

## ADOPTION AND TECHNOLOGICAL GAP ON SMALL AND LARGE HOLDINGS AND CONSTRAINTS ENCOUNTERED IN JAMMU REGION

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It is after two successive years of high record, the total food grains of the country production has slid to dismal 196.13 million tonnes in 2000-2001. It is about 16 million tonnes short of the targeted 212 million tonnes for the year. The production level in the previous year (1999-2000) was 208.87 million tonnes, which was the highest achieved ever. However, the low production has not upset the food grains reserve in the country. On the contrary, the country accounted for the highest buffer stock in recent times. The year witnessed the paradox of "grain mountains and starving million" which was a grim reminder of the lack of proper distribution system in the country.

India is probably one of the few countries in the world where nearly 90 percent areas sown to wheat have some access to irrigation. This, therefore, has permitted us to attain a national average productivity of wheat of roughly 3.1 tonnes/hectare assured irrigation, long growing period and cooler environment favour wheat cultivation in the NW India between late October till mid April. Nearly 10 million hectares is under wheat in the NWPZ and 92 percent of the area is irrigated, excepting this small marginal areas in the district of Hoshiaspur, Ropar and in parts of southern Haryana. Average productivity in this zone is almost 4 tonnes per hectare and therefore is able to produce more than 14 million tonnes of surplus grain utilized for value addition trades.

Growth rate analysis of wheat production in Jammu and Kashmir in the 1995-96, 1996-97, 1997-98, 1998-99, 1999-2000, 2000-2001

and 2001-2002 has been under 246.88, 244.67, 242.66, 245.75, 280.96 and 259.60 (000hect.area) having yield of 16.71, 16.20, 15.18, 15.16, 17.67, 15.29 and 13.21 qtl/ha respectively.

The above data reveals that there has been a decrease in the area covered under the crop as also a trend of reduction in the yield. The present study therefore, aims to providing better information for finding out the factors responsible for decreasing area, low quantity and quality production of wheat. It suggests a plan of action for stopping the decline and thus increasing the production of wheat. In view of the importance of wheat production in region the present study entitled "A study on technological Gap on Constraints of wheat productively on the farms in Jammu Region" has been planned with the following objectives-

1. To study the extent of adoption and technological gap in wheat production on the farms under study.
2. To study the constraints/factors responsible for lower level of wheat production.

### METHODOLOGY

The study was conducted in six block (two block from each district) of Jammu, Kathua and Udhampur districts of Jammu region. 12 villages of the three blocks (two villages from each block) were selected randomly. 300 farmers were selected consisting 25 respondents from each village through random

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sampling method. The data was collected with the help of well-structured interview schedule by personal approach. The data thus collected were classified, tabulated and analysed and results are accordingly elaborated under result and discussion head.

## RESULTS AND DISCUSSION

The important outcomes of the study are being presented in tables 1, 2 & 3.

Table 1 clearly reveals that majority i.e. 56.67 percent and 57.34 percent respondents of small and large farmers have adopted seed

technology to high extent where as, 23.33 percent small farmers and 24.66 percent large farmers have adopted the same to low extent. Only 20.00 percent small farmers and 18.00 percent large farmers have adopted the technology to medium extent. Regarding irrigation technology majority i.e. 54.00 percent small and 59.34 percent large respondents in both categories have adopted to high extent followed by 24.67 and 21.33 percent to medium level and 21.33 percent and 19.33 percent to low level of adoption.

**Table 1. Overall extent of adoption of different technologies by the small and large farmers**

S. No.	Technologies	SMALL FARMERS (N=150)						LARGE FARMERS (N=150)					
		High Adoption		Medium Adoption		Low Adoption		High Adoption		Medium Adoption		Low Adoption	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1.	Soil Technology	64	42.67	27	18.00	59	39.33	67	44.67	41	27.33	42	28.00
2.	Seed Technology	85	56.67	30	20.00	35	23.33	86	57.34	27	18.00	37	24.66
3.	Fertilizer Technology	58	38.67	38	25.33	54	36.00	66	44.00	29	19.33	55	36.67
4.	Irrigation Technology	81	54.00	37	24.67	32	21.33	89	59.34	32	21.33	29	19.33
5.	Weeding Technology	34	22.66	18	12.00	98	65.34	36	24.00	29	19.33	85	56.67
6.	Plant Protection Technology	26	17.33	38	25.33	86	57.34	31	20.66	48	32.00	71	47.34

Regarding weeding technology majority i.e. 65.34 percent large farmers and 56.67 percent small farmers have adopted to low extent, where as, 22.66 percent small farmers and 24.00 percent large farmers have adopted the same to high extent. Only 12.00 percent small farmers and 19.33 percent large farmers have adopted the technology to medium extent. Majority i.e. 57.34 percent respondents of small farmers have low extent of adoption. In case of plant protection technology 17.33 percent small farmers to low extent followed by 25.33 percent to medium extent and 17.33 percent to high extent of adoption, whereas, in case of large farmers 47.34 percent have low extent of adoption followed by 32.00 percent to medium extent and 20.66 percent to high extent of adoptions.

Thus from the above discussion, it may be

concluded that majority of the farmers in both categories have high level of adoption of seed and irrigation technology while in reverse weeding technology and plant protection technology are the two very important technologies which have been adopted to low extent by majority of respondents.

Table 2 clearly reveals that in case of soil technology 40.00 percent respondents of small farmers have the lowest gap i.e. in the range of upto 33 percent followed by 20.00 percent in the range of 33 percent to 66 percent and 40.00 percent respondents have the existing gap in the range of 60 percent to 100 percent whereas, in case of large farmers 36.00 percent respondents have the lowest gap i.e. in the range of upto 33 percent followed by 24.66 percent in the range of 33 percent to 66 percent and 39.34 percent respondents have



the existing gap in the range of 66 percent to 100 percent. Regarding seed technology 26.00 percent respondents of small farmers have the lowest gap i.e. in the range of upto 33 percent followed by 36.00 percent respondents having the existing gap in the range of 33 percent to 66 percent and 38.00 percent respondents having the existing gap in the range of 66

percent to 100 percent whereas, in case of large farmers majority i.e. 58.67 percent respondents have the lowest gap i.e. in the range of upto 33 percent followed by 22.00 percent respondents having existing gap in the range of 33 percent to 66 percent and 19.33 percent respondents having the existing gap in the range of 66 percent to 100 percent.

**Table 2. Overall Technological gap with regard to different technologies by the small and large farmers**

S. No.	Technologies	SMALL FARMERS (N=150)						LARGE FARMERS (N=150)					
		High Adoption		Medium Adoption		Low Adoption		High Adoption		Medium Adoption		Low Adoption	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1.	Soil Technology	60	40.00	30	20.00	60	40.00	54	36.00	37	24.66	59	39.34
2.	Seed Technology	39	26.00	54	36.00	57	38.00	88	58.67	33	22.00	29	19.33
3.	Fertilizer Technology	46	30.66	55	36.67	49	32.67	63	42.00	52	34.67	35	23.33
4.	Irrigation Technology	63	42.00	40	26.66	47	31.34	76	50.67	38	25.33	36	24.00
5.	Weeding Technology	30	20.00	58	38.66	62	41.34	33	22.00	63	42.00	54	36.00
6.	Plant Protection Technology	16	10.66	24	16.00	110	73.34	20	13.33	36	24.00	94	62.67

Table further reveals that regarding fertilizer technology 30.66 percent small farmers have the lowest gap i.e. in the range of upto 33 percent followed by 36.67 percent respondents having existing gap in the range of 33 percent to 66 percent and 32.67 percent respondents having existing gap in the range of 66 percent to 100 percent whereas, in case of large farmers 42.00 percent respondents have the lowest gap upto 33 percent followed by 34.67 percent respondents having existing gap in the range of 33 percent to 66 percent and 23.33 percent respondents having existing gap in the range of 66 percent to 100 percent. Regarding irrigation technology 42.00 percent respondents have the lowest gap i.e. upto 33 percent followed by 26.66 percent respondents having the existing gap in the range of 33 percent to 66 percent and 31.34 percent respondents having existing gap in the range of 66 percent to 100 percent whereas, in case of large farmers majority i.e. 50.67 percent respondents have the lowest gap i.e. upto 33 percent followed by 25.33 percent respondents having existing gap in the range of 33 percent

to 66 percent and 24.00 percent respondents having existing gap in the range of 66 percent to 100 percent.

Table also reveals that in case of weeding technology 20.00 percent small farmers have the lowest gap i.e. upto 33 percent followed by 38.66 percent respondents having the existing gap in the range of 33 percent to 100 percent and 41.34 percent respondents having the existing gap in the range of 66 percent to 100 percent whereas, in case of large farmers 22.00 percent respondents have the lowest gap i.e. upto 33 percent followed by 42.00 percent respondents having the existing gap in the range of 33 percent to 66 percent and 36.00 percent respondents having existing gap in the range of 66 percent to 100 percent. Regarding plant protection technology 10.66 percent respondents have the lowest gap i.e. upto 33 percent followed by 16.00 percent respondents having the existing gap in the range of 33 percent to 66 percent and majority i.e. 73.34 percent respondents having the existing gap in the range of 66 percent to 100 percent whereas, in case of large farmers 13.33



percent respondents have the lowest gap i.e. upto 33 percent followed by 24.00 percent respondents in the range of 33 percent to 66 percent and majority i.e. 62.67 percent having the existing gap in the range of 66 percent to 100 percent.

Thus from the above discussion it may be

concluded that in spite of the best effort by the Private, Government, Non-Government Institutions, Organization and Agencies the plant protection technology and its proper application still needs utmost attention on the part of Subject Matter Specialists and Extension Personnel involved at grass root levels.

**Table 3. Main constraints as perceived by the respondents regarding different technologies by the small and large farmers**

S. No.	Technologies	SMALL FARMERS (N=150)						LARGE FARMERS (N=150)					
		Bio-Physical		Socio-economic		Situational/Operational		Bio-Physical		Socio-economic		Situational/Operational	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1.	Soil Technology	85	56.66	80	53.33	83	55.33	73	48.66	86	57.33	74	49.33
2.	Seed Technology	101	67.33	82	54.66	73	48.66	87	58.00	57	38.00	66	44.00
3.	Fertilizer Technology	89	59.33	76	50.66	69	46.00	82	54.66	58	38.66	72	48.00
4.	Irrigation Technology	90	60.00	78	52.00	89	59.33	68	45.33	89	59.33	71	47.33
5.	Weeding Technology	93	62.00	83	55.33	71	47.33	82	54.66	74	49.33	71	47.33
6.	Plant Protection Technology	98	65.33	82	54.66	75	50.60	85	56.66	74	49.33	76	50s.66

Note : More than one constraint has been experienced by the respondents hence total percentage exceeds to 100.

Table 3 clearly reveals that in case of small farmers majority i.e. 56.66 percent, respondents have experienced the problems of soil technology under bio-physical constraints followed by 55.33 percent respondents have experienced the problems of soil technology under situational/operational constraints and 53.33 percent respondents have experienced the problems of soil technology under socio-economic constraints where as, in case of large farmers majority i.e. 57.33 percent respondents have experienced the problems of soil technology under socio-economic constraints. Majority i.e. 67.33 percent and 54.66 percent small farmers have experienced the problem of seed technology under bio-physical and socio-economic constraints whereas, in case of large farmers majority i.e. 58.00 percent respondents have experienced the problem of seed technology under bio-physical constraints. Majority i.e. 59.33 percent small farmers and 54.66 percent large farmers have experienced the problems of fertilizer technology under bio-physical constraints.

Majority i.e. 60.00 percent, 59.33, percent and 52.00 percent small farmers have experienced the problems of irrigation technology under bio-physical, situational/ operational and socio-economic constraints, whereas in case of large farmers majority i.e. 59.33 percent respondents have experienced the problems of irrigation technology under socio-economic constraints. Majority i.e. 62.00 percent and 55.33 percent small farmers have experienced the problems of weeding technology under bio-physical and socio-economic constraints where as, in case of large farmers majority i.e. 54.66 percent respondents have experienced the problems of weeding technology under bio-physical constraints. Majority i.e. 65.33 percent and 54.66 percent small farmers have experienced the problems of plant protection technology under bio-physical and socio-economic constraints whereas, in case of large farmers majority i.e. 56.66 percent respondents have experienced the problem of plant protection technology under bio-physical constraints.



Thus from the above discussion, it may be concluded that the prominent constraints experienced by the small and large farmers regarding different technologies were plant Protection, seed, weeding and irrigation technology under bio-physical and socio-economic constraints.

## CONCLUSION

It can be concluded from the above study that majority of the farmers in both categories have high level of adoption of seed and irrigation technology while, in reverse weeding technology and plant protection technology are

the two very important technologies which have been adopted to low extent by majority of respondents. In spite of the best efforts by the Private, Government, Non-Government Institutions, Organisation and Agencies, the plant protection technology and its proper application still needs utmost attention on the part of Subject Matter Specialist and Extension Personnel involved at grass root level. The prominent constraints experienced by the small and large farmers regarding different technologies were plant protection, seed, weeding and irrigation technology under bio-physical and socio-economic constraints.

## REFERENCES

1. Chauhan, Raman 2001. A study of the adoption of wheat technology by the small farmers in C.D. Block, Bichpuri, district Agra, M.Sc. Ag. thesis. Dr. B.R. Ambedkar University, Agra.
2. Panghal, J.S., Grewal, R.S., Mehar Chand 1994. Constraints in the adoption of recommended practices in wheat production under Training and visit system. International Journal of Tropical Agriculture 12 (1-2), pp. 77-82.
3. Shafiq. M., Bashir Ahmad. 2001. Constraints of wheat crop production under rainfed areas; an analysis. Sarhad Journal of Agriculture. 2001, 17(2), pp 263-270.
4. Singh, Than., 2001. A study of adoption and communication behaviour of small farmers with special reference to wheat technology in Agra district of Uttar Pradesh. Ph.D. thesis Unpublished, Dr. B.R. Ambedkar University, Agra.
5. Prased, M.S., Sundaraswamy, B., Ansari, M.R. 2000. Extent of Adoption of dryland agricultural technologies, Karnataka Journal of Agricultural Sciencies. 2000, 13 (4) pp 1029-1032.

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