 343	51.75	4.83**
Nawanshahr	DBW 332	54.00	Unnat PBW 343	50.50	6.93 ^{NS}
Taran Taran	DBW 187	50.43	HD 2967	46.68	8.03*
Taran Taran	DBW 187	49.38	PBW 677	48.75	1.28 ^{NS}
Taran Taran	DBW 222	50.15	HD 2967	46.40	8.08***
Taran Taran	DBW 222	49.10	PBW 677	46.08	6.57**
Haryana					
Ambala	DBW187	50.83	HD 3086	48.58	4.63***
Ambala	DBW 222	51.75	HD 3086	49.50	4.55 ^{NS}
Ambala	DBW 327	53.58	HD 3086	48.75	9.90*
Ambala	DBW 332	54.38	HD 3086	48.75	11.54 ^{NS}
Fatehabad	DBW 187	59.00	HD 2967	53.13	11.06 ^{NS}
Fatehabad	DBW 187	56.88	HD 3086	51.88	9.64 ^{NS}
Fatehabad	DBW 222	58.75	WH 1105	50.00	17.50 ^{NS}
Fatehabad	DBW 222	59.08	HD 2967	52.03	13.55***
Fatehabad	DBW 222	60.00	WH 1105	53.95	11.21***
Fatehabad	DBW 327	60.00	DBW 187	50.00	20.00 ^{NS}
Fatehabad	DBW 332	53.75	DBW 187	46.25	16.22 ^{NS}
Sirsa	DBW 187	53.75	HD 2967	46.25	16.22 ^{NS}
Sirsa	DBW 187	57.93	HD 3086	50.83	13.97 ^{NS}
Sirsa	DBW 222	52.50	WH 1105	47.50	10.53 ^{NS}
Sirsa	DBW 222	55.43	HD 2891	50.43	9.92*
Sirsa	DBW 222	55.90	HD 3086	50.75	10.15***
Sirsa	DBW 327	55.00	HD 2967	54.75	0.46 ^{NS}

State and Centre	Improved variety	Improved variety mean yield (q/ha)	Check variety	Check variety mean yield (q/ha)	Yield gain over check (%)
Yamunanagar	DBW 187	54.00	HD 2967	50.95	5.99*
Yamunanagar	DBW 222	58.45	HD 2967	52.95	10.39***
Yamunanagar	DBW 222	58.23	HD 3086	53.93	7.97***
Yamunanagar	DBW 327	58.50	HD 2967	51.25	14.15**
Yamunanagar	DBW 332	58.75	HD 2967	51.25	14.63 ^{NS}
Yamunanagar	DBW 187	56.13	HD 2967	53.13	5.65 ^{NS}
Rajasthan					
Sriganganagar	DBW 187	53.33	HD 3086	42.93	24.23***
Sriganganagar	DBW 222	48.20	HD 3086	38.88	23.99***
Sriganganagar	DBW 222	52.50	HD 3086	42.80	22.66 ^{NS}
Hanumangarh	DBW 187	44.00	HD 3086	41.38	6.34 ^{NS}
Hanumangarh	DBW 222	46.10	HD 3086	42.00	9.76***
Hanumangarh	DBW 327	60.00	HD 3086	48.50	23.71 ^{NS}
Hanumangarh	DBW 332	54.28	HD 3086	48.50	11.91 ^{NS}
UT of Jammu & Kashmir					
Samba	DBW 187	22.28	HD 2967	18.43	20.90***
Samba	DBW 327	20.23	HD 2967	18.70	8.16 ^{NS}
Samba	DBW 332	25.00	HD 2967	19.75	26.58 ^{NS}
Uttar Pradesh					
Jhansi	DBW 187	23.33	Shree Ram (Local)	19.08	22.28***
Jhansi	HI 1605	23.33	Shree Ram (Local)	22.10	5.54 ^{NS}

*** Significant at 1 per cent level, ** Significant at 5 per cent level, * Significant at 10 per cent level, NS is Non-significant

In Punjab state, the significant yield gain due to improved wheat variety DBW 222 over check mean yield was highest at Kapurthala (14.23%). In Haryana state, the highest significant yield gain due to improved wheat variety DBW 327 was at Yamunanagar (14.15%). In Rajasthan state, the highest significant yield gain due to improved wheat variety DBW 187 was at Sriganganagar (24.23%). In J&K (UT), the highest significant yield gain due to improved wheat variety DBW 187 was at Samba (20.90%). In UP, the highest significant yield gain due to improved wheat variety DBW 187 was at Jhansi (22.28%) (Table 21).

Table 22: Highest yield of wheat varieties DBW 187, DBW 222, DBW 327, DBW 332 and HI 1605 under SCSP wheat demonstrations during 2022-23

State and Zone	District	Variety	Yield(q/ha)
Punjab	Sangrur	DBW 327	70.00
Punjab	Mansa	DBW 187	69.00
Punjab	Sangrur	DBW 332	67.50
Punjab	Mansa	DBW 222	63.00
Haryana	Fatehabad	DBW 222	63.75
Haryana	Fatehabad	DBW 187	61.75
Haryana	Fatehabad	DBW 327	60.00
Haryana	Fatehabad	DBW 332	60.00
Rajasthan	Hanumangarh	DBW 327	60.00
Rajasthan	Hanumangarh	DBW 332	54.28
Rajasthan	Sriganganagar	DBW 187	54.20
Rajasthan	Hanumangarh	DBW 222	52.00
UT of J&K	Samba	DBW 222	30.00
UT of J&K	Samba	DBW 327	26.25
UT of J&K	Samba	DBW 332	25.00
UT of J&K	Samba	DBW 187	24.75
UP	Jhansi	DBW 187	27.50
UP	Jhansi	HI 1605	27.50

In Punjab, the highest yield of variety DBW 327 was 70.00 q/ha in Sangrur district. In Haryana, the highest yield of variety DBW 222 was 63.75 q/ha in Fatehabad district. In Rajasthan, the highest yield of variety DBW 327 was 60.00 q/ha in Hanumangarh district. In UT of Jammu & Kashmir, the highest yield of variety DBW 222 was 30.00 q/ha in Samba district. In UP, the highest yield of variety DBW 187 was 27.50 q/ha in Jhansi district (Table 22).

Table 23: Improved and check wheat varieties at farmers' field in Punjab, Haryana, Rajasthan, UT of J&K and UP during *rabi* 2022-23

State	Improved varieties	Check varieties
Punjab	DBW 187, DBW 222, DBW 327, DBW 332	HD 3086, HD 2967, DBW 187, DBW 222, PBW 725, PBW 723 (Unnat PBW 343), PBW 677, PBW 766, PBW 826, PBW 824, PBW 869, DBW 303
Haryana	DBW 187, DBW 222, DBW 327, DBW 332	HD 3086, HD 2967, DBW 187, HD 2851, WH 1105
Rajasthan	DBW 187, DBW 222, DBW 327, DBW 332	HD 3086
UT of J&K	DBW 187, DBW 222, DBW 327, DBW 332	HD 2967
Uttar Pradesh	HI 1605, DBW 187	Shree Ram (Local)

Costs and Returns for SCSP Wheat Demonstrations and Barley FLDs vis-à-vis Check Plots

Profitability is one of the major factors influencing the adoption of any crop production technology. In this section, costs and returns analysis for wheat demonstrations under the SCSP programme and barley frontline demonstrations (FLDs) have been attempted across regions for the improved production technologies that were tested in the farmers' field during the 2022-23 *Rabi* season. Generally, in any economic study, total costs are discussed under two categories viz., variable costs and fixed costs, the widely adopted norm. Nevertheless, variable costs alone are reckoned to be the cost incurred by the farmers ignoring the fixed costs. In any economic analysis of farm business, the fixed costs should also be taken into consideration to arrive at total costs for computing the net income. However, in the present analysis, only operational or variable costs were considered to know the profitability of technology adoption as fixed costs remain the same for the particular farm wherein the technology (or variety) has been demonstrated to compare with the check. Operational costs include expenditure incurred on labour, seeds, manure, fertilizers, plant protection chemicals, etc. The returns over variable costs give an idea of profitability accrued to the farmer after meeting all the day-to-day expenses. Cost of production was estimated to know the cost incurred in producing a unit quantity of crop output i.e., ₹ per quintal. Returns per rupee of investment were also worked out to know the comparative profitability between wheat and barley.

Primary data were collected by the cooperating centers from the selected farmers who were allotted the FLDs. For wheat demonstrations conducted under the SCSP programme, the data were collected by the KVKs/Cooperating centres of the respective states. The personal interview and discussion method were adopted with the aid of pre-tested schedules designed exclusively for the purpose of evaluating the technologies disseminated through wheat demonstrations and barley FLDs. The data collected pertained to the *Rabi* season 2022-23. The communicated data were compiled and processed at the ICAR-Indian Institute of Wheat and Barley Research for further analysis and reporting. Every genuine effort was made by the coordinators to collect realistic data from the wheat demonstrations and barley FLD beneficiaries and inappropriate data reported from the cooperating centres/delayed reporting were not included in the costs and returns analysis.

Costs and Returns for Wheat (Demonstrations vis-à-vis Check Plot)

A perusal of Table 24 indicates that on average, demonstration of improved wheat varieties at the farmers' field under the SCSP programme gave ₹3.96 per rupee of investment in comparison to the farmers' practice (₹3.73). A significant difference in returns per rupee of investment was noticed between the demonstrated and check plots at the farmer's field. The profit per hectare in the demonstrated plot was highest in Haryana (₹107409), followed by Punjab (₹103858). The difference in profit levels between demonstration and check plots was highest in the case of Haryana. Operational costs were found to be marginally lower in wheat demonstrations conducted in Uttar Pradesh in comparison to the farmer's practice. Overall, by adopting a new wheat variety, a farmer earns a profit of ₹96913/ha in the NWPZ. Further, ₹711 has to be spent to produce a quintal of wheat through a new variety against ₹763 (farmers' choice of variety in the check plots).

Table 24: Costs and returns from wheat during 2022-23

Particulars	Cost of Cultivation (₹/ha)						Returns per ₹ invested		Cost of Production (₹/Qtl)	
	Operational Costs		Gross Returns		Profit		Demonstration	Farmers Practice	Demonstration	Farmers Practice
	Demonstration	Farmers Practice	Demonstration	Farmers Practice	Demonstration	Farmers Practice				
State										
Haryana	39758	38390	147168	133589	107409	95199	3.70	3.48	720	762
Jammu & Kashmir	24703	24330	58066	49621	33364	25291	2.35	2.04	1212	1333
Punjab	32238	32156	136096	128604	103858	96448	4.22	4.00	626	664
Rajasthan	34627	34278	118888	108525	84261	74247	3.43	3.17	762	823
Uttar Pradesh	23300	23794	87389	77620	64088	53825	3.75	3.26	1019	1221
Zone										
CZ	23300	23794	87389	77620	64088	53825	3.75	3.26	1019	1221
NWPZ	32664	32364	129577	121035	96913	88671	3.97	3.74	700	747
Technology										
Improved Variety	32349	32076	128157	119575	95809	87499	3.96	3.73	711	763
All Categories										
India	32349	32076	128157	119575	95809	87499	3.96	3.73	711	763

Costs and Returns for Barley (FLDs vis-à-vis Check Plot)

Table 25 indicates that on average, improved barley varieties demonstrated at the farmers' field under the FLD programme gave around ₹65305 profit per hectare.

Table 25: Costs and returns from barley during 2022-23

Particulars	Cost of Cultivation (₹/ha)						Returns per ₹ invested		Cost of Production (₹/Qtl)	
	Operational Costs		Gross Returns		Profit		FLD	Check	FLD	Check
	FLD	Check	FLD	Check	FLD	Check				
State										
Bihar	17792	19422	80061	59050	62069	39628	4.40	2.98	450	630
Haryana	32782	31230	84548	79860	51766	48630	2.57	2.55	700	706
Himachal Pradesh	29510	24670	63092	51917	33582	27247	2.14	2.10	1149	1195
Madhya Pradesh	31560	29225	73999	59633	42439	30408	2.34	2.04	921	1057
Punjab	23250	22765	83255	75022	60003	52259	3.58	3.30	540	590
Rajasthan	37575	36555	100220	90110	62654	53567	2.67	2.46	710	775
Uttar Pradesh	17795	19425	80058	59130	62269	39728	4.50	3.04	445	630
U.T. of J&K	29020	24101	91755	55337	62370	31227	3.16	2.30	778	811
Zone										
CZ	32700	30815	75050	62470	42350	31655	2.30	2.03	910	1030
NEPZ	17800	19500	80100	59200	62300	39700	4.50	3.04	450	640
NHZ	29530	24775	63150	51950	33620	27175	2.14	2.10	1140	1190
NWPZ	33100	31875	95600	87600	62500	55725	2.89	2.75	675	690
Technology										
Improved Variety	28282	26741	78475	65305	50192	38564	2.96	2.48	794	887
All Categories										
India	28282	26741	78475	65305	50192	38564	2.96	2.48	794	887

A significant difference in returns per rupee of investment was noticed between the demonstration and check plots across states and zones. Uttar Pradesh registered the highest returns per rupee of investment (₹4.50) through demonstrations, followed by Bihar (₹4.40) and Punjab (₹3.58). The difference in returns per rupee of investment between demonstration and check plots was highest in Uttar Pradesh, followed by Bihar and UT of J&K. The profit per hectare in FLDs was highest in Rajasthan (₹62654), followed by UP (₹62269) and UT of J&K (₹62370). The difference in profit between FLD and check plots ranged from ₹22541 in Uttar Pradesh to ₹3136 in Haryana. Interestingly, operational costs in Bihar were lower in FLDs than in check plots. The probable reason might be a reduction in the use of inputs based on the recommendation. The returns per rupee of investment across barley growing zones were highest in the NEPZ (₹4.50), followed by NWPZ (₹2.89) and CZ (₹2.30). Estimates of the cost of production indicated that the cost incurred in producing a unit quantity of barley output was the least (₹445 per quintal) in Uttar Pradesh owing to relatively less operational costs coupled with increased yield levels.

Overall, the profit analysis on wheat and barley indicated that the additional returns per hectare from the demonstrated varieties and/or technologies were more than the check varieties and/or technologies establishing the fact that demonstrations carry the successful technologies from lab to land. For some beneficiaries, it was found that the operational costs under check varieties were more than the demonstrations/FLDs. However, the present estimates are only the indicators for comparison within the current year's *Rabi* season (2022-23) and may not have a complete inter-year relevance as the demonstrations (improved varieties were different across regions) were conducted at different sites as well as by different farm households. Further, the difference in profit earned from wheat/barley cultivation is subject to farm-farmer-region specific conditions as it varies from case to case.

Technology Outreach Programme (2022-23)

Mera Gaon Mera Gaurav Scheme at ICAR-IIWBR, Karnal

The activities of the governments flagship programme towards doubling of farmers' income under 'Mera Gaon Mera Gaurav' (MGMG) scheme were carried out on large scale during the current crop season and all the teams advised and created awareness among the farmers on advanced practices of crop cultivation. Conducted barley frontline demonstrations (FLDs) at farmers' fields in Hisar and Yamunanagar districts. Timely reports of monthly and quarterly activities were compiled at IIWBR and submitted to the Zonal Nodal Officer & Director, ICAR- Agricultural Technology Application Research Institute (ATARI), Zone-2, Jodhpur (Rajasthan), regularly. Fourteen MGMG teams of scientists of different disciplines have been constituted at ICAR-IIWBR, Karnal including four to five scientists. Out of these, each of the twelve MGMG teams have selected five different villages, one team has selected four different villages and one team has selected one village. The MGMG Teams conducted wheat demonstrations using variety DBW 332 at farmers' fields in Haryana and Western UP.

Extension Activities

Training programmes organised/conducted by ICAR-IWBR, Karnal

S. No.	Date	Duration (days)	No. of Trainees	Subject	Organized by
1.	21 April, 2022	1	50 Women + 70 Men = 120	Training in Agricultural Practices under TSP/STC component	ICAR-IWBR, Karnal at Regional Station, ICAR-IWBR, Dalang Maidan, Lahaul & Spiti, HP
2.	3 May, 2022	1	97 Women + 68 Men = 165	Awareness/Training Programme regarding Agricultural Technologies at village Langdongdai, district West Khasi Hills, Meghalaya under NEH	ICAR-IWBR, Karnal in collaboration with KVK, West Khasi Hills, Meghalaya.
3.	5 May, 2022	1	62 Women + 38 Men = 100	Awareness/Training Programme regarding Agricultural Technologies at village Mawkynbad, district West Khasi Hills, Meghalaya under NEH	ICAR-IWBR, Karnal in collaboration with KVK, West Khasi Hills, Meghalaya.
4.	7 May, 2022	1	30 Women + 20 Men = 50	Awareness/Training Programme regarding Agricultural Technologies at village Phudbah, district West Khasi Hills, Meghalaya under NEH	ICAR-IWBR, Karnal in collaboration with KVK, West Khasi Hills, Meghalaya.
5.	21 June 2022	1	70 Farmers	Farmers' Awareness Campaign on Efficient and Balanced Use of Fertilizers (Urvarkon kaa Daksh evam Santulit Upyog) at village Kaimla, district Karnal.	ICAR-IWBR, Karnal
6.	21 September, 2022	1	33 Men + 43 Women = 76	Awareness Camp/Training Programme in Agricultural Practices at village Tapoiming, Car Nicobar, Nicobar, Andaman & Nicobar Islands under TSP.	ICAR-IWBR Karnal in collaboration with ICAR-CIARI, Port Blair, A&N Islands and KVK (ICAR-CIARI), Perka, Car Nicobar, A&N Islands.
7.	22 September, 2022	1	40 Men + 15 Women = 55	Awareness Camp/Training Programme in Agricultural Practices at village Perka, Car Nicobar, Nicobar, Andaman & Nicobar Islands under TSP.	ICAR-IWBR Karnal in collaboration with ICAR-CIARI, Port Blair, A&N Islands and KVK (ICAR-CIARI), Perka, Car Nicobar, Nicobar, A&N Islands.
8.	13-15 December, 2022	3	24	Madhya Pradesh Mein Gehoon ki Unnat Kheti	ICAR-IWBR, Karnal
9.	19 December, 2022	1	50	Awareness Camp/Training Programme regarding Agricultural Technologies at KVK, Nurmahal, Jalandhar, Punjab under SCSP programme.	ICAR-IWBR Karnal in collaboration with KVK, Nurmahal, Jalandhar, Punjab
10.	20 December, 2022	1	50	Awareness Camp/Training Programme regarding Agricultural Technologies at KVK, Kapurthala, Punjab under SCSP programme.	ICAR-IWBR Karnal in collaboration with KVK, Kapurthala, Punjab
11.	23 December, 2022	1	204	Kisan Diwas at village Larech, district Solan (HP) under SCSP programme.	ICAR-IWBR Karnal
12.	21-23 December, 2022	3	46	Uttarakhand mein Gehoon evam Jau Ki Unnat Kheti	ICAR-IWBR, Karnal
13.	13 February, 2023	1	50	Training in Agricultural Practices and Awareness regarding Millets at village Basehad, district Mandi, HP under SCSP Programme	ICAR-IWBR, Karnal in collaboration with KVK, Sundernagar, Mandi, HP

14.	14 February, 2023	1	50	Training in Agricultural Practices and Awareness regarding Millets at village Bahari, district Mandi, HP under SCSP Programme	ICAR-IIWBR, Karnal in collaboration with KVK, Sundernagar, Mandi, HP
15.	15 February, 2023	1	80	Training in Agricultural Practices and Awareness regarding Millets at KVK, Sundernagar, Mandi, HP under SCSP Programme	ICAR-IIWBR, Karnal in collaboration with KVK, Sundernagar, Mandi, HP
16.	6 March, 2023	1	120	Training in Agricultural Practices and Awareness regarding Millets at KVK, Nurmahal, Jalandhar, Punjab under SCSP Programme	ICAR-IIWBR, Karnal in collaboration with KVK, Nurmahal, Jalandhar, Punjab.
17.	20 March, 2023	1	100	Training cum Input Distribution Programme regarding Mushroom at KVK, Sundernagar, Mandi, HP under SCSP Programme	ICAR-IIWBR, Karnal in collaboration with KVK, Sundernagar, Mandi, HP
18.	21 March, 2023	1	150	Training cum Input Distribution Programme regarding Animal Science at KVK, Sundernagar, Mandi, HP under SCSP Programme	ICAR-IIWBR, Karnal in collaboration with KVK, Sundernagar, Mandi, HP

Organisation of Kisan Mela/Farmers Day/Field Day/Foundation Day etc.

S.No.	Date	Subject	Organized by
1.	28 April, 2022	Kisan Bhagidari Prathamikata Hamari programme organized at village Nabipur, Karnal	ICAR-IIWBR, Karnal
2.	21 June, 2022	Urverkon ke prabhavi aur santulit upyog par kisan jagrukata abhiyan organized at village Kaimla, Karnal	ICAR-IIWBR, Karnal
3.	15 October, 2022	Mahila Kisan Diwas	ICAR-IIWBR, Karnal
4.	03 December, 2022	Agriculture Education Day	ICAR-IIWBR, Karnal
5.	05 December, 2022	World Soil Day organized at village Phurlak, Karnal	ICAR-IIWBR, Karnal
6.	23 December, 2022	Kisan Diwas at village Larech, district Solan (HP) under SCSP programme.	ICAR-IIWBR Karnal
7.	24 January, 2023	National Girl Child Day	ICAR-IIWBR, Karnal
8.	09 February, 2023	Foundation Day of ICAR-IIWBR, Karnal	ICAR-IIWBR, Karnal

Organized/participation in Exhibition during 2022-23

S. No.	Programme	Date	Duration (Days)	Organized by
1.	Ganna Vikas Mela 2022	12 October, 2022	1	ICAR-Sugarcane Breeding Institute (SBI), Regional Centre, Karnal, Haryana
2.	Agro-Climate Virat Kisan Mela 2022	18-20 October, 2022	3	Government of Uttar Pradesh at Krishna Inter College, Patherdewa, Deoria, UP
3.	Co-Operative Expo	14 February, 2023		HAFED at Agro Mall, Karnal, Haryana
4.	Kisan Mela 2023	26-27 February, 2023	3	Rani Lakshmi Bai Central Agricultural University, Jhansi, UP
5.	Kharif Kisan Mela 2023	01 March, 2023	1	ICAR- Central Soil Salinity Research Institute (CSSRI), Karnal, Haryana
6.	Haryana Krishi Kisan Mela 2023	10-12 March, 2023	3	Government of Haryana at CCS HAU, Hisar, Haryana

Coordination of visits at ICAR-IWBR, Karnal during 2022-23

Sr. No.	Date	Farmers, Students, Agriculture Officers	From
1.	16.05.2022	49 Farmers	Balod and Kabirdham, Chhattisgarh
2.	17.05.2022	94 Students	CoA, Jodhpur and Nagaur, Rajasthan
3.	22.05.2022	42 Students	CoA, Jodhpur University, Rajasthan
4.	27.05.2022	43 Students	Rajnandgaon, Chhattisgarh
5.	01.06.2022	30 Students	SVPUA&T, Meerut, UP
6.	07.06.2022	96 Students	CoA, Kerala Agriculture University, Kerala
7.	02.07.2022	50 Students	CoA (SKNAU Jobner), Fatehpur, Sikar, Rajasthan
8.	07.07.2022	26 Students	Aravinthar Agricultural Institute of Technology, Thiruvannamalai, Tamil Nadu
9.	29.07.2022	17 Agriculture Officers	EEl, Nilokheri, Karnal, Haryana
10.	03.08.2022	40 Students	TMU, Moradabad, UP
11.	06.08.2022	23 Farmers	Sohana, Gurugram, Haryana
12.	17.08.2022	50 Farmers	Baragaon, Choura, Chorpura, Haryana
13.	22.08.2022	30 Students	Dayal Singh Public School, Karnal, Haryana
14.	25.08.2022	100 Farmers	Indri, Karnal, Haryana
15.	26.08.2022	25 Farmers	Bharatpur, Rajasthan
16.	21.09.2022	10 Agriculture Officers	DDA, JICA, Hamirpur, Himachal Pradesh
17.	22.09.2022	25 Farmers	ATMA, Raisen, MP
18.	03.10.2022	27 Farmers	Visitors of 9 states from NDRI, Karnal
19.	11.10.2022	78 Farmers	ICAR-CSWRI, Avikanagar, Rajasthan
20.	11.10.2022	55 Students	CoA, Ahmednagar, Maharashtra
21.	13.10.2022	52 Farmers	Sabarkantha, Gujarat
22.	15.10.2022	30 Female Farmers	Sikar, Rajasthan
23.	17.10.2022	50 Farmers	Sabarkantha, Gujarat
24.	19.10.2022	56 Students	SGGSW University, Fatehgarh Sahib, Punjab
25.	20.10.2022	1 Farmer	Village Ratangarh, Yamunanagar, Haryana
26.	21.10.2022	32 Farmers	ATMA, Sriganganagar, Rajasthan
27.	31.10.2022	50 Students	School of Agriculture, LPU, Phagwara, Punjab
28.	02.11.2022	37 Students	DAV Collage for Woman, Karnal, Haryana
29.	10.11.2022	23 Female Farmers	Bikaner, Rajasthan
30.	11.11.2022	25 Students	HR International School, Village Shakarpur, Block Gangoh, Saharanpur, UP
31.	12.11.2022	19 Farmers	Bikaner, Rajasthan
32.	13.11.2022	25 Farmers	Sanjeevani Manav Kalyan evam Jeev Seva Sansthan, Bundi, Rajasthan
33.	14.11.2022	26 Farmers	Ganga Valley Jan Jagaran Sanstha, Uttarkashi, Uttarakhand
34.	15.11.2022	45 Farmers	ATMA, Nagaur, Rajasthan
35.	17.11.2022	21 Officers	EEl, Nilokheri, Haryana
36.	22.11.2022	25 Farmers	Omkar Sewa Sansthan, Amethi (UP)
37.	28.11.2022	44 Farmers	Raebareli (UP)
38.	28.11.2022	25 Farmers	Nehru Yuva Sansthan, Eklingpura, Bhilvada, Rajasthan
39.	30.11.2022	50 Farmers	ATMA, Nagaur, Rajasthan
40.	02.12.2022	30 Students	Biology Classes, 659, Sector 8, Karnal, Haryana
41.	02.12.2022	21 Students	GSSS, Taraori, Karnal, Haryana
42.	02.12.2022	27 Students	GSSS, Pundrak, Karnal, Haryana
43.	07.12.2022	40 Farmers	DD, ATMA, Alwar, Rajasthan
44.	07.12.2022	40 Farmers	ATMA, Tonk, Rajasthan
45.	08.12.2022	20 Farmers	Bhawanigarh, Sangrur, Punjab
46.	08.12.2022	102 Students	KDSP CoA, Nashik, Maharashtra
47.	14.12.2022	25 Farmers	Ayurved Research Foundation, Saharanpur (UP)
48.	16.12.2022	115 Student	Adhiyamaan college of Agriculture and Research, Krishnagiri, Tamil Nadu
49.	17.12.2022	81 Students	SRS College of Agri. Institute, Vedaatur (Affiliated to TNAU), Tamil Nadu
50.	21.12.2022	100 Farmers	SDAO, Kairana, Shamli (Farmers from Shamli, Moradabad, Saharanpur, Meerut, Aligarh, UP)

51.	22.12.2022	27 Officers	EEl, Nilokheri, Karnal, Haryana
52.	23.12.2022	30 Farmers	Manav Vikas Sansthan, Bilaspur, HP
53.	26.12.2022	70 Students	GSSS, Subri, Karnal, Haryana
54.	28.12.2022	04 Student	GGMS, Khanpura Kalan, Jhajjar, Haryana
55.	29.12.2022	52 Students	GSSS, Thamber, Barara, Ambala, Haryana
56.	03.01.2023	14 Farmers	Loharu, Bhiwani, Haryana
57.	09.01.2023	07 Farmers	Dhuri, Sangrur, Punjab
58.	19.01.2023	43 Officers	EEl, Nilokheri, Haryana
59.	21.01.2023	37 Farmers	Center for Agri.Extension and Farmers Development, Ahmadabad, Gujarat
60.	25.01.2023	50 Farmers	Chhota Udaipur, Gujarat
61.	27.01.2023	50 Farmers	Dahod, Gujarat
62.	31.01.2023	50 Farmers	ATMA, Kheda, Gujarat
63.	01.02.2023	52 Farmers	Surendranagar, Gujarat
64.	02.02.2023	102 Farmers	State Agri Management Institute, Rehmankhara, Lucknow, UP
65.	04.02.2023	50 Farmers	CAEFD, Ahmadabad, Gujarat
66.	04.02.2023	30 Farmers	Narmada, Gujarat
67.	11.02.2023	46 Farmers	Vadodara, Gujarat
68.	12.02.2023	01 Officer	Pragya Gramothan Sewa Samiti, Fatehpur, UP
69.	13.02.2023	45 Students	Mata Gujri College, Fatehgarh Sahib, Punjab
70.	13.02.2023	25 Students	TRIARD, Perumbalur, Tamil Nadu
71.	13.02.2023	50 Farmers	ATMA, Sikar, Rajasthan
72.	15.02.2023	17 Farmers	Gurdaspur, Punjab
73.	15.02.2023	117 Students	College of Agricultural Technology, Theni, Tamil Nadu
74.	16.02.2023	45 Female Farmers	Ahmedabad, Gujarat
74.	17.02.2023	40 Farmers	Sant Kabir Nagar, Basti (UP)
75.	20.02.2023	40 Students	GPS, Model Town, Karnal, Haryana
76.	20.02.2023	115 Students	Don Bosco College of Agriculture, Ranipet, Tamil Nadu
77.	24.02.2023	17 Farmers	Gurdaspur, Punjab
78.	24.02.2023	15 Farmers	Pataudi, Gurugram, Haryana
79.	25.02.2023	50 Farmers	ATMA, Anand, Gujarat
80.	26.02.2023	33 Farmers	SAME, ATMA, districts of Kashmir Division
81.	28.02.2023	50 Farmers	Bhavnagar, Gujarat
82.	28.02.2023	43 Farmers	PKVY, Fatehpur (UP)
83.	01.03.2023	86 Students	Tamil Nadu
84.	02.03.2023	44 Farmers	Junagarh, Gujarat
85.	06.03.2023	82 Students	Nammazhvar College of Agriculture and Technology, Kanuithy, Ramnad, Tamil Nadu
86.	07.03.2023	95 Students	Agriculture College & RI, Pudukkottai, Tamil Nadu
87.	14.03.2023	118 Students	SKN CoA, Jobner, Rajasthan
88.	14.03.2023	28 Farmer	Dakshin Dinajpur, West Bengal
89.	15.03.2023	50 Farmers	Rajkot, Gujarat
90.	17.03.2023	45 Farmers	Tapi, Gujarat
91.	17.03.2023	113 Farmers	Palar Agriculture College (TNAU), Kothamarikuppam, Vellore, Tamil Nadu
92.	20.03.2023	39 Female Farmers	CAEFD, Botad, Gujarat
93.	22.03.2023	47 Students	School of Agriculture, Bharath University, Chennai, Tamil Nadu
94.	23.03.2023	50 Farmers	SAMETI, Raipur, Chhattisgarh
95.	23.03.2023	26 Farmers	Bulandshahar, Meerut (UP)
96.	26.03.2022	44 Farmers	Raipur, Chhattisgarh
97.	29.03.2023	62 Farmers	Village Tepla, Ambala, Haryana
98.	29.03.2023	43 Farmers	Agriculture University, Jodhpur, Rajasthan

TV Programme

Date	Name of the programme
13.01.2023	DD Kisan Vichar-Vimarsh Programme

Awards and Recognition

Best Exhibition Stall Award at Kharif Kisan Mela 2023 organised by ICAR- Central Soil Salinity Research Institute (CSSRI), Karnal on 01 March, 2023.

Utkrast Lekh Puraskar for the article “Gehoon ke Bhandaran evam Sanrachanaen” (Authored by Mangal Singh, Anuj Kumar, Satyavir Singh and Anil Kumar Khippal) published in *Gehoon evam Jau Swarnima* 2022. Vol. 13: ICAR-Indian Institute of Wheat and Barley Research, Karnal.

Best Stall Award during **Ganna Kisan Mela-2022** organized by ICAR-Sugarcane Breeding Institute, Regional Station, Karnal, Haryana on 12 October, 2022.

Appreciation Award for participation in “Agro-Climatic Zone Level Virat Kisan Mela-2022” organized by Uttar Pradesh Government at Acharya Narendra Dev Inter College, Pather Dewa, Deoria, Uttar Pradesh during 18.10.2022 to 20.10.2022.

Dr. Mangal Singh got “**Second Prize**” in **Khula Manch Competition** organized ICAR-IIWBR, Karnal during *Rajbhasha Utsav Evam Hindi Pakhwada* from September 16-30, 2022.

Dr. Mangal Singh got “**Second Prize**” in **Best worker Competition** (maximum use of Hindi in official work) organized ICAR-IIWBR, Karnal during *Rajbhasha Utsav Evam Hindi Pakhwada* from September 16-30, 2021.

Trainings/Meetings/Webinar/Conference etc. attended by scientist/technical staff

Dr. Satyavir Singh and Dr. Anuj Kumar participated in “Interaction Meet with Stakeholders for Promotion of Wheat Export” in association with APEDA on 11th May 2022.

Dr. Mangal Singh participated in the three days training programme on “Emotional and Social Intelligence at Workplace” organized by ICAR-Indian Institute of Wheat and Barley Research, Karnal during 13-15 December, 2022.

Mangal Singh participated in the 10 days training programme on “Agripreneurship Development in Seed Sector for Sustainability of Agriculture & Rural Economy” organized by ICAR-Indian Institute of Wheat and Barley Research, Karnal during 1-10 February, 2023.

Annexures

Annexure-I: Center wise, State wise and Zone wise distribution of Barley FLDs 2022-23 (In Acres)

Annexure-II: Category wise number of Barley Frontline Demonstrations (FLDs) Farmers during 2022-23

Annexure-III: Information on barley varieties demonstrated in Frontline Demonstrations (FLDs) during 2022-23

Annexure-IV: Guidelines for conducting Rice, Wheat, Barley, Pulses, Maize and Nutri-Cereals (Sorghum, Pearl Millet & Small Millets) Frontline Demonstrations (FLDs) as the approved component of National Food Security Mission (NFSM) Scheme of the Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India, Krishi Bhawan, New Delhi.

Center wise, State wise and Zone wise distribution of Barley FLDs 2022-23 (In Acres)

Centre wise distribution of barley FLDs during *rabi* 2022-23

S.No.	Zone and Centre	BFLDs Allotted	BFLDs Conducted	Area sown (acres)	No. of farmers/ locations
Northern Hills Zone (NHZ)					
1.	CSKHPKV, HAREC, Bajaura, Kullu (HP)	12	12	12	12
2.	ICAR-IARI, RS, Amartara Cottage, Shimla (HP)	5	3	3.3	19
North Eastern Plains Zone (NEPZ)					
3.	NDUA&T, Kumarganj, Ayodhya (UP)	10	10	10	10
4.	KVK (IAS-BHU), Barkachha, Mirzapur (UP)	10	10	13*	13
5.	CSAUA&T, Kanpur (UP)	10	10	10	10
6.	BHU, Varanasi (UP)	12	Not conducted		
7.	KVK, Gorakhpur-2, (Guru Gorakshnath Seva Sansthan), Chauk Mafi (Peppeganj), Jangal Kaudiya, Gorakhpur (UP)	10	10	10	10
8.	KVK (NDUA&T) Basti, Katiya, Banjariaya Farm, Basti (UP)	10	10	10	15
9.	KVK (Dr. RPCAU, Pusa, Samastipur), Begusarai (Bihar)	5	5	5	5
10.	KVK (BAU, Bhagalpur), Agwanpur, Barh, Patna (Bihar)	5	5	5	5
11.	KVK, Samastipur-1 (Dr. RPCAU, Pusa, Samastipur), Birauli, Samastipur (Bihar)	5	5	5	5
12.	KVK, Samastipur-2 (Dr. RPCAU, Pusa, Samastipur), Lada, Singhia, Samastipur (Bihar)	5	5	5	5
North Western Plains Zone (NWPZ)					
13.	KVK (SKUAST-Jammu), Rajhani, Kathua (J&K)	10	10	10	17
14.	PAU, Ludhiana (Punjab)	8	8	8	8
15.	KVK, (PAU), Khokhar Khurd, Mansa (Punjab)	10	10	13*	13
16.	KVK (PAU), Kheri, Patran Road, Sangrur (Punjab)	10	10	13*	13
17.	KVK (PAU), Goneana, Muksar (Punjab)	10	10	10	10
18.	KVK (PAU), Dabwali Road, Near Kheti Bhawan, Bathinda (Punjab)	10	10	13*	13
19.	CCSHAU, Hisar (Haryana)	10	10	10	10
20.	KVK (BB Ashram), Rampura, Rewari (Haryana)	10	10	10	8
21.	KVK (CCSHAU), Bhiwani (Haryana)	10	10	13*	13
22.	ICAR-IIWBR, Karnal (Haryana)	7	7	7	7
23.	RARI (SKNAU), Durgapura, Jaipur (Rajasthan)	10	10	10	10
24.	KVK (Pragati Trust), Chomu, Jaipur (Rajasthan)	8	8	8	10
25.	KVK (AU-Kota), Akorashi, Dhindora, Hindauncity, Karauli (Rajasthan)	10	10	13*	13
26.	KVK, Alwar-1 (SKNAU-Jobner), Navgaon, District-Alwar (Rajasthan)	5	5	5	5
27.	ACES, Amity University Uttar Pradesh, Noida (UP)	10	10	10	10
28.	KVK (SVPUA&T, Modipuram, Meerut), RRS, Nagina, Bijnor (UP)	5	5	5	5
Central Zone (CZ)					
29.	RCOA (MPUA&T), Udaipur (Rajasthan)	12	12	12	12
30.	KVK (MPUA&T), Dhoinda, Rajasmand (Rajasthan)	12	12	12	12
31.	KVK (JNKVV), Kuthulia Farm, Rewa (MP)	12	12	12	12
32.	KVK (JNKVV), Purushottampur, Panna (MP)	12	12	12	12
33.	KVK (JNKVV), Tikamgarh (MP)	12	12	12	12
34.	KVK (RVSKVV), Biaora, Kothi Bagh, Rajgarh (MP)	12	12	12	12
35.	COA (JNKVV), Ganj Basoda, Vidisha (MP)	12	12	12	12
36.	KVK (BUA&T-Banda), Lalitpur (UP)	12	12	12	12
37.	KVK (BUA&T-Banda), Bharari, Bhojla, Jhansi (UP)	12	12	12	12
TOTAL		350	336	354.3*	382

* Area covered more than allotted which is restricted to area equal to allotted FLDs.

State wise distribution of barley FLDs during *rabi* 2022-23 (in acres)

S.No.	State/UT	BFLDs Allotted	BFLDs Conducted	Area Sown (acres)	No. of farmers/ locations
1.	HP	17	15	15.3	31
2.	UP	101	89	92	97
3.	Bihar	20	20	20	20
4.	J&K	10	10	10	17
5.	Punjab	48	48	57	57
6.	Haryana	37	37	40	38
7.	Rajasthan	57	57	60	62
8.	MP	60	60	60	60
Total		350	336	354.3*	382

* Area covered more than allotted which is restricted to area equal to allotted FLDs.

Zone wise distribution of barley FLDs during *rabi* 2022-23 (in acres)

S.N.	Zone	BFLDs Allotted	BFLDs Conducted	Area Sown (acres)	No. of Farmers/ Locations
1.	NHZ	17	15	15.3	31
2.	NEPZ	82	70	73.0	78
3.	NWPZ	143	143	158.0	165
4.	CZ	108	108	108.0	108
Total		350	336	354.3*	382

* Area covered more than allotted which is restricted to area equal to allotted FLDs.

Annexure - II : Category wise number of barley FLDs farmers during 2022-23

S.N.	Name of Centre	Allocation		Achievement		Achievement Men, Area in ha, (No. of Farmers)				Achievement Women, Area in ha, (No. of Farmers)				Men	Women	Total
		No. of FLDs	Area under FLDs (ha)	No. of FLDs	Area under FLDs (ha)	SC	ST	OBC	Gen	SC	ST	OBC	Gen	Area(ha) (No. of Farmers)	Area(ha) (No. of Farmers)	Area(ha) (No. of Farmers)
	NHZ															
1.	CSKHPKV, HAREC, Bajaura, Kullu (HP)	12	12	12	12	-	-	-	1.0 (01)	-	-	-	11.0 (11)	1 (01)	11 (11)	12 (12)
2.	ICAR-IARI, RS, Amartara Cottage, Shimla (HP)	5	3	3.3	19	-	-	-	3.1 (18)	-	-	-	0.2 (01)	3.1 (18)	0.2 (01)	3.3 (19)
	NEPZ															
3.	NDUA&T, Kumarganj, Ayodhya (UP)	10	10	10	10	1.0 (01)	1.0 (01)	-	8.0 (08)	-	-	-	-	10.0 (10)	-	10.0 (10)
4.	KVK (IAS-BHU), Barkachha, Mirzapur (UP)	10	10	10	13*	-	-	10.0 (10)	-	-	-	3.0 (03)	-	10.0 (10)	3.0 (03)	13.0 (13)
5.	CSAUA&T, Kanpur (UP)	10	10	10	10	2.0 (02)	-	8.0 (08)	-	-	-	-	-	10.0 (10)	-	10.0 (10)
6.	BHU, Varanasi (UP)	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7.	KVK, Gorakhpur-2 (GGSS), Gorakhpur (UP)	10	10	10	10	-	-	9.0 (09)	1.0 (01)	-	-	-	-	10.0 (10)	-	10.0 (10)
8.	KVK (NDUA&T) Basti, Katiya, Banjariaya Farm, Basti (UP)	10	10	10	15	-	-	3.0 (5)	7.0 (10)	-	-	-	-	10.0 (15)	-	10.0 (15)
9.	KVK (Dr. RPCAU, Pusa, Samastipur), Begusarai (Bihar)	5	5	5	5	-	-	1.0 (01)	4.0 (04)	-	-	-	-	5.0 (05)	-	5.0 (05)
10.	KVK (BAU, Bhagalpur), Agwanpur, Barh, Patna (Bihar)	5	5	5	5	-	-	3.25 (03)	-	-	-	1.75 (02)	-	3.25 (03)	1.75 (02)	5.0 (05)
11.	KVK, Samastipur-1 (Dr. RPCAU, Pusa, Samastipur), Birauli, Samastipur (Bihar)	5	5	5	5	-	-	4.0 (04)	-	-	-	1.0 (01)	-	4.0 (04)	1.0 (01)	5.0 (05)

S.N.	Name of Centre	Allocation		Achievement		Achievement Men, Area in ha, (No. of Farmers)				Achievement Women, Area in ha, (No. of Farmers)				Men	Women	Total
		No. of FLDs	Area under FLDs (ha)	No. of FLDs	Area under FLDs (ha)	SC	ST	OBC	Gen	SC	ST	OBC	Gen	Area(ha) (No. of Farmers)	Area(ha) (No. of Farmers)	Area(ha) (No. of Farmers)
12.	KVK, Samastipur-2 (Dr. RPCAU, Pusa, Samastipur), Lada, Singhia, Samastipur (Bihar)	5	5	5	5	-	-	-	5.0 (05)	-	-	-	-	5.0 (05)	-	5.0 (05)
	NWPZ															
13.	KVK (SKUAST-Jammu), Rajhani, Kathua (J&K)	10	10	10	17	2.75 (05)	-	-	7.25 (12)	-	-	-	-	10.0 (17)	-	10.0 (17)
14.	PAU, Ludhiana (Punjab)	8	8	8	8	-	-	-	8.0 (08)	-	-	-	-	8.0 (08)	-	8.0 (08)
15.	KVK, (PAU), Khokhar Khurd, Mansa (Punjab)	10	10	13*	13	1.0 (01)	-	-	12.0 (12)	-	-	-	-	13.0 (13)	-	13.0 (13)
16.	KVK (PAU), Kheri, Patran Road, Sangrur (Punjab)	10	10	13*	13	10.0 (10)	-	-	-	3.0 (03)	-	-	-	10.0 (10)	3.0 (03)	13.0 (13)
17.	KVK (PAU), Goneana, Muktsar (Punjab)	10	10	10	10	10.0 (10)	-	-	-	-	-	-	-	10.0 (10)	-	10.0 (10)
18.	KVK (PAU), Dabwali Road, Near Kheti Bhawan, Bathinda (Punjab)	10	10	13*	13	-	-	-	13.0 (13)	-	-	-	-	13.0 (13)	-	13.0 (13)
19.	CCSHAU, Hisar (Haryana)	10	10	10	10	1.0 (01)	-	7.0 (07)	2.0 (02)	-	-	-	-	10.0 (10)	-	10.0 (10)
20.	KVK (BB Ashram), Rampura, Rewari (Haryana)	10	10	10	8	-	-	8.0 (08)	-	-	-	-	-	8.0 (08)	-	8.0 (08)
21.	KVK (CCSHAU), Bhiwani (Haryana)	10	10	13*	13	-	-	-	13.0 (13)	-	-	-	-	13.0 (13)	-	13.0 (13)
22.	ICAR-IIWBR, Karnal (Haryana)	7	7	7	7	-	-	-	7.0 (07)	-	-	-	-	7.0 (07)	-	7.0 (07)
23.	RARI (SKNAU), Durgapura, Jaipur (Rajasthan)	10	10	10	10	-	-	8.0 (08)	1.0 (01)	-	-	1.0 (01)	-	9.0 (09)	1.0 (01)	10.0 (10)
24.	KVK (Pragati Trust), Chomu, Jaipur (Rajasthan)	8	8	8	10	-	-	-	10.0 (10)	-	-	-	-	10.0 (10)	-	10.0 (10)

S.N.	Name of Centre	Allocation		Achievement		Achievement Men, Area in ha, (No. of Farmers)				Achievement Women, Area in ha, (No. of Farmers)				Men	Women	Total
		No. of FLDs	Area under FLDs (ha)	No. of FLDs	Area under FLDs (ha)	SC	ST	OBC	Gen	SC	ST	OBC	Gen	Area(ha) (No. of Farmers)	Area(ha) (No. of Farmers)	Area(ha) (No. of Farmers)
25.	KVK (AU-Kota), Akorashi, Dhindora, Hindauncity, Karauli (Rajasthan)	10	10	13*	13	-	1.0 (01)	8.0 (08)	1.0 (01)	-	-	3.0 (03)	-	10.0 (10)	3.0 (03)	13.0 (13)
26	KVK, Alwar-1 (SKNAU-Jobner), Navgaon, District-Alwar (Rajasthan)	5	5	5	5	-	-	5.0 (05)	-	-	-	-	-	5.0 (05)	-	5.0 (05)
27.	ACES, Amity University Uttar Pradesh, Noida (UP)	10	10	10	10	-	-	9.0 (09)	-	-	-	1.0 (01)	-	9.0 (09)	1.0 (01)	10.0 (10)
28.	KVK (SVPUA&T, Modipuram, Meerut), RRS, Nagina, Bijnor (UP)	5	5	5	5	-	-	2.0 (02)	3.0 (03)	-	-	-	-	5.0 (05)	-	5.0 (05)
	CZ															
29.	RCOA (MPUA&T), Udaipur (Rajasthan)	12	12	12	12	-	-	-	10.0 (10)	-	-	-	2.0 (02)	10.0 (10)	2.0 (02)	12.0 (12)
30.	KVK (MPUA&T), Dhoinda, Rajasmand (Rajasthan)	12	12	12	12	2.0 (02)	-	8.0 (08)	1.0 (01)	-	-	1.0 (01)	-	11.0 (11)	1.0 (01)	12.0 (12)
31.	KVK (JNKVV), Kuthulia Farm, Rewa (MP)	12	12	12	12	-	-	8.0 (08)	3.0 (03)	-	-	1.0 (01)	-	11.0 (11)	1.0 (01)	12.0 (12)
32.	KVK (JNKVV), Purushottampur, Panna (MP)	12	12	12	12	-	1.0 (01)	8.0 (08)	2.0 (02)	-	-	1.0 (01)	-	11.0 (11)	1.0 (01)	12.0 (12)
33.	KVK (JNKVV), Tikamgarh (MP)	12	12	12	12	1.0 (01)	1.0 (01)	3.0 (03)	7.0 (07)	-	-	-	-	12.0 (12)	-	12.0 (12)
34	KVK (RVSKVV), Biaora, Kothi Bagh, Rajgarh (MP)	12	12	12	12	3.0 (03)	-	4.0 (04)	2.0 (02)	1.0 (01)	-	2.0 (02)	-	9.0 (09)	3.0 (03)	12.0 (12)
35.	COA (JNKVV), Ganj Basoda,	12	12	12	12	-	-	7.0 (07)	2.0 (02)	1.0 (01)	-	2.0 (02)	-	9.0 (09)	3.0 (03)	12.0 (12)

S.N.	Name of Centre	Allocation		Achievement		Achievement Men, Area in ha, (No. of Farmers)				Achievement Women, Area in ha, (No. of Farmers)				Men	Women	Total
		No. of FLDs	Area under FLDs (ha)	No. of FLDs	Area under FLDs (ha)	SC	ST	OBC	Gen	SC	ST	OBC	Gen	Area(ha) (No. of Farmers)	Area(ha) (No. of Farmers)	Area(ha) (No. of Farmers)
	Vidisha (MP)															
36.	KVK (BUA&T-Banda), Lalitpur (UP)	12	12	12	12	-	1.0 (01)	7.0 (07)	3.0 (03)	-	-	1.0 (01)	-	11.0 (11)	1.0 (01)	12.0 (12)
37.	KVK (BUA&T-Banda), Bharari, Bhojla, Jhansi (UP)	12	12	12	12	4.0 (04)	-	6.0 (06)	2.0 (02)	-	-	-	-	12.0 (12)	-	12.0 (12)
	Total	350	336	354.3	382	37.75 (40)	5.0 (05)	136.25 (140)	138.35 (159)	5.0 (05)	0.0 (0)	18.75 (19)	13.2 (14)	317.35 (344)	36.95 (38)	354.3 (382)

Note : The figures in brackets indicate the number of farmers.

* Area covered more than allotted which is restricted equal to allotted FLDs.

Annexure-III : Information on barley varieties demonstrated in Frontline Demonstrations (FLDs) during 2022-23

Variety	Zone	Production condition	Year	Released by CVRC/SVRC	Developed by	Height (cm)	Days to maturity	TGW (gm)	Average Yield (q/ha)	Pot. Yield (q/ha)
HBL 804 (Him Palam Jau 2) Dual purpose	Low and Mid Hills of HP (Zone-I)	Rainfed/Irrigated	2018	SVRC	CSKHPKV, HAREC, Bajaura, Kullu (HP)	70-90	175-185	40.0	Grain yield = 20-25 Green fodder yield = 25-30	-
HBL 713 (Him Palam Jau 1)	Low and Mid Hills of HP	Rainfed/Irrigated	2016	SVRC	CSKHPKV, HAREC, Bajaura, Kullu (HP)	70-90	170-180	40.30	30-35	51.00
BHS 400	NHZ	Rainfed, Timely sown	2014	CVRC	IARI, Regional Station, Shimla, HP	83	168	39.13	32.71	58.70
BHS 380	NHZ	Rainfed, Timely sown	2010	CVRC	IARI, Regional Station, Shimla, HP	60	182	35.00	Grain=21.00 Forage=59.4	Grain=29.80 Forage=89.7
RD 2907	NWPZ NEPZ	Saline/ Alkaline soils	2018	CVRC	RARI, Durgapura, Jaipur, Rajasthan	88	124	43.3	35.25	53.60
DWRB 137	NEPZ	Irrigated, Timely sown	2018	CVRC	IIWBR, Karnal, Haryana	87.67	155	40.3	37.9	53.62
	CZ	Irrigated, Timely sown	2018	CVRC	IIWBR, Karnal, Haryana	80.70	113	46.0	42.9	67.44
	NWPZ	Irrigated, Timely sown	2018	CVRC	IIWBR, Karnal, Haryana		124	44.0		52.94
DWRB 182	NWPZ	Irrigated, Timely sown	2020	CVRC	IIWBR, Karnal, Haryana	90	133	44.0	49.7	74.50

F. No. CPS 18-1/2021-NFSM (FTS-96792)

Government of India
Ministry of Agriculture & Farmers Welfare
Department of Agriculture & Farmers Welfare
(Crops & PHMF Division, NFSM Cell)

Krishi Bhawan, New Delhi

Dated: 2nd June, 2022

To,

- | | |
|--|---|
| 1. The Director
ICAR- Indian Institute of Pulses Research, Kanpur
(Uttar Pradesh) | 4. The Director
ICAR- Indian Institute of Maize Research,
PAU, Ludhiana (Punjab) |
| 2. The Director
ICAR- Indian Institute of Millets Research,
Hyderabad (Andhra Pradesh) | 5. Project Coordinator
ICAR- All India Coordinated Research Project
Small Millets Bengaluru (Karnataka) |
| 3. The Director
ICAR- Indian Institute of Wheat & Barley
Research, Karnal (Haryana) | 6. Project Coordinator
ICAR- All India Coordinated Research Project
Pearl Millet, Jodhpur (Rajasthan) |

Sir/Madam,

Subject: Administrative Approval for organization of Front Line Demonstrations on Pulses, Coarse cereals and Nutri-Cereals during the year 2022-23-reg.

I am directed to convey that the competent authority of this Department has approved an outlay of **Rs. 244.20 lakh (Rupees two hundred forty-four lakh and twenty thousand only)** for organization of FLDs of Barley, Pulses, Maize & Nutri-Cereals (Sorghum, Pearl Millet and Small Millets) during 2022-23. The crop specific details of FLDs for 2022-23 are given as under:

S. No	Nodal Agency for Implementation of FLDs	Name of crop	Approved No. of FLDs (in ha.)	Rate of financial assistance (Rs/ha)	Approved Financial allocation (Rs. In lakh)
1	ICAR-IIW & BR, Karnal	Barley	140	6000	8.40
2	ICAR-IIPR, Kanpur	Pulses	1620	9000	145.80
3	ICAR-IIMR, Ludhiana	Maize	300	6000	18.00
4	ICAR-AICRP on Small Millets Bengaluru	Small millet	300	6000	36.00*
5	ICAR-AICRP on Pearl Millet	Pearl millet	400	6000	24.00
6	ICAR-IIMR, Hyderabad	Sorghum	200	6000	12.00
Grand Total			2960		244.20

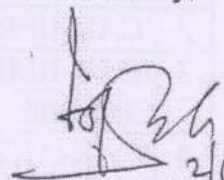
* Including committed liability of Rs.18.00 lakh of previous years.

Contd... /-

The above approval is subject to the following conditions:

- Each implementing agency will constitute monitoring team with involvement of officials of Crop Development Directorates, DA&FW, State Department of Agriculture and Scientists of ICAR/SAUs.
- The varieties which are within 3 years either of own production or SAUs sources be used (5 years for problematic areas viz; hills, Saline, Alkaline Soils etc.) period from the date of notification/release/identification should only be included in the demonstration purpose and those varieties in the border lines should be avoided.
- Under FLDs, full package kit like seed, INM, IPM material should be given to farmers at the time of sowing.
- All the FLDs should be conducted under the close supervision of SAUs/KVKs/ICAR institute.
- Farmers practice, crop production and protection technologies used in FLDs should be obtained in the progress report. The reasons for yield gap between FLDs and farmers' practice should be mentioned in progress report.
- No chemical fertilizer is allowed as input under FLD programme, however, payment to various farm operations/farm services and other critical inputs (seed, bio-fertilizers, lime, gypsum and micronutrients etc.) are allowed. Farmers have to apply the recommended doses of fertilizers.
- Field days should be regularly organized and prior information should be sent to DA&FW and Director, ATARIs of ICAR.
- The details of FLD beneficiary-farmers along with contact number should also be furnished to DA &FW.
- **All implementing Institutes should ensure to organize at least 10% of the FLDs or as per availability of seeds on bio-fortified variety of pulses/nutri-cereals and Coarse Cereals in the districts with high burden of malnutrition.**
- 5% of FLD on pulses and Nutri cum coarse Cereals shall be conducted in North-Eastern States.
- More focus should be given to extra and early maturing varieties of Pigeonpea and Lentil than other pulses crop.
- All implementing agencies and their coordinating centres should involve agronomist/plant breeder to finalize technologies to be demonstrated in FLD programme and follow up visits to demonstration sites.
- The FLDs implementing agency will re-allocate the number of FLDs as per approval and intimate to DA&FW.
- Critical input amounting to Rs. 8100/- out of Rs. 9000/- for Pulses Rs. 5100/- out of Rs. 6000/- for Barley, Maize & Nutri-Cereals (Sorghum, Pearl Millet and Small Millets) should be provided to beneficiary farmers.
- Each implementing agency will send technical programme and progress report of FLDs of Pulses, Barley, Maize & Nutri-Cereals (Sorghum, Pearl Millet and Small Millets) in formats (already circulated) to DPD, Bhopal and DMD, Jaipur respectively on quarterly basis.
- Geo-tagging of all FLDs is compulsory which is to be conducted during 2022-23 by each centre of FLD. The software information would be shared with each centre.
- In eastern region, FLDs should focus on technologies in weed management aspects.

Yours faithfully,


(Dr. A. P. Singh) 2/6/22

Additional Commissioner (Crops)

Copy to:

1. ADG (FFC)/ADG (O&P), ICAR, Krishi Bhawan, New Delhi.
2. Director, Directorate of Pulses, Bhopal/Millets, Jaipur.
3. Under Secretary (Finance)/(CA-V), DA&FW, Krishi Bhawan, New Delhi.
4. PPS to Agriculture Commissioner (DA&FW), Krishi Bhawan, New Delhi
5. PPS to JS (Crops & Oilseeds)/ADC (Crops), Krishi Bhawan, New Delhi.
6. AC (Pulses)/AC (Crops)/AD (Crops), DA&FW, Krishi Bhawan, New Delhi.
7. Programmer (NFSM), DA&FW, Krishi Bhawan, New Delhi for uploading in website.

Copy for information to: PPS to DG, ICAR, Krishi Bhawan/DDG (Extn.) ICAR, KAB-I, New Delhi.

GUIDELINES FOR FRONT LINE DEMONSTRATIONS UNDER NFSM

Front Line Demonstrations (FLDs) is a unique approach to provide a direct interface between researcher and farmers as the scientists are directly involved in planning, execution and monitoring of the demonstrations for the technologies developed by them and get direct feedback from the farmers' field about the crops like wheat, rice, maize, barley and nutri-cereals, etc., pulses production in general and technology being demonstrated in particular. This enables the scientists to improvise upon the research programme accordingly. In FLDs, the subject matter scientists provide technological inputs to extension scientists to organize the demonstrations. Thus, FLDs provide an opportunity to researchers and extension personnel for understanding the farmer's resources and requirement to fine tune and/or modify the technologies for easy adaptability at farmers' fields.

The FLDs for Rice, Wheat, Barley, Pulses, Maize and Nutri-Cereals (Sorghum, Pearl Millet and Small Millets) are approved component of National Food Security Mission (NFSM). The FLDs are conducted by the ICAR/SAUs system. The ICAR Institutes i.e. Indian Institute of Rice Research, Hyderabad, AP; Indian Institute of Wheat & Barley Research, Karnal; Indian Institute of Pulses Research, Kanpur; Indian Institute of Maize Research, Ludhiana, Punjab; Indian Institute of Millets Research, Hyderabad, AP; AICRP on Small Millets, UAS, GKVK Campus, Bangalore, Karnataka and AICRP on Pearl Millet, Mandore, Jodhpur, Rajasthan for organizing the FLDs on Rice, Wheat & Barley, Pulses, Maize, Sorghum, Pearl Millet and Small Millets respectively.

1. FRONT LINE DEMONSTRATIONS (FLDs)

Frontline Demonstration is a form of applied research through ICAR/SAUs system on latest notified/released varieties along with full package of practices on selected farmers' fields with a view to demonstrate the potentiality of the technologies to (a) participating farmers (b) neighboring farmers and other agencies; (c) to analyze the production and (d) performance of the technologies for scientific feedback.

2. OBJECTIVES

- To demonstrate improved Crop Production Technologies of Rice, Wheat, Barley, Pulses, Maize, Nutri-Cereals such as Pearl Millet, Sorghum and Small Millets, on the farmers' fields;
- To popularize the newly notified and improved varieties/technologies for varietal diversification and efficient management of resources.
- To bring synergy among planners, researchers, farmers and industry for parable interface through seminars/symposium on emerging themes of importance in the field of Rice, Wheat, Barley, Pulses, Maize, Nutri-Cereals such as Pearl Millet, Sorghum and Small Millets production for deciding strategies for development of these crops.

3. SELECTION OF TECHNOLOGY

The need and necessity of demonstration should invariably be based on the emerging issues. The DAC&FW will in advance communicate the desired technologies/thematic areas on which the FLDs to be conducted and the concerned ICAR institutes in consultation with SAUs and other stakeholders should develop a comprehensive plan for organizing the demonstrations.

There will be a Committee under chairmanship of Director of Research of concerned State Agriculture University which will decide the technology to be demonstrated. The other members of the committee will be Director of Extension, Joint Directors/Heads of Departments of Crop Production/Agronomy, Plant Breeding and Plant Pathology. The technology so decided should be discussed along with the results of the station trials in Annual Workshops and the technical programme should be finalized well in advance.

The Technology programme should take care of the availability of seed of improved varieties/hybrids, drought resistance varieties, resource conservation technologies, method of sowing, IPM, INM, micro irrigation, farm machines etc. to be demonstrated. The seed agencies and the manufacturers should also be taken on board for deciding the FLDs.

The varieties which are within 3 years (5 years for problem areas viz; Hills, Saline, Alkaline Soils etc.) period from the date of notification/release/identification' should only be included in the demonstration purpose and those varieties in the border lines should be avoided.

The details of the technical programme should be communicated by first week. of April for kharif crops and by first week of August for winter crops to Crops Division of DAC&FW to convey the administrative approvals. The plan of FLDs will be approved by a committee comprising of:

Agriculture Commissioner	Chairman
Joint Secretary (Crops)	Member
Additional Commissioner (Crops)	Member
Directors (IIWBR/DRR/IIPR/IIMR)	Member
Directors (DWD/DRD/DPD/DMD)	Member
Deputy Commissioner (Seeds)	Member
Deputy Commissioner (Machinery)	Member
Deputy Commissioner (Crops)	Member-Secretary

4. SELECTION OF SITE AND BENEFICIARY

- The site of demonstrations should be at a place easily accessible and at central point to attract large number of audience/farmers for more impact, easy monitoring and feedback.
- The technology selected for demonstration should be of paramount importance and preferably with a farmer.
- To create better and visible impact of a technology the demonstrations may be conducted in **cluster approach of at least 10.0 hectares**. One demonstration at individual farmer should never be less than 0.4 hectare and not exceeding to one hectare. Besides, technology demonstration in hilly and non-traditional areas of crops, each cluster should be up to 4.0 hectare depending upon the size of each Demonstration. However, one individual demonstration should never be less than 0.20 hectare.
- No local varieties/farm produced seeds under Frontline demonstrations should be used.
- Number of demonstrations of a particular variety and package of practices should be decided keeping in view the scientific requirement for reliability and validated of the results.
- Demonstrations may be conducted on farming situations for scientific interpretation. Participatory approach may be followed in conducting demonstrations associating (i) farm scientists (ii) extension workers and (iii) demonstrating farmers, so that we have effective implementation leading to better adoption and diffusion of technology.
- Other equal size plots of the demonstrating farmers or the equal size of plot of neighboring farmers in the same farming situation may be considered as check or control plots for objective comparison of the results.
- Selection of the site should be decided in consultation with Department of Agriculture of the concerned State and should be such that it is easily assessable to farmers of neighbouring villages and extension workers coming from different parts of the district. The demonstrating farmers should be progressive one with leadership quality and who is easily approachable by other farmers & extension workers.
- Special attention towards soil problems like acidity, alkalinity, micro-nutrients deficiency, soil borne pests and diseases should be tackled before taking up the Frontline demonstrations. Identify broad based farming situations and conduct only limited number of FLDs with more emphasis on the quality of FLDs implementation.
- Identification of FLDs beneficiaries shall be carried out by the Implementing Centres as per the requirement/aptitude of the farmers to conduct the demonstrations. Preference for FLDs should be given to the Socio-economically backward/Small and Marginal/ST/SC/OBC/ women farmers shall be given at the time of the identification of FLD beneficiaries.

5. SIZE OF FRONT LINE. DEMONSTRATIONS

- The size of one demonstration will be 0.40 hectare to one hectare depending upon the

Size of plot available with small and marginal/women farmers who will be given preference in the selection of beneficiaries.

- The assistance for demonstrations will be decided upon the area. The rate of assistance is Rs.9000/- for Rice, Wheat & Pulses and Rs.6000/- for Coarse Cereals (Maize & Barley) and Nutri-Cereals (Sorghum, Pearl Mints and Small Millets) per demonstration of one ha.

6. IMPLEMENTING AGENCY

- Frontline Demonstrations will be organized by ICAR Institutes through their Centers/Krishi Vigyan Kendras (KVKs under ICAR system) and State Agriculture Universities, reputed and registered NGOs.
- Indian Institute of Rice Research, Hyderabad, AP will be the nodal institute for organizing the FLDs on Rice; Indian Institute of Wheat & Barley Research, Karnal for Wheat & Barley; Indian Institute of Pulses Research, Kanpur for Pulses; Indian Institute of Maize Research, Ludhiana, Punjab for Maize; Indian Institute of Millets Research, Hyderabad, AP for Sorghum; AICRP on Small Millets, UAS, GKVK Campus, Bangalore, Karnataka for Small Millets and AICRP on Pearl Millets, Mandore, Jodhpur, Rajasthan for Pearl Millet.

7. PLANNING FOR THE DEMONSTRATION

- A local survey may be conducted to (a) ascertaining the socio-economic conditions of the farmers; (b) farming situations under which the crop is grown; and (c) the existing level of adoption of technologies and the productivity. This will serve as a broad benchmark for future planning demonstrations work and evaluation.
- Agro-economic constraint analysis should be done of the representative farmers sample to identify the critical factors/inputs for the adoption of technologies by the farmers require support for such inputs.
- Advance planning may be done for the demonstration so that all the critical inputs are arranged in time.
- Orientation training may be organized for half a day for all the participating persons about all aspects of technologies and methodologies including aims and objectives of the demonstrations so that there is uniform clarity of purpose for better working relating and linkages.

8. APPROVAL OF TECHNICAL PROGRAMME

- The details of physical and financial targets (Agency-wise and location-wise) for laying out the FLDs on Kharif crops to be organized by participating centers may be

Communicated to the Crops Division of Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Delhi latest by 30th April and by 30th August for Rabi crops.

- The in-principle approval for conduct of FLDs will be communicated to the concerned ICAR institutes in April for all the crops by the Department to facilitate them to arrange the required inputs and also the selection of beneficiary farmers.

9. IMPLEMENTATION

- Prior to the launching of the demonstrations, all participating agencies/persons may be informed well in advance about the date and venue (demonstrating farmers on the demonstration and are invited to participate). On occasion, the neighboring farmers may also be invited. They should be educated about the details of the technologies and objectives of the FLDs. Sowing of the crops, may be done in the presence of participating persons.
- All the important farm operations may be carried out by the demonstrating farmers under the close supervision and guidance of the Scientist-in-Charge of FLDs. The concerned scientist(s) may record observations of all important events so that the results could be interpreted.
- When the demonstrations plot is at maturity, the field day may be organized where neighboring farmers including farm women and extension workers are invited. A question-answer hour i.e buzz session (between the scientists, farmers and extension workers) may be organized.
- The information pertaining to different technological interventions adopted at Check plot and FLD plot must record to evaluate the technological gap.
- The concerned scientist is expected to keep records of various expenses incurred on various inputs used for the demonstrations plot(s) and check plot(s) for deriving cost benefits..
- After harvesting and threshing the yield (grain & straw/stalk etc.) may be recorded for demonstration plot and check plot.

10. MONITORING

- Monitoring is required on continuous and regular basis through visits to FLDs plots, recording observations, getting the feedback from the farmers and extension workers.
- The Scientist-in-Charge of the FLDs in SAUs and ICAR Institute should ensure to make regular visits of the demonstration plot to have proper feedback on the impact of the technology.

- Monitoring teams comprising of Senior Scientists/Officers of the ICAR system/SAUs, Ministry of Agriculture and the State Department will make visits to such demonstration plots for getting direct feedback and offering suggestions and guidance.
- The Committee comprising of scientist of the University, concerned Project Director/Coordinator, ADG (FFC), ICAR, Additional Commissioner (Crops) and Director, Directorate of Rice, Wheat, Millets and Pulses Development as representative from the Department of Agriculture, Cooperation & Farmers Welfare, M/o Agriculture & Farmers Welfare, Government of India. The Committee will review the progress of FLDs periodically at least twice during the crop season. The periodical progress report will be submitted by ICAR to the Ministry.
- The results and feedback as obtained by the monitoring teams/others should be compiled by the Concerned Crop Development Directorates to be submitted to Agriculture Commissioner. The reports on physical and financial progress will be submitted directly to Agriculture Commissioner of this Department with a copy to the Director, Directorate of Rice, Wheat, Millets and Pulses Development, Patna, Ghaziabad, Jaipur and Bhopal regularly by 10th of every subsequent month.
- It is also requested to kindly arrange to introduce a more effective system to develop closer coordination between State functionaries of various input units/other State Officials, extension unit of State Agricultural Universities and Panchayati Raj Institutions in implementing of the Programme. Details of such coordination exercise/meeting should include in the periodic physical report.

11. REPORTING AND DOCUMENTATION

- The results of the demonstrations may be properly documented, reported and circulated among all the concerned personnel of the State Department of Agriculture, demonstrating farmers etc.
- A success story may be published in popular extension journals (widely circulated in the state) for the benefits of other farmers preferably in local languages.
- Full report of FLDs so conducted by ICAR/SAUs be sent to Ministry of Agriculture & Farmers Welfare, Department of Agriculture, Cooperation & Farmers Welfare by Project Directorate/Coordinator well before the Annual Workshop and is also presented in the Workshop.

12. FUNDING PATTERN

- Frontline Demonstrations on the basis of above guidelines would be conducted in Different Eco-system through Crop Directorate/Coordinating Unit of Indian Council of Agricultural Research/State Agricultural Universities in the potential areas of the country.

The funds for the demonstrations so organized by the ICAR/SAUs would be provided by the Government of India from the funds available in National Food Security Mission. For such demonstrations, funds shall be provided directly to the concerned Director/Project Director and the pattern of assistance would be Rs.9000 for Rice, Wheat & Pulses and Rs.6000 for Barley, Maize & Nutri-Cereals (Sorghum, Pearl Millet and Small Millets) per demonstration of one hectare or actual of the cost, whichever is less. The item-wise detailed break-up of the expenditure for organizing a Frontline Demonstration in one hectare of rice, wheat, pulses, maize, Barley and Nutri-Cereals is given as under:

S.N.	Component	Amount (Rs.)			Maize, Barley & Nutri-Cereals (Sorghum, Pearl Millet & Small Millets)
		Rice	Wheat	Pulses	
1	Cost of critical inputs (seeds/ biofertilizers/PP chemicals/ herbicides) to supplement the cultivation charges	8100	8100	8100	5100
2.	Organization of Field Day	250	250	250	250
3.	Display board and publicity material (posters/pamphlets/ leaflets etc.)	250	250	250	250
4.	visit of scientists excluding TA/DA, but hiring of Taxi/POL etc.	300*	300*	300*	300*
	Contingencies/typing of results/ minutes etc.	100	100	100	100
	Total	9000	9000	9000	6000

* Nodal FLD implementing Institute/Directorate may retain 50 percent of the amount for effective monitoring of FLDs across the country.

- Funds earmarked for FLDs may be made available to the concerned SAUs/Scientist well before the start of the sowing season by concerned Directorate/Project Directorate of ICAR.
- FLD on newly released varieties should include the package of improved production technologies. The expenditure in excess of the approved norm per hectare if any, should be incurred by the beneficiary-farmer. Therefore, for the FLDs only those farmers who are willing to provide critical resources should be identified.
- In order to monitor the programme, the following information may be furnished by concerned Director/Project Director to the concerned Crop Development Directorate under intimation to Crops Division of Department of Agriculture, Cooperation & Farmers Welfare:

Rice		
Sl. No.	Activity Milestone	Scheduled date for submission of reports
1.	Name and full addresses of the selected farmers, varieties used, area sown under the Demonstration and Technology demonstrated	Kharif - 15 th July, Rabi - 15 th November
2.	Crop stand and appropriate date for visit by the FLD monitoring team	Kharif - 15 th September Rabi - 15 th December
3.	Tentative dates for organization of Farmer's Day.	Kharif - 30 th September Rabi - 25 th February
4.	Report and complete data about FLDs conducted	Kharif - 15 th December Rabi - 15 th May
Wheat & Barley		
1.	Name and full addresses of the selected farmers, varieties used, area sown under the Demonstration and Technology demonstrated	15 th December
2.	Crop stand and appropriate date for visit by the FLD monitoring team	15 th January
3.	Organization of Farmer's Day	30 th January
4.	Report and complete data about FLDs conducted	15 th May
Pulses, Maize & Nutri-Cereals (Sorghum, Pearl Millet & Small Millets) Kharif		
1.	Name and full addresses of the selected farmers, varieties used, area sown under the Demonstration and Technology demonstrated	Kharif - 15 th July,
2.	Crop stand and appropriate date for visit by the FLD monitoring team	Kharif - 15 th September
3.	Tentative dates for organization of Farmer's Day	Kharif - 30 th September
4.	Report and complete data about FLDs conducted	Kharif - 15 th December
Pulses-Rabi		
1.	Name and full addresses of the selected farmers, varieties used, area sown under the Demonstration and Technology demonstrated	15 th December
2.	Crop stand and appropriate date for visit by the monitoring team	15 th January
3.	Organization of Farmer's Day	30 th January
4.	Report and complete data about FLDs conducted	15 th May

(Signature)
24/5/18

ANNEXURE-I

DETAILED INFORMATION OF INDIVIDUAL FRONT LINE DEMONSTRATION (FLD)

Detail of beneficiaries of FLDs during Kharif/Rabi/Summer of Year _____

- (1) Name & Complete address of the Implementing Centre:-
- (2) Website/E-mail ID :
- (3) Fax No.
- (4) Name of Crop
- (5) Name of Variety/hybrid
- (6) Location
- (7) District
- (8) State

S.N.	Name of beneficiary with address and Phone number	Category (SC/ST/OBC/Gen) & Gender (Male/Female)	Area of FLD (ha)	Pattern of Financial Assistance								Technology demonstrated	Field day/ Kishan Goshthi	Follow visits of Scientist
				Seed		Bio-fertilizer		Micro-nutrients		Weedicides/ pesticides				
				Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value			

Signature of Beneficiary

Signature with Seal
Scientist in Charge
Implementing Centre

Signature with Seal
Director/Project Coordinator

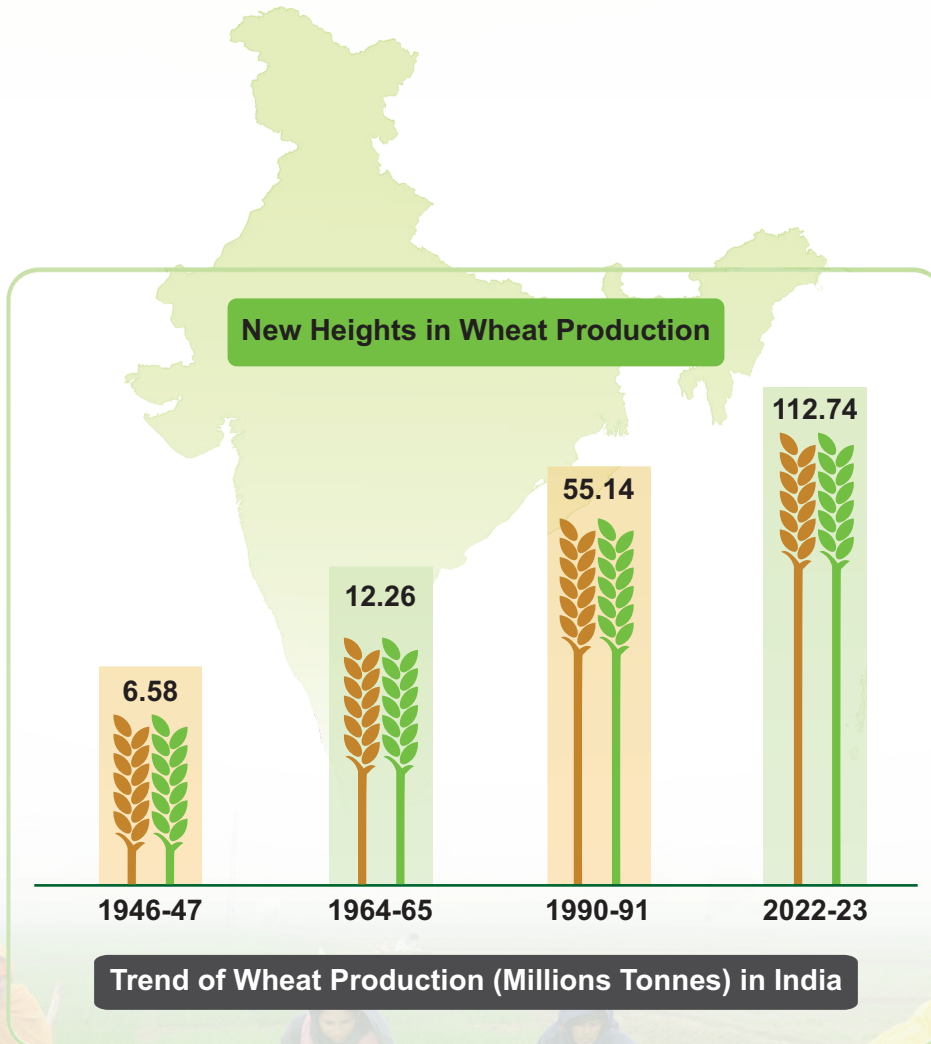
ANNEXURE-II

Monthly/Quarterly/Final physical and financial progress report of FLDs during Kharif/Rabi/Summer of Year _____

- (1) Name & Complete Address of the Implementing Centre :
- (2) Website/E-mail ID :
- (3) Fax No. :
- (4) Name of Crop :

No	Physical				Financial (Rs.)			
	Allocation		Achievement		Allocation	Achievement		
	No. of FLDs	Area under FLDs	Number of FLDs	Area under FLDs				
Men								
SC								
ST								
OBC								
Gen								
Women								
SC								
ST								
OBC								
Gen.								
Total								

Signature with Seal
Director/Project Coordinator



62वीं अखिल भारतीय गेहूँ एवं जौ अनुसंधान कार्यकर्ता गोष्ठी
महाराणा प्रताप कृषि एवं प्रौद्योगिकी विश्वविद्यालय, उदयपुर, राजस्थान

(अगस्त 28-30, 2023)

62nd All India Wheat and Barley Research Worker's Meet-2023
Maharana Pratap University of Agriculture and Technology (MPUAT), Udaipur, Rajasthan

(August 28-30, 2023)