CONSOLIDATED REPORT
(2012-14)

INTEGRATED PRODUCTIVITY MANAGEMENT OF COTTON-WHEAT CROPPING SYSTEM IN PUNJAB

REVIVING GREEN REVOLUTION

SIR RATAN TATA TRUST

REVIVING GREEN REVOLUTION CELL

COMMUNICATION CENTRE BUILDING
Punjab Agricultural University, Ludhiana-141004

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"Integrated Productivity Management of Cotton-Wheat Cropping System in Punjab"

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FOREWORD

Cotton is an important *kharif* crop of the South Western districts of Punjab. The whole farm economy of that region is dependent upon cultivation of cotton. The emergence of new pests viz. American bollworm in 90's, Cotton Leaf Curl Virus in late 2000's and Mealy Bug in early part of 21st century continued to cause setback to economy of cotton growers. The chemical control of the pests not only increased the cost of production but also failed to control these pests causing huge losses in cotton production. To contain these problems, Punjab Agricultural University developed Cotton-Integrated Pest Management (IPM) technology that involved the adoption of holistic approach with an aim to revive cotton cultivation. But the State Department of Agriculture (Doa) and the Punjab Agricultural University (PAU), Ludhiana both having responsibility of transferring technology could not do much with their limited technical human and financial resources. Moreover the demonstration of the benefits of the IPM technology required an out of the box approach by conducting village level demonstrations and engagement of village youth for regular field surveys and feed back to the project monitoring units. Under these circumstances Sir Ratan Tata Trust took the initiative to work in partnership with State Department of Agriculture to disseminate and popularize cotton-IPM technology among cotton growers of Punjab. The project initiated in few villages in 2005 through PAU, Ludhiana was upscaled during Phase–II from 2005-2008 by the DoA and Phase-III for adoption in 300 villages each during 2009, 2010, 2011 by RGR Cell in partnership with DoA. The project till 2012 covered 1292 villages in nine South Western districts of Punjab. The Cotton growers were provided with technology on complete package of practices with special emphasis on judicious and need-based application of pesticides. An integrated approach deploying cultural, mechanical, biological and chemical measures was adopted to ensure effective control of pests with minimum use of pesticides. It was successful adoption of this approach for revival of cotton cultivation that the entire cotton-wheat cropping system was adopted to further increase the income of farmers. The current report describes experiences gained through validation phase of the adoption of IPM in cotton-wheat cropping system in a clustering mode adopting four cluster of 25 villages each to cover 100 villages during 2012 & 2013. The report highlights the activities undertaken during this period and describes the overall impact and experiences gained through validation phase of the Integrated Productivity Management Approach in Cotton-Wheat Cropping System in clustering mode during. It is satisfying to note that the cotton farmers in adopted villages got higher returns with less application of inputs and reduced cost of cultivation in Cotton-Wheat Cropping System.

The financial support provided by Sir Ratan Tata Trust and Navajbai Ratan Tata Trust is gratefully acknowledged. Special thanks are due to Mr. H.D. Malesra, Trustee, Navajbai Ratan Tata Trust, Mr. F.J. Gandavia & Mr Burzis Taraporevala, Secretary & Chief Accountant, and Mr. Arun Pandhi, Chief Development Manager, Sir Ratan Tata Trust, Mumbai for allocating funds. I owe special thanks to Dr. Mangal Singh Sandhu, Director of Agriculture, Punjab, Chandigarh, Dr. Tarsem Singh, Joint Director of Agriculture, Punjab for Matching Grant and support through staff. I am also thankful to Mr. J.S. Bains, Deputy Director, Agriculture (Cotton), Punjab, Chief Agriculture Officers, Agriculture Officers and Agriculture Development Officers of districts Mansa, Bathinda, Muktsar and Fazilka for extending necessary cooperation in implementing project. My special thanks are due to Dr. A.S. Sohi, Advisor (Agriculture), Dr. I.M. Chhibba, Consultant, RGR Cell and Mr. Baljinder Singh Saini, Assistant Development Manager (RGR) for their hard work put in successful implementation of the project. The guidance provided by Dr. A.S. Dhatt, Senior Advisor (Agriculture), SRTT in project implementation is fully acknowledged. The commendable work done by Field Officers and other field staff is also gratefully acknowledged.

July 30, 2014

(G.S. Chahal)
Executive Director

SUMMARY

Reviving Green Revolution Cell (Sir Ratan Tata Trust & Navajbai Ratan Tata Trust), Punjab Agricultural University (PAU) Ludhiana implemented the project "Integrated Productivity Management in Cotton Wheat Cropping System" in 100 villages across four districts of South-Western region of the state during 2013-14 with partnership of Department of Agriculture (DoA), Punjab. The project aimed at integrating gains of Cotton-IPM technology by Cotton-Wheat System, coupled with other resource conservation technologies to increase productivity by developing and validating cost effective module that can be adopted for long-term sustainability of existing Cropping System in the entire cotton belt of Punjab. After successfully transferring Cotton-IPM technology following 'Individual Village Approach (Scout model) in 900 villages from 2009- 2012, a need was felt to shift from individual village level (Scout model) approach to 'Cluster of villages' approach as a unit for demonstrating Integrated Productivity Management.

During the year 2013-14 under report, 100 hundred more villages were adopted making the total number villages as 1000 covered under this programme. A total number of 23,619 farming families were adopted in 100 villages cultivating 1,18,288 acres under cotton and 2,22,739 acres under wheat. Out of these, 68 per cent families belonged to general category, 15 per cent to scheduled caste and 17 per cent to backward class category. Before sowing each crop, the Cluster- incharges, Sub-Cluster Incharges and the volunteer farmers (erstwhile scouts as village level workers) were given 4 days trainings on Integrated Productivity Management in Cotton-Wheat Cropping System at PAU, Ludhiana. Apart from this training, three additional one day training progrmmes were organized for the field staff in each crop season i.e. in July, August and September during cotton season and in January, Februray and March during wheat season. Village Information Centers (VICs) were established in each village to exhibit charts, pamphlets and folders giving information on cotton and wheat production. Radio talks and TV programmes were also organized to disseminate appropriate technical information to larger number of farmers in the operational area for larger number of farmers. The project was guided and supervised by Advisor (Agriculture), Assistant Development Manager (RGR), a Consultant, Filed Officers and officials from Department of Agriculture, Punjab.

The Bt cotton hybrids with high yield potential and insect-pest tolerance recommended by PAU and DoA occupied 31 per cent area during the report year. The un-recommended Bt cotton hybrids (though high yielding yet susceptible to pests) were sown on 56 per cent area owing to the non-availability of adequate quanitity of the seed of the approved Bt hybrids with the suppliers at the right time. Besides, the crust formation in the fields caused by unexptected showers of rain after sowing cotton, forced the farmers to resow the crop twice or thrice in some villages and the concerned farmers could not afford to purchase the costly seed of recommended Bt hybrids. Resultantly, Bt cotton hybrids seed, purchased from unreliable sources, especially from Gujarat, occupied 13 per cent of area.

It is worth mentioning that quite a good number of farmers have started either omitting application of phosphatic fertilizer or reducing its quantity in cotton grown in fields where the preceeding wheat crop receives recommended dose of this fertilizer. Earlier the farmers were not

aware of the necessity of foliar application of potassium in cotton from flowering onwords but for the last two years farmers have started adopting this practice in increasing number.

Participatory farmers on an average carried out 5.5 insecticide sprays per acre in cotton compared to 6.4 by the non-participatory farmers showing 14.1 per cent decrease in insecticide use over non-participatory farmers, revealing thereby less expenditure by the participating farmers. Similar trend was observed during the year 2012-13. The average yield of cotton of participatory farmers in adopted villages varied from 6.3 to 6.5 q/acre with an overall average of 6.4 q /acre which was 10.3 per cent higher than that in the non-participatory farmers' fields. The average net return of participatory and non-participatory farmers was Rs. 15418/acre and Rs 11751/acre respectively, indicating thereby that the participatory farmers gained 23.78 % (Rs. 3667 per acre) higher profit than the non-participatory farmers. Nevertheless this profit was of the order of 35% during 2012-13. The additional seed cotton production to the tune of 70973 quintal (@ 0.6 q/acre), from 1,18,288 acres, that was sold on an average rate of Rs 4400/q, fetched increased profit to 23619 farmers adopted in the four districts of Malwa region to the tune of Rs. 31.22 crore. Increase in the seed cotton yield in the project area resulted in generating additional employment opportunities to the tune of 1,77,432 mandays for picking the increased production of 70,973 q @ 40 kg/day. As a result the additional labour employed for picking earned to the tune of Rs. 3.54 crores charging @ Rs. 500/q.

As far as wheat was concerned, the participatory farmers incurred 9.4% and 29.4% less expenditure on fertilizers and pesticides respectively compared to that incurred by the non-participatory farmers. Despite that, the participatory farmers obtained 1.6 q/acre higher wheat grain yield than the non-participatory farmers.

Looking at the overall impact of the Integrated Productivity Management, the participating farmers following the integrated approach in the Cotton-Wheat Cropping System earned a net gain of Rs. 6688/acre (Rs. 3667/acre in cotton and Rs. 3021/acre in wheat) and it was comparable with that (Rs. 6918/acre) of 2012-13.

1. INTRODUCTION

Continuation of Wheat-Paddy Cropping System over the last more than four decades has not only exhausted the soil and water resources in Punjab but also resulted in the environment pollution due to indiscriminate use of pesticides over larger area. Despite several efforts of the State Government to boost diversification, little had been achieved in shifting significant area from paddy to other crops. Tata Trusts[1] started the Reviving the Green Revolution (RGR) initiative in 2002 and to guide the initiative, the "Reviving Green Revolution" (RGR) Cell was established at PAU Campus in 2008.The Cell is the key agency partenering with State Department of Agriculture (DoA) and other agencies such as WWF, India to work towards sustainability of Cotton-Wheat Cropping System in Malwa region of Punjab. The area is important in terms of Cotton cultivation as the underground brackish water situation prevailing in the area fits well for the Cotton cultivation. The project is thus very important in terms of sustaining area under Cotton cultivation livelihoods of more than 2.5 million farming families across around 1400 villages of 8 districts.

Impact of Earlier Phases of IPM Project:

A beginning was made with Integrated Pest Management (IPM) demonstration in 2002 for sustaining cotton production. The task was daunting in the beginning as cotton crop faced successive failures due to intensive pest attack. The challenge was taken with confidence through the adoption of Package of Practices developed by the Punjab Agricultural University (PAU), Ludhiana. The technology demonstration was initiated from two villages in Mansa district and thereafter there was no looking back. The technology was demonstrated at mass level through support from SRTT in 56 villages during 2006-07, 112 villages during 2007-08 and 224 villages during 2008-09. In view of the success of the cotton IPM technology in reviving traditional cotton area, the RGR Cell with the support of Trusts and Department of Agriculture (DoA), Punjab, successfully completed another comprehensive project during the following three years i.e from 2009-13 to cover 700 villages with matching financial contribution of Trusts and DoA, Punjab.

It is a matter of record that the operation of this project in three phases i.e 2002-2005, 2005-2009 and 2009-2013, has resulted in substantial drop in use of pesticides leading to higher yield and economic returns to farmers.

[1] Sir Ratan Tata Trust & Navajbai Ratan Tata Trust, Mumbai

Integrated Productivity Management Approach (Current Phase):

It needs to be emphasized that the main thrust of the Trusts support during all earlier phases of RGR initiative has been on IPM in cotton with a purpose to revive the economical cultivation of this crop. But it is a hard fact that almost the entire area under cotton is used for cultivation of wheat under the prevalent cotton-wheat cropping system in the state. Though the adoption of IPM in cotton leads to a substantial increase in farmers' income, yet better management of the cotton-wheat sequence as an integrated system have potential to give still higher productivity and net income returns. As a matter of fact, wheat unlike cotton crop has no serious threat of insect-pests incidence but it is highly prone to diseases especially the rusts and sporadic attack of aphids and army worm besides being susceptible to nutritional deficiencies. A combination of practices including resistant varieties, seed treatment and timely detection of diseases and application of proper pesticides saves the crop from extensive damage. Moreover a proper combination of right type of varieties of both cotton and wheat, timely sowing, soil test-based fertilizer application and judicious use of pesticides can lead not only to increased productivity and income but also make this cropping system more sustainable under high productivity regime. The IPM module in cotton includes a complete *Package of Practices* for maximization of production whereas no such focused attempt has so far been made in case of wheat. Obviously, an integrated approach is required to increase productivity of cotton and wheat with efficient management of natural resources especially the sub-surface water and soil health for long-term sustainability and profitability of this cropping system.

Objectives: The project aimed at developing an economically viable model for transfer of technology with higher profit to farmers in cotton-wheat cropping system while sustaining productivity. The project envisages:

a. Development and validation of cost-effective module that can be adopted for long-term sustainability of productivity in the entire cotton growing belt of Punjab.

b. The integration of gains of IPM with other resource conservation technologies to increase productivity and sustainability of Cotton-Wheat Cropping System.

c. Demonstration of relevance and the potential of proposed model to DoA for provision of additional funds to realize the gains accrued from the village scout model approach.

2. STATE PROFILE

Punjab has 50.36 lakh hectare of land out of which, 83% (41.58 lakh hectare) is under cultivation having 190% cropping intensity (Fig. 1). Out of 98 per cent of the total irrigated cropped area i.e 40.73 lakh hectare, 11.15 lakh hectare is irrigated through canals and the remaining 29.58 lakhs hectare receive irrigation from tube wells.

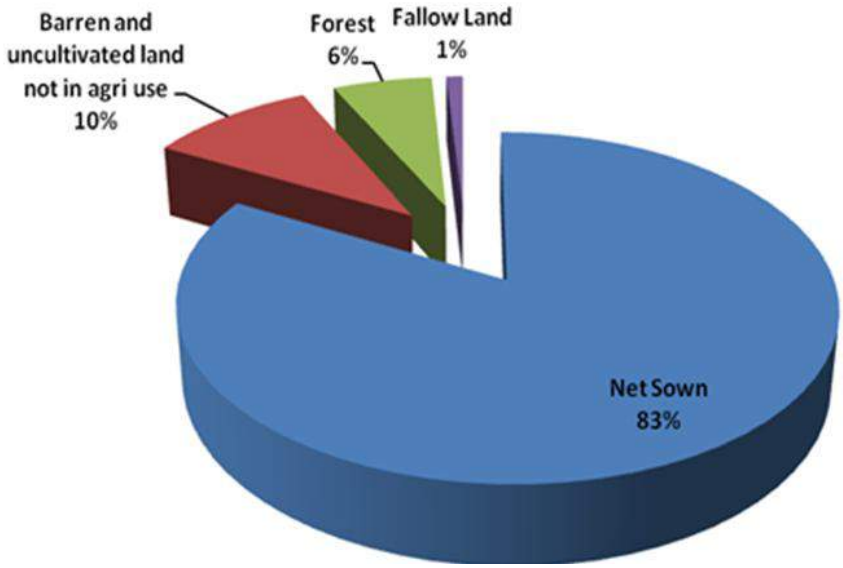


Fig 1: Agriculture land use pattern in Punjab

Just occupying 1.53 per cent of geographical area of the country, Punjab produces 22 per cent of wheat, 11 per cent of rice and ***12 per cent of cotton of the country's total***. The contribution of Punjab to the national food bowl may decrease with the passage of time because of fragmentation of land holdings with farming families. The number of large and small land holdings is declining and semi-medium and medium land holding is rising (Table 1). The task of agriculture technology transfer under this type of structure becomes arduous.

Table 1: Land holding of the farming families

Category of farmers based on holding	**Number (,000)**	**Area (,000)**
Marginal (less than 1 ha)	164 (15.5%)	101 (2.5%)
Small (1-2 ha)	196 (18.5%)	270 (6.7%)
Semi-medium (2-4 ha)	327 (31.0%)	862 (21.5%)
Medium (4-10 ha)	301 (28.4%)	1728 (43.3%)
Large (more than 10 ha)	70 (6.6%)	1035 (26.0%)
Total	**1058**	**3996**

For the quick adoption of new approved agriculture technologies, developed by research institutes, for enhancing productivity and raising economic benefits and bringing livelihood security to farming families, an efficient technology transfer mechanism needs to be in place. The DoA, Punjab, Krishi Vigyan Kendras (KVK) and Farmers' Advisory Service Scheme (FASS) of the Punjab Agricultural University (PAU) are jointly striving hard to perform the responsibility. But, these efforts are proving inadequate in the fast changing agriculture scenario and rapidly fragmenting farming families. Under the situation, The Trusts provided timely help in the form of extension staff and financial aid to hasten the process of transfer of agriculture technology.

2.1 Population Scenario

The Census done by Government of India in 2011 revealed that Punjab is thickly populated state having a total population of 277 lakh. The total literacy rate is 76.7 per cent with 81 per cent males and 71 per cent females. The sex ratio is skewed towards males as for every 1000 males the number of females is 893.

2.2 Cropping Patterns

Kharif and *Rabi* are the two main crop seasons in Punjab. In *kharif* rice, cotton and maize are major crops, grown on 28.45,4.81 and 1.29 lakh hectare respectively during 2012. Major crop of *Rabi i.e* wheat occupied 35.10 lakh hectare and minor crops like oil seeds were sown on 32,000 hectare during same year.

3. PROJECT AREA PROFILE

3.1 Land holding in adopted villages

The project is focusing more on marginal, small, semi-medium and medium farming families. In project villages, 43 per cent families fall in marginal and small category (<1 to 1-2 ha/family), 48 per cent in semi-medium to medium farmers category (2-4, 4-10 ha/family) and 9 per cent are having large holdings (>10ha/family) (Fig. 2, Annexure I).

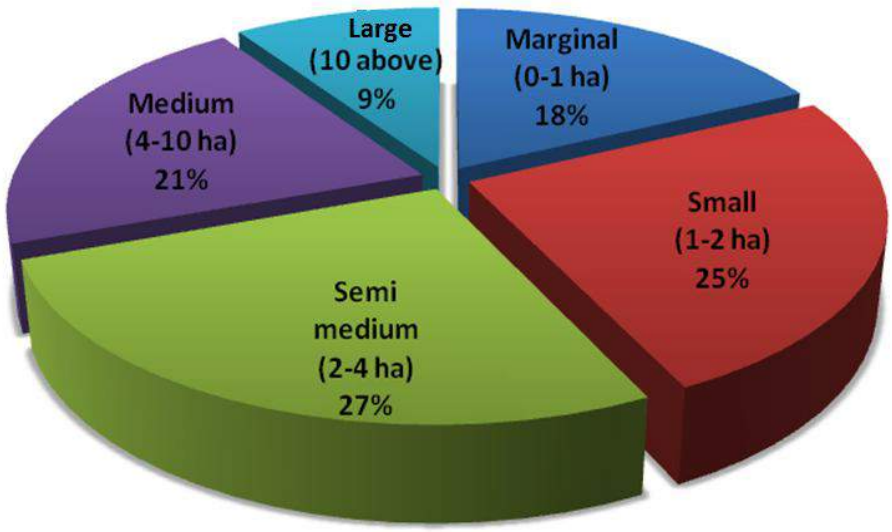


Fig 2: Classification based on the land holding size

3.2 Farming families covered in the adopted villages

During the year 2013-14, 23,619 farming families were adopted in 100 villages. Out of these, 68 per cent families belonged to general category, 15 per cent to scheduled caste and 17 per cent to backwards class category (Fig. 3, Annexure II).

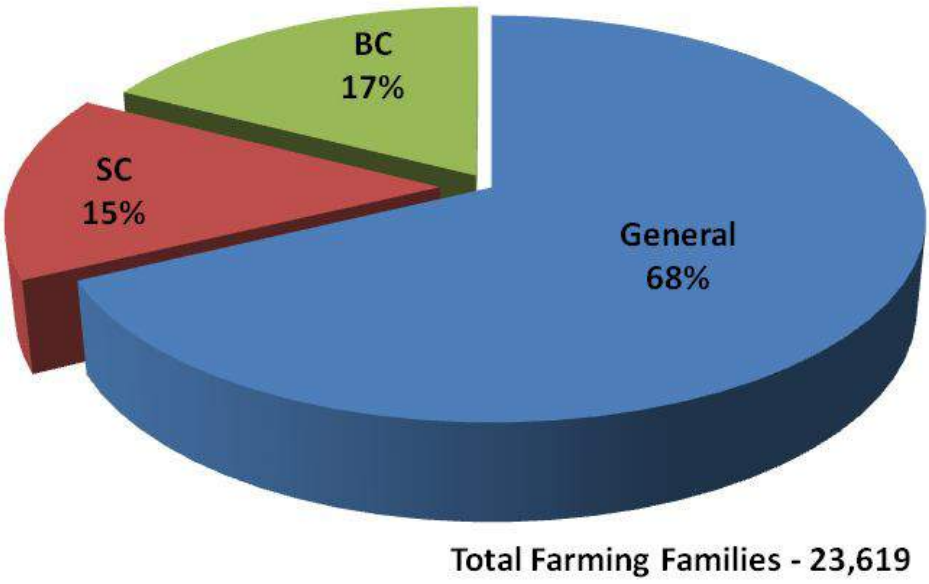


Fig 3: Caste-wise distribution of farming families

4. PART I : COTTON

4.1 Cotton Production

The area under cotton in the state has been fluctuating during the past one and a half decade. It was 7.01 lakh hectare in 1992-93 with production of 23.99 lakh bales. Thereafter, the area under cotton dropped to 5.63 lakh hectare during 1998-99 with a meager production of 15.0 lakh bales and a further low production of around 10 lakh bales was recorded during 2002. The farmers suffered serious setback due to squeezing profit margin owing to a decrease in yield and increase in cost of plant protection accompanied by perpetuating indebtedness to non-institutional agencies. The unfavourable biotic stresses aggravated the woes of the farming communities. In eighties, only pink bollworm, spotted bollworm and jassid were the major pests and whitefly was only a minor pest. During early nineties, American bollworm resurged as key pest on both American and *desi* cotton varieties. It continued to be one of the major causes of successive crop failure in Punjab. In 1995-96, cotton leaf curl viral disease vectored by whitefly became another major threat to cotton along with bollworms. The attack of tobacco caterpillar from 2002 onwards and epidemic of mealy bug in 2006-2007 also posed a serious threat to cotton cultivation.

With the adoption of IPM technology over larger area followed by introduction of pest tolerant and high yielding cotton hybrids during 2004 and 2005, the area under cotton began to rise. It rose to 6.07 lakh hectare with a production of 26.78 lakh bales in 2006 (Table 2). During 2007 area under cotton remained almost the same (6.04 lakh hectare) but declined to 5.35 lakh hectare in 2008. During 2009, the cotton was cultivated on 5.50 lakh hectare which was 2.8 per cent higher than the previous year. There was a drastic decrease in cotton area during 2008 (11.42 per cent)

and 2009 (8.1 per cent) compared to 2007 due to severe attack of hitherto unknown mealy bug. The adverse effect of mealy bug attack continued to percolate up to 2010. During 2011 and 2012, area under cotton again increased (Table 2) as the Mealy Bug was successfully managed by the farmers by adopting the IPM approach advocated jointly by PAU and DoA.

Table 2 : Area and production of cotton in Punjab

Year	Area (lakh ha)	Lint yield (kg/ha)	Production (lakh bales) Estimated: 1 Bale =170 Kg
2005-06	5.57	731	23.95
2006-07	6.07	750	26.78
2007-08	6.04	731	25.97
2008-09	5.35	737	23.19
2009-10	5.50	714	23.10
2010-11	4.83	641	18.22
2011-12	5.60	650	21.41
2012-13	5.16	675*	23.00*
*2013-14			

*****Estimates
(Source**:** Statistical Abstract of Punjab, 2013**)**

4.2 Project Activities

During the last phase (Phase III), a total of 300 villages were adopted every year for popularizing the IPM technology with main emphasis on the village. Since the start of this project more than 1100 villages have been covered by different implementing partners. After creating awareness about IPM among farmers, it was felt that next phase needed to be shifted from individual village approach to cluster of villages approach as a unit of demonstration and operation. Detailed activities are mentioned in Annexure II(a).

4.2.1 Formation of Clusters and Sub-clusters for implementing project programme

Each cluster consistsed of 25 villages as shown in (Table 3). Based on performance during previous three phases of the project implementation as villages approach model, one of the scouts from these villages was selected as Cluster Incharge with his village kept as Main Center of the cluster. Within each cluster, three Sub-clusters (each consisting of seven villages) were formed and each Sub-cluster was controlled by a Sub-cluster Incharge (SCI). The Cluster Incharge monitored the activities in four villages in addition to supervising the remaining 21 villages (Table 3). The Village Information Centers established in each village, were looked after by VLWs.

Main Village Information Centre (VIC) was established in one central village which was treated as a model village and maintained by a cluster incharge. The main centre was provided with all the necessary information on cotton-wheat production and protection technology with emphasis on recommended package of new technologies for maximization of productivity and its sustainability. Wall paintings were done in all 100 villages with 10-12 slogans pasted at appropriate places in each village with maximum visibility. These slogans consisted of key interventions related to cotton and wheat cultivation.

Wall painting in Madrasa village, Muktsar district

Table 3. Number of villages adopted in different clusters

Sr. No.	District(s)	Cluster	Number of Villages
1	Fazilka	Khuian Sarwar	25
2	Bathinda	Maur	25
3	Mansa	Jhunir	25
4	Muktsar	Muktsar	25

The IPM cotton module and IPM wheat module as recommended by PAU Ludhiana in package of practices for *Kharif* & *Rabi* was followed. The adoption of recommended *Package of Practices* was ensured through field days at Cluster and Sub-cluster level. One field day in each crop season was organized at the cluster level. The information was also disseminated through published brouchers and pamphlets The field staff in each village collected the information on incidence of pests and diseases.

4.2.2 Field staff training

Advisor Agirculture, Assistant Development Manager (RGR), Consultants and Field Officers imparted training on cotton production technology to Cluster and Sub-Cluster incharges of Fazilka, Bathinda, Mansa and Muktsar districts during March, April and June at the offices of Chief Agriculture Officers (CAO) / Block Agriculture Officers (BAO)/PAU Ludhiana (Table 4).

Table 4: Training of Cluster, Sub-Cluster incharges and volunteer scouts

District	Training Venue	Date	No. of trainees
Fazilka	Punjab Agricultural University, Ludhiana	March 26 - 28, 2013	04
	Office of Agriculture Officer, Abohar	April 06, 2013	23
	Office of Agriculture Officer, Abohar	June 2, 2013	24
Bathinda	Punjab Agricultural University, Ludhiana	March 26 - 28, 2013	04
	Office of Chief Agriculture Officer, Bathinda	April 04, 2013	23
	Office of Chief Agriculture Officer, Bathinda	June 20, 2013	24
Mansa	Punjab Agricultural University, Ludhiana	March 26 - 28, 2013	04
	Office of Chief Agriculture Officer, Mansa	April 03, 2013	25
	Office of Agriculture Officer, Jhunir	June 18, 2013	25
Muktsar	Punjab Agricultural University, Ludhiana	March 26 - 28, 2013	04
	Office of Chief Agriculture Officer, Muktsar	April 03, 2013	25
	Office of Chief Agriculture Officer, Muktsar	June 19, 2013	24
		Total	**209**

Scouts undergoing training at PAU, Ludhiana (September 2013)

4.2.3 Farmers Training Camps

During the crop season, 4 Cluster level farmers' training camps (1 in each Cluster) and 12 Sub-Cluster level camps (3 in each Sub-Cluster) were organized jointly by RGR Cell and DOA in addition to 316 village level farmers meetings (Table 5). During these camps, the farmers were equipped with knowledge on productivity management of Cotton and Wheat with optimum sowing time, seed rate, rational & balanced use of fertilizers and efficient management of weeds, diseases and insect-pests.

Farmers field visit to demonstration plot in Mansa

Table 5: Farmers' meetings/trainings organized in different Clusters

Sr No.	District (Cluster)	No. of Cluster level camps	No. of farmers trained	No. of Sub-Cluster level camps	No. of farmers trained	No of farmer meetings	No. of farmers trained
1	Fazilka (Khuian Sarvar)	1	110	3	245	74	2255
2	Bathinda (Maur)	1	125	3	250	67	2154
3	Mansa (Jhunir)	1	270	3	325	85	2547
4	Muktsar (Muktsar)	1	127	3	300	90	2655
	Total	**4**	**632**	**12**	**1120**	**316**	**9611**

A radio talk was conducted from All India Radio, Bathinda on July 22, 2013 providing advisory on cotton and a T.V. programme was broadcasted from Jalandhar Doordarshan on November 14, 2013 to dissemnate information to large number farmers on wheat cultivation.

Jalandhar Doordarshan team shooting Wheat cultivation programme for RGR (November 2013)

4.2.4. Soil and water testing drive

In order to ensure balanced and judicious use of fertilizers, it is vital to know available nutrient status of a soil before sowing the crop. Soil testing is the only tool to have such information. As a consequence of motivation by the field staff working with RGR Cell, 20 farmers belonging to 10 villages collected 40 soil samples from their respective fields and got them tested during *Kharif* season. The analytical results (Table 6) revealed that the pH of the soils in general fluctuated between 8.1 to 8.7 except 5 fields where it ranged from 8.7 to 8.9. The soluble salt content of the soils (Electrical conductivity) was quite within the safe limit of less than 0.8 mmhos/cm and it exceeded that in 6 fields only. Organic carbon content of the soils was low i.e. less than 0.40% in about 25% of the soil samples and the rest of the samples had medium content of organic carbon. With respect to nutrient status, the results indicated that leaving aside 25% of the samples which had low to medium content of available phosphorus, the soils had high availability of this nutrient i.e. ranging between 9 to 20 kg/acre. Available potassium content of all the samples fell with in the sufficient range. All the fields, except two, were found to have adequate supply of available zinc. All the concerned farmers were helped in interpreting the soil test reports and deciding the type and knowing of fertilizers required to be applied for profitable crop production in their fields.

Table 6: Analytical results of the tested soil samples (40 samples)

S.No.	Particulars	Content	Remarks
1.	Soil texture	Sandy loam to loam	---
2.	pH	8.1-8.9	Only 5 fields had pH slightly higher than safe limit of 8.7
3.	Electical Conductivity (mmhos/cm)	0.31-0.95	Soluble salt content was more than 0.80 (mmhos/cm) i.e. the safe limits in five fields
4.	Organic Carbon	0.27-0.78	25% of the samples had low and the remaining had medium content of Organic Carbon
5.	Available Phosphorus	2.6-28.0	Two samples tested low, 8 medium The remaining 30 samples high in available phosphorus content
6.	Available Potassium	145-360	Available potassium conent in all the field was within sufficient range
7.	Available zinc	0.44-4.04	All the tested samples had adequate content of available zinc except two which were deficient i.e. <0.60 kg/acre.

In the absence of soil test information, the farmers were advised to apply fertilizers in accordance with the general recommendations by the Punjab Agricultural University as shown in (Table 7).

Table 7 : Fertilizer recommended (kg/acre) for cotton and wheat in soils with medium fertility

Crop	Urea (46% N)	DAP (18% N 46% P)	OR	SSP (16% P)	MOP (60% K)	Zinc Sulphate	
						Heptahydrate (21% Zn)	Monohydrate (33% Zn)
Cotton	130	27		75	20	10	6.50
Wheat	110	55		155	20	-	-

In cotton it is important to carry out four sprays of 2 per cent solution (2 kg/100 litre water) of potassium nitrate (13:0:45) at weekly interval initiating at flowering stage.

4.3 Implementation by the farmers

4.3.1 Area under cotton in adopted villages

Survey of the adopted villages revealed that out of the net cultivated area of 2,55,573 acres, cotton was grown in 1,18,288 acres during 2013 and thus showed 11.25 % decline compared to 1,33,283 acres during 2012 in Clusters spread over 4 cotton growing districts (Table 8 & Annexure III). The area under cotton decreased due to shift of area under this crop to Cluster bean and rice. Decline in the area under cotton occurred due to shifting of some area to Cluster bean (guar), particularly in Khuian Sarvar Cluster of Fazilka and Maur Cluster of Bathinda district

as the latter fetched quite an attractive profit to the concerned farmers. However, the decline in the area under cotton was much less in Jhunir and Muktsar Clusters of districts Mansa & Muktsar respectively. So long paddy is not penetrating the area under cotton, the objective of crop diversification in Malwa belt would help even if guar replaces small area under its cultivation.

Table 8: District-wise area (acres) under cotton in villages adopted during 2013-14

Sr No.	District (Cluster)	Net cultivated Area (acre)	Area under cotton (acre)		% decrease over 2012
			2013	2012	
1	Fazilka (Khuian Sarvar)	108938	39201	49597	20.96
2	Bathinda (Maur)	50645	24768	27650	10.42
3	Mansa (Jhunir)	46752	33272	34507	3.58
4	Muktsar (Muktsar)	49238	21047	31312	2.24
	Total	**255573**	**118288**	**143066**	**11.25**

4.3.2 Pattern of adoption of different Bt cotton hybrids

The Bt cotton hybrids with high yield potential and insect-pest tolerance recommended by PAU and DoA occupied 31 per cent area. The un-recommended Bt cotton hybrids (though high yielding yet susceptible to pests) were sown on 56 per cent area. It was due to the reason that sufficient amount of seed of approved hybrids was not supplied in time to the farmers by seed suppliers. On account of untimely rains some farmers had to sow the crop twice and thrice and they could not afford the costly seed of recommended Bt hybrids. Bt cotton hybrids purchased from unreliable sources especially from Gujarat occupied 13 per cent of area (Fig 4, Annexure IV).

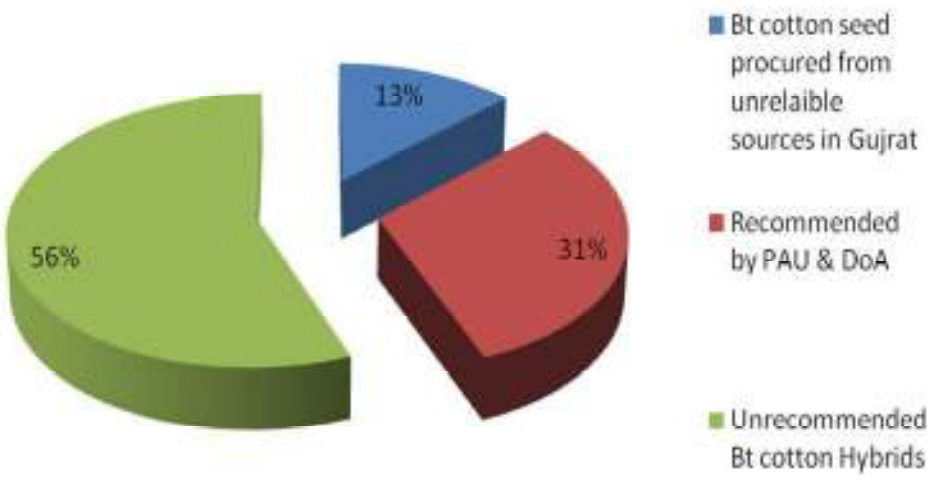


Fig 4: Pattern of adoption of different Bt cotton hybrids (%)

The recommended time of sowing cotton is 1st April to 15th May. Though the farmers make efforts to sow cotton within the recommended time, yet sometimes the sowing period extends up to June. This results from the delayed supply of canal water or re-sowing of crop caused by crust formation due to untimely rains or mortality of seedlings caused by burning by prevalence of high temperature during sowing period. During the year under report, 13 per cent of area was sown in April, 40 per cent in first fortnight of May, 37 per cent in second fortnight of May and 10 per cent in first fortnight of June. (Fig. 5, Annexure V).

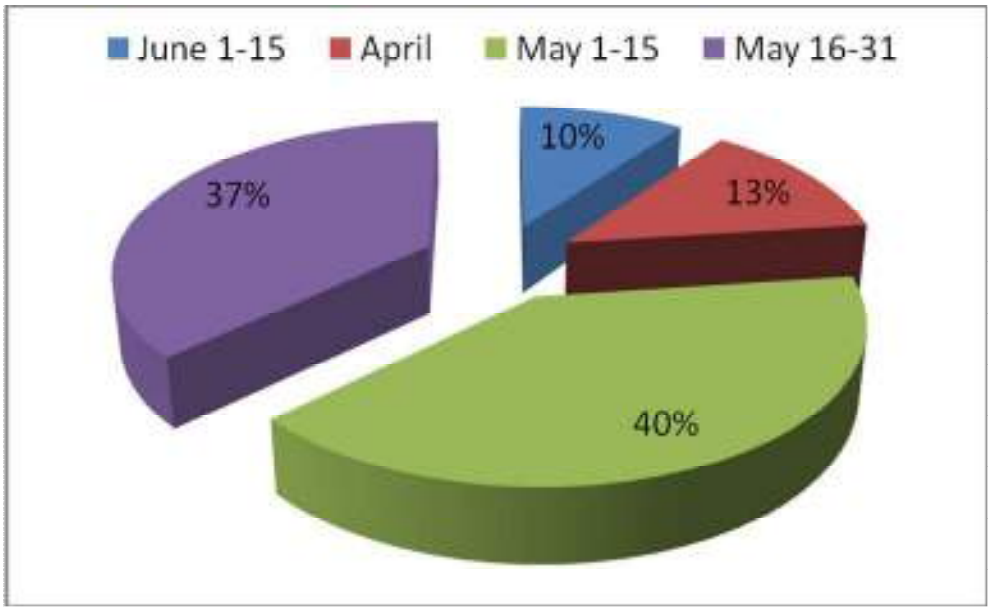


Fig 5: Cotton sowing time pattern

4.3.3 Sowing technique and Seed rate

The farmers were advised to avoid sowing Bt cotton hybrids in sandy and Submerged soils. Before sowing, farmers were suggested to give 1-2 deep (6"-9") ploughings with cultivators which ensures destruction of insects pupae in soil, ensures faster and proper development of tap root system in cotton and also helps delay time of first irrigation. It is recommended that first irrigation should be applied in cotton after 45 days of sowing. The farmers were advised to maintain row to row distance at 67.5 cm and plant to plant distance as 75-90 cm depending upon the variety / hybrid. In a few villages of Mansa district, farmers sowed the crop on ridges also.

The farmers, growing Bt cotton, in general used seed rate higher than that recommended i.e. 750 g/acre. Seed rate used by the farmers was about 900 g/acre in Khuian Sarvar and Maur Clusters of Fazilka and Bathinda districts respectively (Table 9). However in Jhunir Cluster of district Mansa, farmers used 960 g/acre whereas in Muktsar Cluster of district Muktsar, the seed rate used was 937 g/acre, obviously owing to the crust formation and/or burning due to high soil temperature.

Table 9: District-wise average seed rate (g/acre)

District	Cluster	Seed Rate (in g/acre)
Fazilka	Khuian Sarvar	901
Bathinda	Maur	900
Mansa	Jhunir	960
Muktsar	Muktsar	937

4.4 Fertilizers use

4.4.1. Soil application: The basal application of diammonium phosphate (DAP), muriate of potash (MOP) and zinc sulphate at sowing was carried out by 25.5, 24.0 and 20.6 per cent of farmers respectively in villages adopted in different districts (Fig 6, Annexure VI). The farmers were advised to apply DAP, MOP and zinc sulphate at the time of last ploughing of fields. The farmers who applied DAP to the preceding wheat crop were suggested to omit its application to the cotton crop.

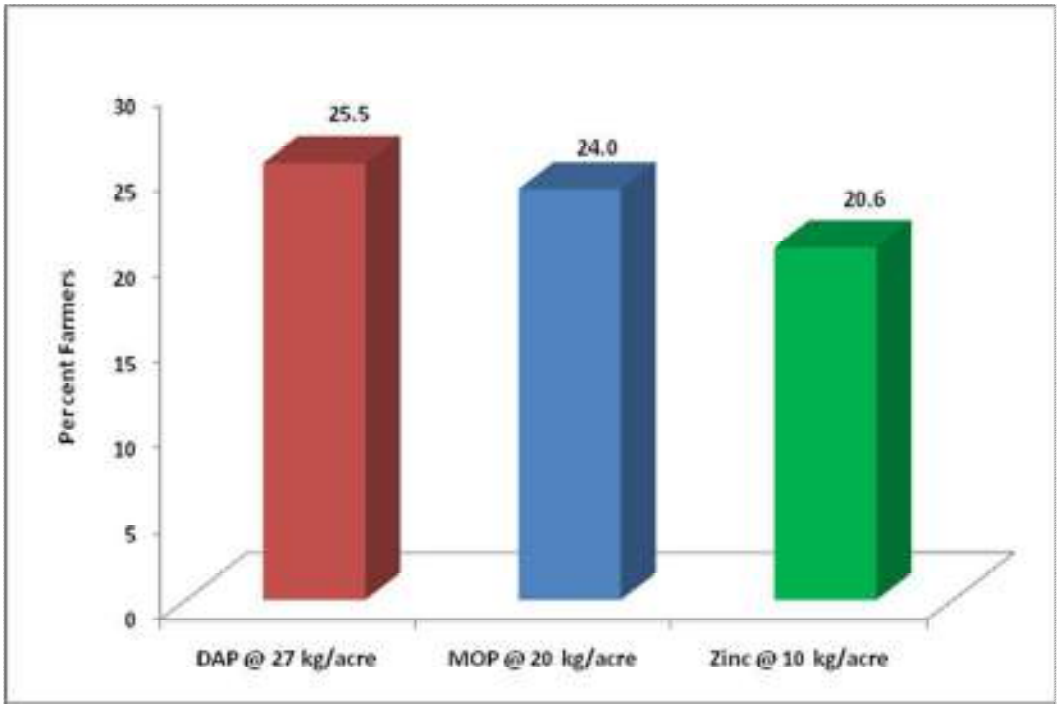


Fig 6: Soil application of fertilizers in different districts during 2013
(*Graph based on 23,619 farmers from adopted villages)*

4.4.2. Foliar application of potassium: Though the soil had adequate amount of available potassium yet to meet the increasing potassium demand of the crop during flowering and fruiting phases, the farmers were advised to carryout 3-4 sprays of 2 per cent solution of potassium nitrate (13:0:45) at weekly intervals initiating at flowering stage. Earlier the farmers did not supply potassium to the plant through foliar sprays but at present due to the regular advice extended by the RGR field staff, about 65-70% of farmers have adopted this practice.

4.5. Weed Management

The farmers managed weeds by hoeing and with weedicides. However, after 60-70 dayas after sowing the weeds were maanafged using Gramaxone (Paraquat) @ 500 ml / acre or Roundup (Glyphosate) @ 1000 ml/acre in standing cotton crop to control grassy and broad leaf weeds. As ascertained, none of the farmers carried out pre-emergence and post-emergence weedicides application to control weeds.

4.6 Irrigation Management

During its entire growth period, cotton requires 4-6 irrigations depending upon rain and availability of canal water. The irrigation of crop at 40-50 days after sowing is essential to obtain good yield. However, owing to the irregular supply of canal water and rains in the project area, the cotton growers are unable to limit the number of irrigation to the crop.

4.7 Insect-pest and disease management

4.7.1 Insect-pest surveillance and population record: Field staff monitored the selected farmers' fields at weekly interval and recorded the number of sucking insect-pests (Mealy bug, Jassid, Aphid and Whitefly), bollworms (American bollworm, Spotted bollworm, Tobacco caterpillar) and incidence of diseases from August to October. The whitefly adults were counted before 10 AM and jassid nymphs were counted from upper three fully opened leaves of randomly selected ten plants. The knapsack or tractor mounted sprayers fitted with hollow cone nozzles were used for insecticide sprays. The decision on insecticide spray was based on economic threshholds as given in Table 10.

Table 10: Economic threshold of different insect pests

Insect	Economic thresholds
Jassid	Yellowing and curling of the margins of the leaves on 50 per cent of plants
Whitefly	Six adults per leaf in the upper canopy or honey dew appearance on 50 per cent of plants
Aphid	Honey dew appearance on 50 per cent of plants
Mealy bug	Appearance of crawlers/mealy bug adults on cotton plant
Boll worms	5 per cent incidence of boll worms in freshly shedding fruiting bodies

The attack of the jassids was noticed from first week of August. Its average nymph number population ranged from 1.37 to 1.53 per leaf in participatory farmers' fields and from 1.68 to 2.05 per leaf in Non-participatory farmers' fields in different Cluster (Table 11a). In some Bt hybrids, which are relatively more susceptible to jassid attack, yellowing of leaf margins occurred even at low population of jassid nymphs. In such cases the concerned farmers were advised to carry out the required spray to check the damage. The number of whitefly adults varied from 3.12 to 3.80 per leaf in participatory farmers' fields and from 3.61 to 4.24 per leaf in non-participatory farmers' fields (Table 11a) and (Fig 7).

Table 11a: Monthly average population of sucking pests, natural enemies and Tobacco caterpillar during August, 2013

S. No.	District (Cluster)	Category of farmers	Jassids nymphs/ leaf	Whitefly adults/ leaf	Natural Enemies*/ plant
1.	Fazilka (Khuian Sarvar)	Participatory farmers	1.58	3.80	1.92
		Non-participatory farmers	1.87	4.24	1.51
2.	Bathinda (Maur)	Participatory farmers	1.53	3.26	1.89
		Non-participatory farmers	2.05	3.44	1.58
3.	Mansa (Jhunir)	Participatory farmers	1.53	3.53	1.79
		Non-participatory farmers	2.02	3.62	1.46
4.	Muktsar (Muktsar)	Participatory farmers	1.37	3.12	1.75
		Non-participatory farmers	1.68	3.61	1.41
	Average	**Participatory farmers**	**1.50**	**3.42**	**1.84**
		Non-participatory farmers	**1.91**	**3.73**	**1.49**

Observation recorded from 10 plants; Average of 30 leaves
* Natural enemies: Spiders, Green lace wing, Big eyed bug, Paedrus bug as dominating

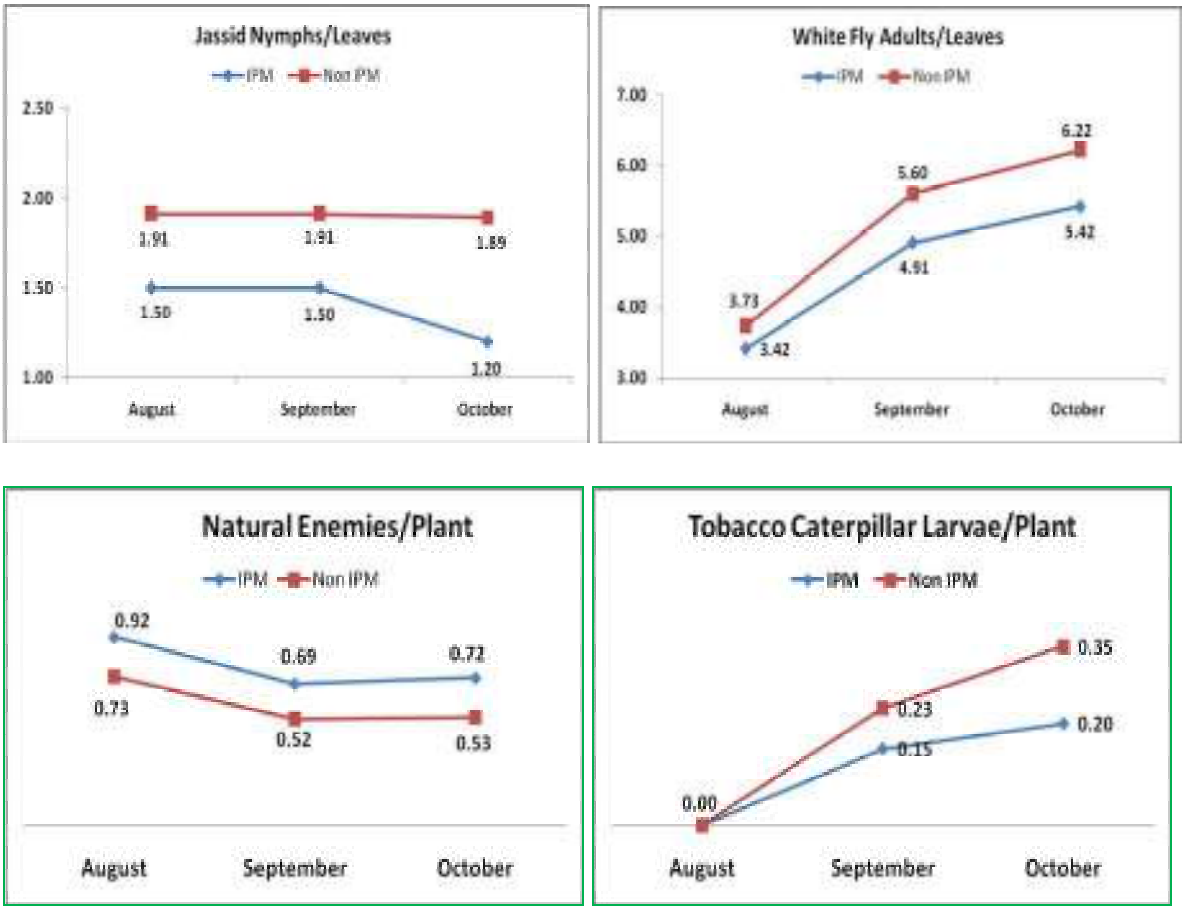


Fig 7: Average number of sucking pests, natural enemies and tobacco caterpillar

In September, average jassid nymphs count ranged from 1.22 to 1.86 per leaf in participatory and from 1.55 to 2.63/leaf in non-participatory farmers' fields (Table 11b). The number of whitefly adults varied from 4.13 to 5.27 in participatory and from 4.69 to 6.11 per leaf in non-participatory

farmers fields (Table 11b). In October, jassid population ranged from 0.49 to 1.93 in participatory and from 1.24 to 2.59 per leaf in non-participatory farmers' fields, whereas that of whitefly adults varied from 3.76 to 5.98 in participatory and from 4.74 to 7.12 per leaf in non-participatory farmers' fields (Table 11c).

Table 11b. Monthly average population of sucking insect-pests, natural enemies and Tobacco caterpillar during September, 2013

S. No.	District (Cluster)	Category of farmers	Jassids nymphs/ leaf	Whitefly adults/leaf	Natural Enemies*/ plant	Tobacco Caterillar Larvae/plant
1.	Fazilka (Khuian Sarvar)	Participatory	1.22	5.21	1.47	0.47
		Non-participatory	1.55	6.11	1.05	0.67
2.	Bathinda (Maur)	Participatory	1.86	5.04	1.45	0.00
		Non-participatory	2.63	5.98	1.23	0.00
3.	Mansa (Jhunir)	Participatory	1.69	5.27	1.35	0.00
		Non-participatory	1.84	5.61	1.06	0.00
4.	Muktsar (Muktsar)	Participatory	1.24	4.13	1.29	0.12
		Non-participatory	1.60	4.69	1.02	0.24
	Average	**Participatory**	**1.50**	**4.91**	**1.39**	**1.50**
		Non-participatory	**1.91**	**5.60**	**1.09**	**1.91**

Observations recorded from 10 plants
* Natural enemies; Spiders, Green lace wing, Big eyed bug, Paedrus bug as dominating

Table 11c: Monthly average population of sucking insect-pests, natural enemies and Tobacco caterpillar during first fortnight of October, 2013

S. No.	District (Cluster)	Category of farmers	Jassids nymphs/ leaf	Whitefly adults /leaf	Natural Enemies*/ plant	Tobacco Caterillar Larvae/plant
1.	Fazilka (Khuian Sarvar)	Participatory	1.93	5.98	1.48	0.49
		Non-participatory	2.59	7.12	0.99	0.88
2.	Bathinda (Maur)	participatory	0.69	5.88	1.42	0.00
		Non-participatory	1.54	6.50	0.92	0.00
3.	Mansa (Jhunir)	participatory	0.49	5.04	1.38	0.00
		Non-participatory	1.24	6.50	1.09	0.00
4.	Muktsar (Muktsar)	participatory	1.68	3.76	1.41	0.30
		Non-participatory	2.17	4.74	1.11	0.51
	Average	**Participatory**	**1.20**	**5.42**	**1.42**	**0.20**
		Non-participatory	**1.89**	**6.22**	**1.03**	**0.35**

Observations recorded from 10 plants
* Natural enemies (Spiders, Green lace wings, Big eyed bug, Paedrus bug as dominating)

The attack of Tobacco caterpillar remained very low as evident from data in tables 11b and 11c. In some cotton fields, situated in the vicinity of canal, the infestation of mealy bug was observed in few fields without any damage to the crop during October-November. The population of natural enemies remained low in both the participatory and non-participatory fields throughout the crop season as shown in tables 11a, 11b and 11c. An overall picture of the trend in the population of the sucking insect-pests, natural enemies and tobacco caterpillaras during August, September and October is depicted in Fig 7.

Mr. Arun Pandhi Chief Development Manager Sir Ratan Tata Trust reviewing the project (September 2013)

4.7.2 Mechanical Control of Tobacco Caterpillar

Attack of tobacco caterpillar was observed on Bt-cotton hybrids (Bollgard I) and on non-Bt varieties grown by the farmers in a few fields in Khuhian Sarvar block. The farmers were trained to indentify the presence of egg masses and small larvae of tobacco caterpillar in gregarious form. They were advised to pluck and collect the caterpillar infested leaves and destroy them. It saved many farmers from incurring expenditure on chemical for its control. However, when the infestation of the tobacco caterpillar got manifested because of the negligence of the farmers, the concerned farmers were advised to spray chlorpyriphos 20 EC /acephate 75 SP / novaluron 10 EC at the recommended dosages.

4.7.3 Chemical control of sucking insect-pests

Insecticides were selected and sprayed at recommended doses for the control of sucking insect-pests. Among the sucking insect-pests, jassid and white fly were the most serious on Bt cotton. The number of the whitefly adults remained high and it resulted in low to moderate level incidence of Cotton Leaf Curl Viral disease (CLCV). In Fazilka district, the infestation of whitefly was severe owing to sowing of the cotton in or near orchards which is contrary to the recommendation. High population of whitefly in these areas also resulted in blackening and development of sooty mould in cotton fields. The attack of mealy bug was low on the cotton crop. It might be due to high parasitization of mealy bug nymphs and adults by *Anaesius* sp. at many locations during June to August. The farmers managed mealy bug at early stage of crop growth also by controlling weeds growing along field bunds, water channels and in the nearby uncultivated sites with recommended weedicides and cultural methods.

On the basis of surveillance report of insect-pests and taking into consideration economic thresholds, farmers were advised to spray suitable chemicals at recommended rates as shown in Table 12.

Table 12: Insecticides recommended for the control of sucking insect-pests and caterpillars.

Insect-pests	Insecticide	Dose
Jassid	Imidacloprid 200 SL	40 ml/acre
	Thiomethoxam 25WG	40 g/acre
	Flonicamid 50 WG	80 g/acre
Whitefly	Triazophos 40 EC	600 ml/acre
	Ethion 50 EC	800 ml/acre
Mealy Bug	Profenophos 50 EC	500 ml/acre
	Acephate 75SP	800 g/acre
Tobacco Caterpillar and boll worms	Chlorpyriphos 20 EC	2000 ml/acre
	Novaluron 10EC	150 ml/acre
	Acephate 75SP	800 g/acre
	Chlorantra niliprole 18.5 SL	60 ml/acre
	Indoxacarb 15 EC	200 ml/acre
	Spinosad 48 SC	60 ml/acre

Despite the advice of the experts, some farmers indiscriminately sprayed unapproved mixtures of insecticides and approved insecticides at unrecommended doses. That practice leads to the resistance development in insects to insecticides, pollution of environment and destruction of natural enemies

4.7.4 Number of sprays

As shown in Figure 8, the participatory farmers on an average carried out 5.5 insecticides sprays compared to 6.4 by non-participatory farmers showing 14.1 per cent decrease in insecticide use over non-participatory farmers. Average number of sprays given by participatory farmers varied from 4.3 to 7.3 per acre in 100 villages adopted in the 4 districts.

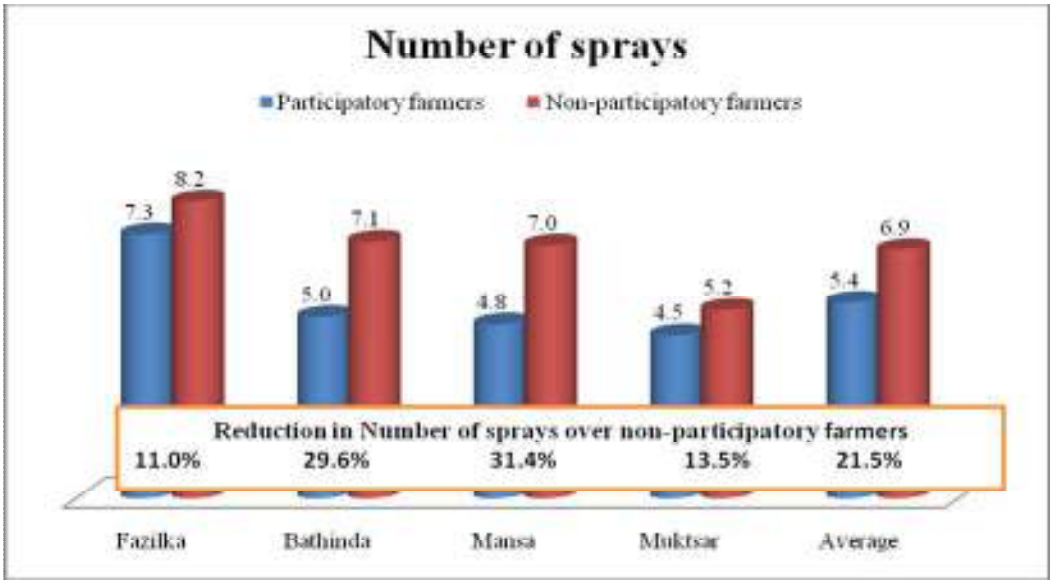


Fig 8: Number of insecticide sprays carried out by participatory and Non-participatory farmers

Decision on spray of insecticides against sucking insect-pests and leaf eating insects on cotton varied from village to village. It depended upon many factors such as early detection of pests, adoption of economic thresholds at right time, adoption of susceptible hybrids for sowing, availability of good quality insecticide, selection of right insecticide for spray at right dose and right time.

Though the number of sucking insect-pests (Jassid/ Whitefly) remained low throughout the crop season, yet the farmers carried out 1 to 2 sprays additionaly as in some of the Bt hybrids, symptoms of the damage by jassid (curling and yellowing along leaf margins) appeared even at low population. The number of whitefly adults remained high in Fazilka (Khuian Sarwar) and Muktsar Clusters due to sowing of Bt cotton in citrus orchards. In these Clusters farmers had to give more sprays of insecticides against whitefly adults. The whitefly adults vectored cotton leaf curl viral disease which adversely affected the crop yield. It indicated that these hybrids were more susceptible to whitefly. The number of sprays given by the participatory farmers to control sucking insect-pest was 4.6/ acre during 2013-14.Nevertheless, the participatory farmers performed significantly better than the non-participatory farmers as divulged by 4.6 sprays per acre by the former compared to 5.7 sprays per acre by the latter (Annexure VI(a).

The RGR Cell has also given SGP on standardization of different sprayers to Punjab Agricultural Unviersity, Ludhiana to work out appropriate sprayer and spray technology.

Cotton spray technology project with PAU being reviewed by RGR team in Mansa (August 2013)

4.8 Expenditure on various inputs

4.8.1 Seed and sowing

Seed and sowing cost includes cost of seed, field preparation, irrigation and labour charges. The average cost incurred on seed was Rs. 1.8/g for BG I and Rs. 2.2/g for BG II. The field

preparation cost included expenditure on ploughing, planking, sowing and labour hiring. Overall average cost on seed and field preparation incurred by participatory farmers and non-participatory farmers was Rs. 4480.0 and Rs. 4877.1 per acre respectively (Table 13a). The cost incurred on seed and field preparation was more than the cost of fertilizers, insecticide sprays and weed control. The participatory farmers incurred 8.1% less expenditure on seed and sowing compared to the non-participatory farmers. (Table 13a, Fig 9 & Annexure VII).

4.8.2 Fertilizers

Urea, Diammonium Phosphate (DAP), Muriate of Potash, Zinc Sulphate were applied at recommended doses and time of crop growth. Initiating at flowering stage, 3-4 foliar sprays of potassium nitrate were given at weekly intervals. The participatory farmers spent less on fertilizers than the non-participatory farmers due to the fact that participatory farmers applied recommended doses of fertilizers which was not followed by the non-participatory farmers. Overall average cost incurred on fertilizers by participatory farmers and non-participatory farmers was Rs 1886/- and Rs 2194/- per acre respectively (Table 13a, Fig 9 & Annexure VII) indicating thereby 14.0% less expenditure by the former.

Table 13a: Expenditure incurred on the inputs used for cotton production by participatory and non-participatory farmers during 2013

District/ Cluster	Farmers	Seed & sowing (Rs/acre)	Fertilizer (Rs/acre)	Insecticides & fungicides (Rs/acre)	Weedicides (Rs/acre)	Total Input (Rs/acre)
Abohar (Khuian Sarvar)	Participatory	4270.7	2295.4	2875.7	1961.5	11403.3
	Non-participatory	4495.6	2604.3	3418.1	2119.9	12637.9
Bhatinda (Maur)	Participatory	5076.5	1742.3	650	1190.1	8658.9
	Non-participatory	5764.9	1983.5	1724.3	1505.9	10978.6
Mansa (Jhunir)	Participatory	5146.5	1587.7	1384	1508.4	9626.6
	Non-participatory	5407.4	1834.7	1604.7	1694.5	10541.3
Muktsar (Mukatsar)	Participatory	3426.2	1920.2	807.1	1958.1	8111.6
	Non-participatory	3840.5	2354.4	1161.8	2313.2	9669.9
Overall Average	**Participatory**	**4480.0**	**1886.4**	**1429.2**	**1654.5**	**9450.1**
	Non-participatory	**4877.1**	**2194.2**	**1977.2**	**1908.4**	**10956.9**

Data from 1000 participatory farmers and 200 non-participatory farmers
Average seed cost: BG I–Rs. 1.8/g, BG II – Rs. 2.2/g ; Seed Rate varies from 900 to 960.2g/acre ;
Field Preparation expenses: 2-3 ploughings (tractor), planking and sowing-Rs 600-750/acre Labour charges Rs 200-250 per day.

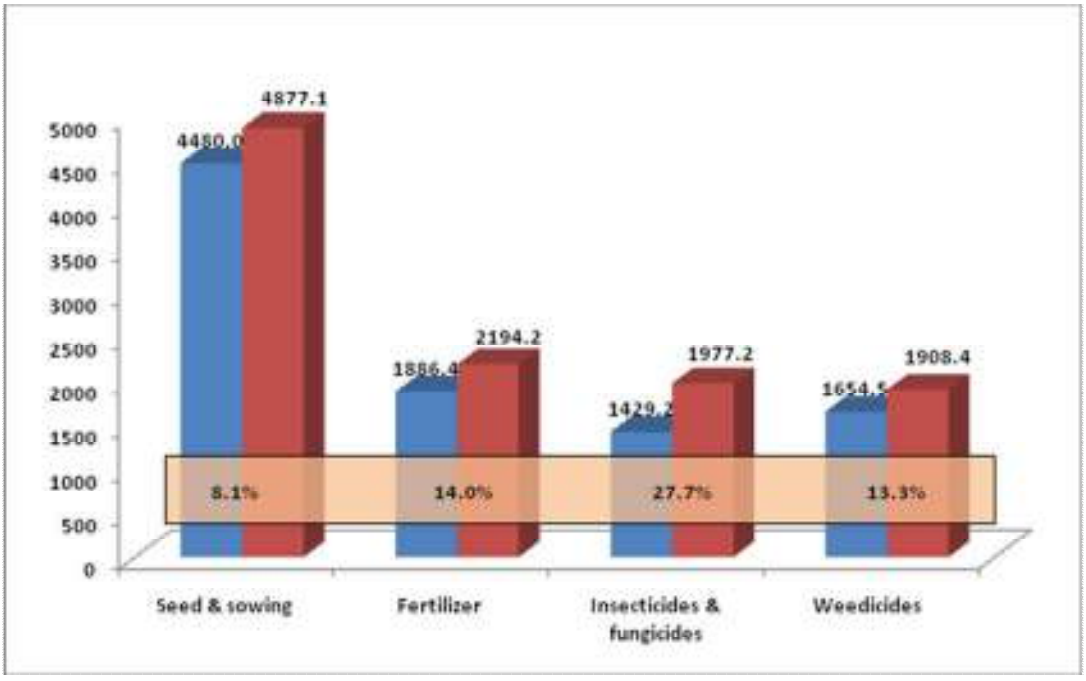


Fig 9: Reduction in expenditure on inputs

4.8.3 Weed management

Prevalence of weeds in cotton fields is one of the key causes of reduced crop yield. Weeds in the cotton crop were managed by hoeing manually or with tractor drawn cultivator at early stage of crop growth. A few farmers used weedicides for weed control. Rains during fruiting phase resulted in sudden increase in weed population in all Clusters. Overall average cost incurred on weed management showed that the participatory farmers incurred 13.3% less expenditure than the non-participatory farmers (Table 13a, Fig 9 & Annexure VII).

4.8.4 Pesticides (Insecticides and fungicides)

The adoption of recommended technology in the adopted villages resulted in significant reduction in spray cost. The cost of sprays was reduced due to the fact that the participatory farmers could properly identify insect-pests and were familiar with the economic thresholds based on which they selected right pesticide and sprayed required insecticides at correct dose and right time. The average expenditure incurred on insecticide by the participatory farmers was Rs. 1429/- per acre against Rs. 1977/- by the non-participatory farmers (Table 13a) revealing thereby that participatory farmers spent 27.7% less amount than the non-participatory farmers (Table 13a, Fig 9 & Annexure VII).

4.8.5 Picking

The cost of picking depends upon seed cotton yield per acre and rate of picking. During this season picking was carried out by the labour at the rate of Rs. 5.00/Kg, on an average. Overall average cost incurred on picking by participatory farmers was Rs. 3212/- and non-participatory farmers was Rs 2919/- per acre owing to the higher yield obtained by the former (Table 13b, Annexure VIII).

Table 13b: Expenditure incurred on cotton picking

District	Farmers	Total Input (Rs/acre) (1)	Yield (q/acre) (2)	Picking Charges (Rs/q) (3)	Picking Cost (2 x 3) (4)	Grand Total Cost (1+4)
Fazilka	Participatory	11403.3	6.3	497.7	3135.5	14538.8
	Non-participatory	12637.9	5.6	497.6	2786.6	15424.5
Bhatinda	Participatory	8658.9	6.4	567.5	3632.0	12290.9
	Non-participatory	10978.6	6.0	559.5	3357.0	14335.6
Mansa	Participatory	9626.6	6.3	500.0	3150.0	12776.6
	Non-participatory	10541.3	5.7	496.0	2827.2	13368.5
Muktsar	Participatory	8111.6	6.5	451.0	2931.5	11043.1
	Non-participatory	9669.9	6.0	450.9	2705.4	12375.3
Average	**Participatory**	**9450.1**	**6.4**	**504.1**	**3212.3**	**12662.4**
	Non-participatory	**10956.8**	**5.8**	**501.0**	**2919.1**	**13876.0**

Based on data from 1000 participatory farmers and 200 non-participatory farmers

4.9 Yield and Profit

The average yield of cotton in participatory adopted villages varied from 6.3 to 6.5 q/ acre with an average of 6.4 q /acre (Table 13) which was 10.3 per cent higher than that in the non-participatory farmers' fields during 2013 (Fig 10).

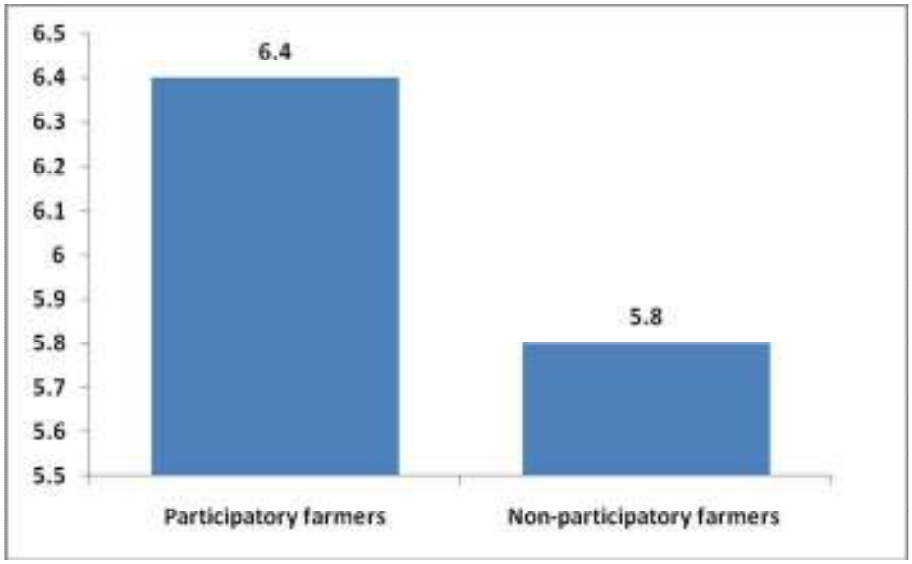


Fig 10 : Seed cotton yield

The average cost of seed, land preparation, fertilizers, weedicides, pesticides, and picking of cotton per acre by the participatory and the non-participatory farmers in 4 Clusters was Rs. 12,662/- and Rs. 13,875/- respectively. The average net returns of participatory and non-participatory farmers was Rs. 15418/- and Rs 11,751/- respectively, indicating thereby that the participatory farmers gained 23.78 % (Rs. 3667/- per acre) more profit than the non-participatory

farmers (Table 14, Fig 11 and Annexure IX). Average net gains by participatory farmers over non-participatory farmers of 4 Clusters varied from Rs. 3302/- to Rs. 3844/- per acre. The impact accrued from the judicious use of inputs, i.e reduction in number and cost of insecticide spray, balanced use of fertilizers and sowing of recommended Bt Cotton hybrids.

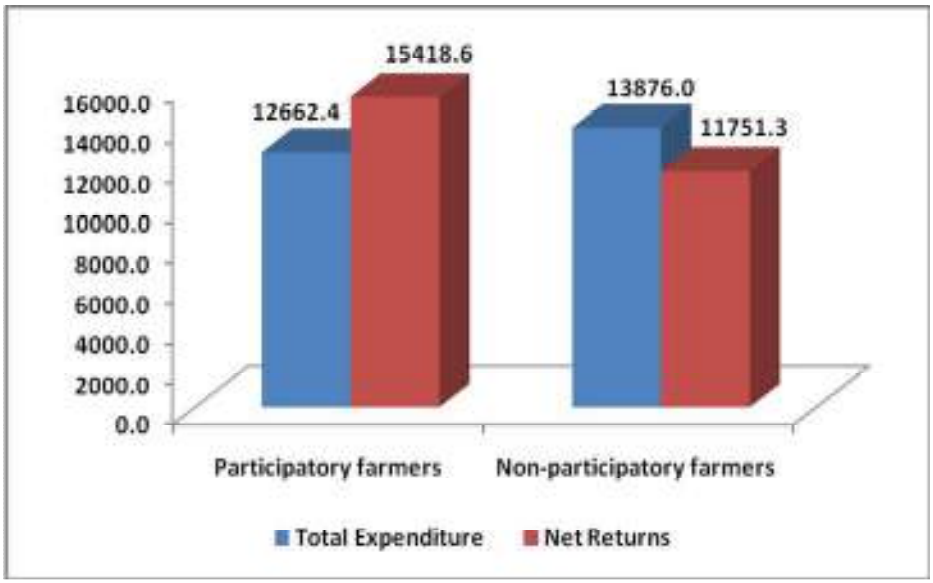


Fig. 11 : Decrease in expenditure and increase in net returns

Table 14: Profit earned by participatory farmers over the non-participatory farmers in cotton production area.

District	Farmers	Yield (q/ acre) (1)	Average Seed cotton rate (Rs/acre) (2)	Net Income (Rs/acre) (3) (1 x 2)	Grand Total expenditure (Rs/acre) (4)	Net Returns (Rs/acre) (3-4)	Profit to participatory farmers over Non-participatory (Rs/ acre)
Fazilka	Participatory	6.3	3995.1	25169.1	14538.8	10630.3	3767.9
	Non-participatory	5.6	3979.8	22286.9	15424.5	6862.4	
Bhatinda	Participatory	6.4	4500.0	28800.0	12290.9	16509.1	3844.7
	Non-participatory	6.0	4500.0	27000.0	14335.6	12664.4	
Mansa	Participatory	6.3	4460.0	28098.0	12776.6	15321.4	3302.1
	Non-participatory	5.7	4454.0	25387.8	13368.5	12019.3	
Muktsar	participatory	6.5	4654.9	30256.9	11043.1	19213.8	3755.1
	Non-participatory	6.0	4639.0	27834.0	12375.3	15458.7	
Average	**Participatory**	**6.4**	**4402.5**	**28081.0**	**12662.4**	**15418.6**	**3667.3**
	Non-participatory	**5.8**	**4393.2**	**25627.2**	**13876.0**	**11751.3**	

4.10 Impact

Profit Earned : Based on the additional seed cotton production to the tune of 70,973 quintal (@ 0.6 q/acre), from 1,18,288 acres, that was sold on an average rate of Rs 4400/q, fetched increased profit to 23,619 farmers adopted in the four districts of Malwa region to the tune of Rs. 31.22 Crores.

Generation of additional employment opportunity : Increase in the seed cotton yield in the project area resulted in additional labour requirement to the extent of 1,77,432 man days for picking the increased production of 70,973 q @ 40 kg/day. As a result the additional labour employed for picking earned to the tune of Rs. 3,54,86,500/- charging @ Rs. 500/q.

Environmental health : Adoption of IPM technology by the adopted farmers in the project villages resulted in a significant drop in the number of insecticide-pesticides sprays that contributed towards better environmental health in the region.

5. PART 2: WHEAT

5.1 Area under wheat

In the four districts, adopted under cotton wheat cropping system, wheat crop was sown on 2,22,739 acres which accounted for 87.5 per cent of the total cultivated area (Table 15, Annexure X).

Table 15: Area under wheat in adopted villages during 2013-14

Sr. No.	District (Cluster)	Total cultivated area (acre)	Area under wheat (acre)	Area (Per cent)
1	Fazilka (Khuian Sarvar)	108938	93948	86.2
2	Bathinda (Maur)	49073	44321	90.3
3	Mansa (Jhunir)	47229	41252	87.3
4	Muktsar (Muktsar)	49238	43218	87.8
Average		**254478**	**222739**	**87.5**

5.1.1 Sowing of wheat varieties

Wheat varieties sown by farmers included PBW 550, HD 2967, PBW 502, PBW 621, DDW 17 and PBW 590 all of which are recommended by PAU and they occupied 83.8% of the total area under wheat (Table 16). Out of these PBW 550, HD 2967 were preferred over other varieties. Unrecommended varieties occupied 16.2% area and amongst the unrecommended varieties HD 2932, highly susceptible to rusts, was more common (Annexure XI).

Table 16: Area under recommended and unrecommended varieties of wheat

Sr. No.	District (Cluster)	Area under wheat (acre) 2013-14	Percentage area under	
			Recommended	Unrecommended
1	Fazilka (Khuian Sarvar)	93948	86.4	13.6
2	Bathinda (Maur)	44321	89.8	10.2
3	Mansa (Jhunir)	41252	79.5	20.5
4	Muktsar (Muktsar)	43218	79.4	20.3
Average		222739	83.8	16.2

5.1.2 Sowing Pattern

Wheat sowing was delayed during 2013-14 due to delayed cotton picking owing to inclement weather. The area sown under wheat was 4.8 percent in October, 67.7 per cent in November and 27.5% in December (Table 17, Annexure XII).

Table 17: Sowing pattern of wheat in adopted villages

Sr. No.	District (Cluster)	Area under wheat (acre)	Per cent area				
			Oct. 1-31	Nov. 1-15	Nov. 16-30	Dec. 1-15	Dec. 16-31
1	Fazilka (Khuian Sarvar)	93948	0.0	6.00	46.7	34.9	12.4
2	Bathinda (Maur)	44321	5.7	37.2	34.9	19.9	2.3
3	Mansa (Jhunir)	41252	6.8	44.0	31.4	16.1	1.7
4	Muktsar (Muktsar)	43218	6.5	35.8	34.7	18.5	4.5
Average		**222739**	**4.8**	**30.8**	**36.9**	**22.4**	**5.1**

5.2. Village Level Farmers' Meetings

A total of 196 farmers' meetings were held in four Clusters in which 5,376 farmers participated (Table 18). In these meetings, farmers were provided information on wheat cultivation techniques i.e. suitable wheat varieties, right method of sowing and efficient management of nutrients, weeds, diseases and insect-pests. During October and November 2013, six trainings were organized on latest techniques of wheat production for Cluster, Sub-Cluster incharges and Scouts (Table 19). The alerts on rust appearance issued from the Integrated Disease Management (IDM) project with Department of Plant Pathology, Punjab Agricultural University were used to forewarn farmers about the incidence of rusts. Accordingly, farmers were asked to monitor wheat crop for likely incidence of rusts and spray for its management, if required.

Table 18: Farmers' meetings organized at village level

Sr No.	District	No of Meetings	No. of Farmers trained
1	Fazilka	48	1279
2	Bathinda	53	1411
3	Jhunir	48	1352
4	Muktsar	47	1334
Total		**196**	**5376**

Table 19: Training of scouts, Cluster and Sub-Cluster incharges

Sr. No.	District	Venue	Date	Scouts, Cluster and Sub-Cluster trained
1	Mansa	Office of the Chief Agriculture Officers, Mansa	28-10-2013	04
2	Bathinda & Mansa	Punjab Agricultural University Ludhiana	25 to 27-11-2013	50
3	Bathinda	Office of the Chief Agriculture Officers, Bathinda	21-10-2013	04
5	Fazilka	CIPHET, Abohar	25-10-2013	04
6	Mukatsar & Fazilka	Punjab Agricultural University Ludhiana	19 to 21-11-2013	40
7	Mukatsar	Office of the Chief Agriculture Officers, Muktsar	17-10-2013	04
			Total	**106**

5.3. Insect-pests and disease surveillance

Field staff regularly monitored the fields of adopted farmers for the attack of aphid, army worm, and pink stem borer and incidence of yellow or stripe rust and loose smut. The surveillance of the insect-pests was conducted from first fortnight of February to end March. The aphid number was counted on ear head basis. The decision on insecticide spray for aphid control was based on economic threshold i.e. 5 aphid/ear head. The occurrence of rust pustules was also monitored and whenever they appeared, the farmers were asked to spray against them.

Record of insect numbers, incidence of yellow rust and their control : The aphid population remained low during the crop season. As is evident from Table 20, the population on an average varied from 1.66 to 1.84 / ear head in participatory farmers fields and from 1.73 to 1.98/ ear head in non-participatory farmers fields during February (Table 20) population rose to 4.81 to 6.11 / ear head in participatory and 4.88 to 6.68 in non-participatory farmers field during March (Table 20). The number of aphids rose above economic threshold (5 aphids/ear head) during March. Farmers therefore carried out sprays for aphid control during this period.

Table 20. Monthly average aphid population per earhead

Sr. No.	District (Cluster)	Farmer	February	March
1	Fazilka (Khuian Sarvar)	Participatory	1.69	4.81
		Non-participatory	1.73	4.88
2	Bathinda (Maur)	Participatory	1.66	5.21
		Non-participatory	1.96	6.83
3	Mansa (Jhunir)	Participatory	1.76	6.16
		Non-participatory	1.98	6.68
4	Muktsar (Muktsar)	Participatory	1.84	6.11
		Non-participatory	1.97	6.42

Observation recorded from 10 plants / acre

Table 21. Incidence of yellow rust during March, 2014

Sr. No.	District (Cluster)	Farmer	February	March
1	Fazilka (Khuian Sarvar)	Participatory	Nil	Traces
		Non-participatory	Nil	Traces
2	Bathinda (Maur)	Participatory	Nil	Traces
		Non-participatory	Nil	Traces
3	Mansa (Jhunir)	Participatory	Nil	Traces
		Non-participatory	Nil	Traces
4	Muktsar (Muktsar)	Participatory	Nil	Traces
		Non-participatory	Nil	Traces

Observation recorded from 10 plants/ acre

The incidence of yellow rust was recorded in February, particularly on susceptible varieties and it spread to all varieties later on. The Varieties HD 2967, PBW 621, PBW 550 and DBW 17 exhibited tolerance to yellow rest as its incidence was comparatively less than that on HD 2932. Under the situation the farmers were advised to spray the crop with Tilt 25 EC or Folicur 25 EC @ 200 ml/acre to manage the rust (Table 22).

Table 22 : Pesticides recommended for the control of aphid and yellow rust

Pest	Pesticide	Dose/acre
Aphid	Imidacloprid 200 SL	40 ml
Aphid	Thiomethoxam 25WG	20 g
Aphid	Clothianidin 50 WDG	12 g
Aphid	Dimethoate 30 EC	150 ml
Aphid	Oxydemeton-methyl 25 EC	150 ml
Yellow Rust	Tilt 25 EC	200 ml
Yellow Rust	Folicur 25 EC	200 ml

Volume of water used per acre is 100 litre for insecticides and 200 litre for fungicides

5.4. Pesticides spray and their costs

Average number of sprays carried out by participatory and non-participatory farmers was 2.6 and 3.3/acre respectively for managing aphid attack and rust incidence. The expenditure incurred by participatory farmers on managing these pests varied from Rs. 208to 729/ acre and by non-participatory farmers from Rs. 358to 901/ acre (Table 23).

Table 23: Average cost and number of sprays of pesticides for managing aphid and yellow rust in wheat.

Sr. No.	District (Cluster)		Number of sprays	Cost (Rs./acre)
1	Fazilka (Khuian Sarvar)	Participatory	2.8	729.4
		Non-participatory	3.2	901.2
2	Bathinda (Maur)	Participatory	2.3	208.0
		Non-participatory	3.4	358.8
3	Mansa (Jhunir)	Participatory	2.6	453.2
		Non-participatory	3.3	542.5
4	Muktsar (Muktsar)	Participatory	2.8	464.7
		Non-participatory	3.4	587.9

5.5 Yield

There was not much variation in the wheat yield obtained by participatory and the non-participatory farmers and the former on an average got 1.6 q/acre higher yields than the latter (Table 24).

Table 24. Wheat yield obtained by participatory and non-participatory farmers

Sr. No.	District (Cluster)	Farmers	Wheat yield (q/acre)
1	Fazilka (Khuian Sarvar)	Participatory	19.9
		Non-participatory	18.4
2	Bathinda (Maur)	Participatory	19.0
		Non-participatory	17.5
3	Mansa (Jhunir)	Participatory	19.7
		Non-participatory	18.2
4	Muktsar (Muktsar)	Participatory	19.8
		Non-participatory	17.7
Average		**Participatory**	**19.6**
		Non-participatory	**18.0**

5.6 Expenditure incurred on various inputs

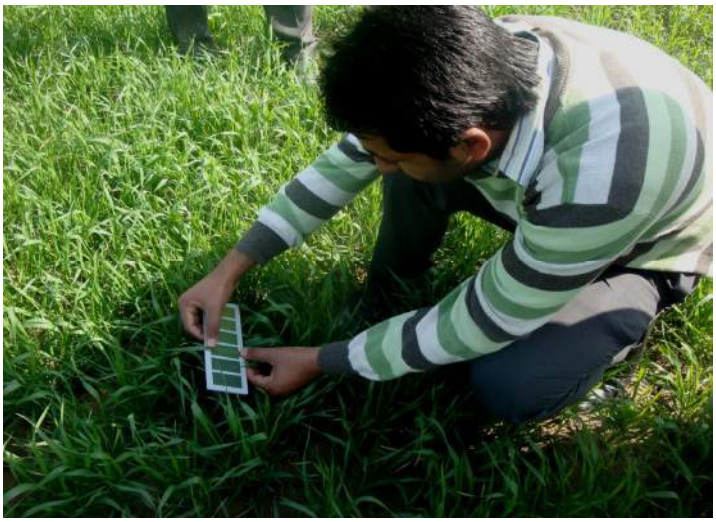
Seed and sowing: Sowing cost includes cost of seed, pre-sowing irrigation (*Rauni*), field preparation and labour charges. The average expenditure incurred on seed and field preparation incurred by participatory farmers and non-participatory farmers was Rs 2382and Rs 2671/acre respectively. Participatory Farmers thus incurred 10.8 per cent less expenditure than Non participatory farmers on seed and sowing and field preparation (Table 25).

Table 25: Expenditure incurred (Rs/acre) for wheat production by participatory and non-participatory farmers.

Sr. No.	District (Cluster)	Farmers	Seed and sowing	Fertilizer	Insecticides and fungicide	Weedicide	Total
1	Fazilka (Khuian Sarvar)	Participatory	3153.8	2079.8	729.4	496.2	6459.2
		Non-participatory	3410.6	2363.1	901.2	567.1	7242.0
2	Bathinda (Maur)	Participatory	2412.9	1909.1	208.0	314.7	4394.8
		Non-participatory	2410.4	2380.4	358.8	311.5	5461.7
3	Mansa (Jhunir)	Participatory	2264.7	2050.9	453.2	370.2	5139.0
		Non-participatory	2475.0	2110.5	542.4	388.4	5516.2
4	Muktsar (Muktsar)	Participatory	2338.8	2096.6	464.8	304.5	5204.7
		Non-participatory	2497.5	2130.5	587.9	334.4	5550.2
Average		**Participatory**	**2430.1**	**2034.2**	**463.9**	**371.4**	**5299.4**
		Non-participatory	**2698.4**	**2246.1**	**597.6**	**400.4**	**5942.5**
Per cent decrease over the Non-Participatory			**10.8**	**9.4**	**22.4**	**7.2**	**10.8**

Data from 1000 participatory farmers and 200 Non-participatory farmers
Field Preparation expenses: 2-3 ploughings, planking and sowing - Rs 600-750/acre
Labour charges/day: Rs 200-250

Seed and sowing : The participatory farmers incurred 10.8% less expenditure on seed and sowing compared to the non-participatory farmers (Table 25). The non-participatory farmers did not go in for seed treatment (Annexure XIII).



Field Officer demonstrating use of Leaf Color Chart (LCC) for Nitrogen Use Efficiency to farmers in Balamgarh village, Muktsar district

Fertilizers : Urea, Di-ammonium Phosphate (DAP) and zinc sulphate were applied at recommended doses at the different growth stages of wheat crop. The use of DAP, which is not recommended in cotton following wheat that had received recommended dose of this fertilizer by the non-participatory farmers resulted in increase in the cost. However, the participatory farmers used these fertilizers as per recommendations. The average expenditure on fertilizers by participatory farmers was Rs 2034/ acre compared to Rs 2246/ acre by non-participatory farmers indicating 9.4% less expenditure by participatory farmers than non participatory farmers (Table 25, Annexure XIII).

Pesticides: There was not much difference in the expenditure incurred on spray of insecticides and fungicides by participatory and the non-participatory farmers. Besides the participatory

farmers applied their knowledge to select the right pesticide and sprayed the correct dose at right time based on ET (5 aphid/ear head). Overall average expenditure incurred on pesticides by participatory farmers was Rs. 463/ acre compared to Rs 597/ acre by non-participatory farmers revealing thereby that the participatory farmers spent 22.4% less amount than the non-participatory farmers (Table 25, Annexure XIII).

Weed Management: Weeds are one of the major factors for reduction in yield of wheat and they must be managed by the appropriate method at the right time. The weedicides are sprayed at initial stages of crop growth. The participatory farmers and non-participatory farmers on an average spent Rs 371 and Rs 400/ acre on weed management respectively which divulged that the participatory farmers incurred 7.2% less than the non-participatory farmers (Table 25, Annexure XIII).

Harvesting: Wheat was harvested with the combine harvester at the rate ranging from Rs 1075 to 1143/acre in different Clusters/districts. The average expenditure incurred on harvesting by participatory and the non-participatory farmer was almost the same (Table 26, Annexure XIII).

Table 26: Expenditure incurred on harvesting wheat

Sr. No.	District (Cluster)	Farmers	Total Input cost (Rs/acre) (1)	Harvest cost (Rs/acre) (2)	Grand Total Cost (Rs/acre) (1+2)
1	Fazilka (Khuian Sarvar)	Participatory	6459.2	1701.0*	8160.2
		Non-participatory	7242.0	1972.2*	9214.2
2	Bathinda (Maur)	Participatory	4394.8	800.0	5194.8
		Non-participatory	5461.5	800.0	6261.7
3	Mansa (Jhunir)	Participatory	5139.0	900.0	6039.0
		Non-participatory	5516.2	900.0	6416.2
4	Muktsar (Muktsar)	Participatory	5204.7	900.0	6104.7
		Non-participatory	5550.2	900.0	6450.2
Average		**Participatory**	**5299.4**	**1075.3**	**6374.7**
		Non-participatory	**5942.4**	**1143.1**	**7085.5**

Data from 1000 participatory farmers and 200 non-participatory farmers
* Manual harvesting

5.7 Impact

The average total cost of all inputs used for production of wheat was Rs 6374 and Rs. 7085/acre by participatory and the non-participatory farmers, respectively. As such the participatory farmers got Rs.3020/- more return/ acre than the non-participatory (Table 27, Annexure XIV).

Table 27: Profit earned by participatory farmers over the non-participatory farmers in wheat production.

Sr. No.	District (Cluster)	Farmers	Yield (q/acre) (1)	Wheat selling rate (Rs/q) (2)	Net Income (Rs/acre) (3) (1 x 2)	Grand Total cost (Rs/acre) (4)	Net Return (Rs/acre) (3-4)	Profit to participatory farmers over Non-participatory (Rs/acre)	% Profit
1	**Fazilka (Khuian Sarvar)**	Participatory	19.9	1400.0	27860.0	8160.2	19699.8	3154.0	19.10
		Non-participatory	18.4	1400.0	25760.0	9214.2	16545.8		
2	**Bathinda (Maur)**	Participatory	19.0	1400.0	26642.0	5194.8	21447.2	3222.4	17.7
		Non -participatory	17.5	1400.0	24486.0	6261.5	18224.8		
3	**Mansa (Jhunir)**	Participatory	19.7	1400.0	27594.0	6039.0	21755.0	2435.2	12.6
		Non-participatory	18.2	1400.00	25536.0	6416.2	19319.8		
4	**Muktsar (Muktsar)**	Participatory	19.8	1400.00	27734.0	6104.7	21629.3	3271.5	17.8
		Non-participatory	17.7	1400.00	24808.0	6450.2	18357.8		
Average		**Participatory**	**19.6**	**1400.00**	**27457.5**	**6374.7**	**21132.8**	**3020.8**	**16.7**
		Non-participatory	**18.0**	**1400.00**	**25147.5**	**7085.5**	**18112.1**		

Average profit earned by participatory farmers over non-participatory farmers in different Clusters varied from Rs.2435 to Rs. 3271 per acre (Table 27, Annexure XIV) and the overall net profit earned by the participatory farmer was Rs. 3020/acre which was 16.7% higher than that of the non-participatory farmers.

6. OVERALL IMPACT OF THE INTEGRATED PRODUCTIVITY MANAGEMENT APPROACH

During 2013-14, with the adoption of the Integrated Productivity Management approach, the participatory farmers on an average carried out 5.5 insecticide sprays per acre in cotton compared to 6.4 by the non-participatory farmers showing 14.1 per cent decrease in insecticide use over non-participatory farmers, revealing thereby less expenditure by the participating farmers. Similar trend was observed during the year 2012-13. The average yield of cotton of participatory farmers in adopted villages varied from 6.3 to 6.5 q/acre with an overall average of 6.4 q /acre which was 10.3 per cent higher than that in the non-participatory farmers' fields. The average net return of participatory and non-participatory farmers was Rs. 15418/acre and Rs 11751/acre respectively, indicating thereby that the participatory farmers gained 23.78 % (Rs. 3667 per acre) higher profit than the non-participatory farmers. Nevertheless this profit was of the order of 35% during 2012-13. The additional seed cotton production to the tune of 70973 quintal (@ 0.6 q/acre), from 1,18,288 acres, that was sold on an average rate of Rs 4400/q, fetched increased profit to 23619 farmers adopted in the four districts of Malwa region to the tune of Rs. 31.22 crore. Increase in the seed cotton yield in the project area resulted in generating additional

employment opportunities to the tune of 1,77,432 mandays for picking the increased production of 70,973 q @ 40 kg/day. As a result the additional labour employed for picking earned to the tune of Rs. 3.54 Crores charging @ Rs. 500/q.

As far as wheat was concerned, the participatory farmers incurred 9.4% and 29.4% less expenditure on fertilizers and pesticides respectively compared to that incurred by the non-participatory farmers. Despite that, the participatory farmers obtained 1.6 q/acre higher wheat grain yield than the non-participatory farmers.

Looking at the overall impact of the Integrated Productivity Management, the participating farmers following the integrated approach in the Cotton-Wheat Cropping System earned a net gain of Rs. 6688/acre (Rs. 3667/acre in cotton and Rs. 3021/acre in wheat) and it was comparable with that (Rs. 6918/acre) of 2012-13. The overall net gains per acre (Rs. 6688/-) is higher in Cotton-Wheat Cropping System as compared to cotton alone which is around Rs 4052-5022/acre as reported in earlier Phase during 2009-12. The overall net gain for each farming family in Cotton-Wheat Cropping System over two years was Rs 13,600 per acre.

Annexure - I

Land holding of farmers in the adopted villages of different districts

District Fazilka							
Sr.No.	**Village**	**Marginal (0-1 ha)**	**Small (1-2 ha)**	**Semi medium (2-4 ha)**	**Medium (4-10 ha)**	**Big (>10)**	**Total**
1	Jandwala hanwanta	45	69	105	51	30	300
2	Acharichi	53	58	32	46	41	230
3	Usman khera	43	47	57	48	55	250
4	Panniwala	47	65	22	28	28	190
5	Sabuana	30	134	100	96	40	400
6	Kabul shah khuban	72	87	142	69	36	406
7	Jandwala mira	86	108	129	60	47	430
8	Lakhewali dhab	52	78	160	100	85	475
9	Shatirwala	37	42	75	48	50	252
10	Kheowali dhab	45	69	78	57	51	300
11	Tillian wali	27	35	59	43	41	205
12	Patrewala	26	74	48	30	22	200
13	Haripura	38	87	119	64	42	350
14	Dharmpura	55	75	114	61	20	325
15	Saidanwali	121	189	110	58	47	525
16	Danewala	36	153	81	108	72	450
17	Killianwali	48	149	139	91	53	480
18	Panjkosi	48	52	140	72	88	400
19	Bazidpur kattianwali	36	65	84	34	21	240
20	Nihal khera	91	84	88	52	35	350
21	Khippanwali	52	57	131	88	109	437
22	Bodiwala pitha	24	46	70	38	22	200
23	Kathera	32	56	122	80	60	350
24	Danger khera	87	138	158	87	40	510
25	Ghallu	30	118	111	74	37	370
	Total	**1261**	**2135**	**2474**	**1583**	**1172**	**8625**

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District Bathinda							
Sr.No.	**Village**	**Marginal (0-1 ha)**	**Small (1-2 ha)**	**Semi medium (2-4 ha)**	**Medium (4-10 ha)**	**Big (>10)**	**Total**
1	Yatri	35	85	22	8	0	150
2	Mourh chrat singh	35	65	20	0	0	120
3	Marhi	32	38	10	0	0	80
4	Jodhpur pakhar	95	199	66	40	0	400
5	Kutiwal klan	52	67	35	27	0	181
6	Thamn garh	38	48	52	37	0	175
7	Kutiwal khurd	28	40	34	125	0	227
8	Ghumn klan	201	74	58	12	0	345
9	Ghumn khurd	43	27	10	5	0	85
10	Sukha singh wala	32	22	11	6	0	71
11	Ram nagar	129	35	39	12	0	215
12	Kotli klan	18	45	76	137	16	292
13	Bhai desa	15	21	23	12	8	79
14	Mourh klan	64	71	117	142	18	412
15	Rajgarh kube	34	47	98	55	43	277
16	Mourh khurd	17	33	38	22	11	121
17	Kotli khurd	27	53	131	114	33	358
18	Swaech	14	25	37	21	8	105
19	Kot bhara	46	99	35	205	25	410
20	Ghari bara singh	49	17	0	101	35	202
21	Rajgarh bhundarh	43	22	21	124	38	248
22	Gso khana	23	14	7	65	21	130
23	Manak khana	15	26	0	80	39	160
24	Chthey wal	94	62	38	247	53	494
25	Bhai bakhtour	115	126	22	300	37	600
	Total	**1294**	**1361**	**1000**	**1897**	**385**	**5937**

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District Mansa							
Sr.No.	**Village**	**Marginal (0-1 ha)**	**Small (1-2 ha)**	**Semi medium (2-4 ha)**	**Medium (4-10 ha)**	**Big (>10)**	**Total**
1	Burj bhalai ke	32	42	68	21	11	174
2	Ghuduwala	70	50	40	46	0	206
3	Ullk	25	70	40	20	5	160
4	Berewala	11	64	39	28	8	150
5	Jorkian	15	25	28	40	17	125
6	Tandian	28	54	35	56	7	180
7	Jherian	8	15	38	45	11	117
8	Mian	18	32	46	24	5	125
9	Jagatgarh bandra	22	15	17	13	3	70
10	Tibbi	20	38	21	10	3	92
11	Kusla	25	125	60	75	15	300
12	Ramanandi	26	35	35	25	5	126
13	Dasaundia	7	22	47	46	8	130
14	Bajewala	25	165	180	35	25	430
15	Bhame klan	180	175	101	24	0	480
16	Chappianwali	16	22	36	14	8	96
17	Lallianwali	15	55	80	55	20	225
18	Sahnianwali	65	55	41	42	3	206
19	Talwandi aklia	85	70	105	25	5	290
20	Dalieawali	55	74	90	27	4	250
21	Chalilanwali	43	45	86	18	8	200
22	Peron	63	75	88	26	3	255
23	Raipur	364	280	301	90	35	1070
24	Maakha	118	128	125	48	21	440
25	Banawali	31	43	84	24	6	188
	Total	**1367**	**1774**	**1831**	**877**	**236**	**6085**

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District Muktsar							
Sr.No.	**Village**	**Marginal (0-1 ha)**	**Small (1-2 ha)**	**Semi medium (2-4 ha)**	**Medium (4-10 ha)**	**Big (>10)**	**Total**
1	Balamgarh	22	33	40	19	1	115
2	Gobind nagri	8	13	20	10	2	53
3	Mour	10	15	25	20	10	80
4	Badhai	30	35	40	40	25	170
5	Ramgarh chungha	19	33	46	44	19	161
6	Saddarwala	0	9	26	25	12	72
7	Kotli deon	1	11	35	42	8	97
8	Bura gujjar	6	22	32	43	3	106
9	Lambidhab	1	6	12	24	8	51
10	Gulabewala	50	60	65	50	25	250
11	Khappianwali	30	50	60	40	20	200
12	Chak madrassa	7	35	46	20	0	108
13	Madrasa	13	17	12	15	6	63
14	Bhagsar	125	100	85	90	50	450
15	Lakhewali	0	0	0	25	42	67
16	Nandgarh	1	29	27	15	6	78
17	Gandhar	0	3	16	33	11	63
18	Samewali	6	17	36	48	29	136
19	Rahurawali	20	15	17	18	7	77
20	Goneana	10	20	40	10	10	90
21	Canada basti	3	12	15	6	4	40
22	Maha badhar	20	35	90	60	40	245
23	Chak tamkot	5	5	14	11	15	50
24	Khunde halal	2	10	3	15	15	45
25	Khunan kalan	3	9	37	40	16	105
	Total	**392**	**594**	**839**	**763**	**384**	**2972**

Annexure-II

Cast-wise distribution of farming families in the adopted villages of different districts

District Fazilka					
Sr. No.	**Village**	**Number of farming families**	**General**	**SC**	**BC**
1	Jandwala hanwanta	300	30	75	195
2	Acharichi	230	184	46	0
3	Usman khera	250	178	32	40
4	Panniwala	190	137	46	7
5	Sabuana	400	40	240	120
6	Kabul shah khuban	406	252	102	52
7	Jandwala mira	430	214	120	86
8	Lakhewali dhab	475	200	166	109
9	Shatirwala	252	108	91	53
10	Kheowali dhab	300	120	150	30
11	Tillian wali	205	106	23	76
12	Patrewala	200	80	70	50
13	Haripura	350	245	70	35
14	Dharmpura	325	16	49	260
15	Saidanwali	525	37	68	420
16	Danewala	450	234	117	99
17	Killianwali	480	384	48	48
18	Panjkosi	400	180	120	100
19	Bazidpur kattianwali	240	19	12	209
20	Nihal khera	350	140	70	140
21	Khippanwali	437	219	44	174
22	Bodiwala pitha	200	124	26	50
23	Kathera	350	168	102	80
24	Danger khera	510	102	10	398
25	Ghallu	370	111	178	81
	Total	**8625**	**3628**	**2075**	**2912**

Contd.....

District Bathinda					
Sr. No.	**Village**	**Number of farming families**	**General**	**SC**	**BC**
1	Yatri	150	75	40	35
2	Mourh chrat singh	120	85	25	10
3	Marhi	80	60	15	5
4	Jodhpur pakhar	400	375	25	-
5	Kutiwal klan	181	120	50	11
6	Thamn garh	175	115	35	25
7	Kutiwal khurd	227	156	49	22
8	Ghumn klan	345	298	30	17
9	Ghumn khurd	85	49	16	20
10	Sukha singh wala	71	50	15	6
11	Ram nagar	215	175	30	10
12	Kotli klan	292	150	25	117
13	Bhai desa	79	50	10	19
14	Mourh klan	412	300	80	32
15	Rajgarh kube	277	175	69	33
16	Mourh khurd	121	80	20	21
17	Kotli khurd	358	275	60	23
18	Swaech	105	75	30	0
19	Kot bhara	410	350	45	15
20	Ghari bara singh	202	145	50	7
21	Rajgarh bhundarh	248	169	43	36
22	Gso khana	130	65	50	15
23	Manak khana	160	125	30	5
24	Chthey wal	494	375	94	25
25	Bhai bakhtour	600	448	83	69
	Total	**5937**	**4340**	**1019**	**578**

Contd.....

District Mansa					
Sr. No.	**Village**	**Number of farming families**	**General**	**SC**	**BC**
1	Burj bhalai ke	174	173	1	0
2	Ghuduwala	206	155	21	30
3	Ullk	160	157	3	0
4	Berewala	150	150	0	0
5	Jorkian	125	110	7	8
6	Tandian	180	150	20	10
7	Jherian	117	92	15	10
8	Mian	125	100	15	10
9	Jagatgarh bandra	70	58	4	8
10	Tibbi	92	78	10	4
11	Kusla	300	280	15	5
12	Ramanandi	126	88	9	29
13	Dasaundia	130	117	5	8
14	Bajewala	430	350	20	60
15	Bhame klan	480	460	14	6
16	Chappianwali	96	96	0	0
17	Lallianwali	225	205	0	20
18	Sahnianwali	206	206	0	0
19	Talwandi aklia	290	275	7	8
20	Dalieawali	250	241	7	2
21	Chalilanwali	200	175	5	20
22	Peron	255	240	5	10
23	Raipur	1070	1045	10	15
24	Maakha	440	210	60	170
25	Banawali	188	173	5	10
	Total	**6085**	**5384**	**258**	**443**

Contd.....

District Muktsar					
Sr. No.	**Village**	**Number of farming families**	**General**	**SC**	**BC**
1	Balamgarh	115	106	7	2
2	Gobind nagri	53	53	0	0
3	Mour	80	74	3	3
4	Badhai	170	165	0	5
5	Ramgarh chungha	161	111	0	50
6	Saddarwala	72	71	0	1
7	Kotli deon	97	97	0	0
8	Bura gujjar	106	105	1	0
9	Lambidhab	51	48	1	2
10	Gulabewala	250	235	5	10
11	Khappianwali	200	190	2	8
12	Chak madrassa	108	95	9	4
13	Madrasa	63	49	14	0
14	Bhagsar	450	400	20	30
15	Lakhewali	67	58	5	4
16	Nandgarh	78	69	4	5
17	Gandhar	63	38	15	10
18	Samewali	136	111	15	10
19	Rahurawali	77	65	9	3
20	Goneana	90	60	5	25
21	Canada basti	40	40	0	0
22	Maha badhar	245	227	14	4
23	Chak tamkot	50	45	4	1
24	Khunde halal	45	43	2	0
25	Khunan kalan	105	103	2	0
	Total	**2972**	**2658**	**137**	**177**

Annexure II(a)

Work Plan for 2013-14

Month	Activities	Activities description
April, 2013	1) Organizing weed eradication campaign. 2) Farmers training camp regarding selection of varieties and sowing techniques 3) Training of Socuts/Cluster & Sub-cluster Incharges 4) Establishment of VICs	- Training of the selected Scouts/Cluster & Sub-cluster Incharges regarding cotton IPM. - Distribution of the printed technical information material among farmers - Choice of promising BT cotton hybrids recommended by PAU. - Basal application of fertilizers.
May, 2013	Thinning of cotton crop	- Sowing and gap filling/ Irrigation - Collection of data on pattern of sowing and adoption of Bt cotton hybrids. - Irrigation scheduling
June , 2013	1) Organizing Weed Control Campaign 2) Surveillance of Insect- pests infestation	- Control of weeds - Survey of cotton fields regarding identification of insect-pest attack & guiding farmers regarding appropriate control measures based on Economic Threshholds.
July, 2013	1) Organizing Farmers' meeting/ Training camps 2) Monitoring insect-pests population	- Identification of parasites, predators & insect-pests such as Mealy bug, Jassid, White fly and Thrips - Selection of insecticides for the control of sucking pests
August, 2013	Organizing Farmers' meeting/ Training camps	- Identification of various insect-pests and ensuring judicious use of pesticides. - Installation of pheromone traps for monitoring American bollworm, Spotted bollworm and Pink bollworm - Collection of data on insect-pest attack and spray of insecticides.
Sept, 2013	1) Surveillance of insect-pests 2) Scout training regarding wheat production techniques	- Collection of surveillance data, spray expenses and yield. - Training of scouts for Wheat production technology

Contd.....

Oct-Nov, 2013	1) Surveillance of cotton insect-pests 2) Sowing of wheat	- Collection of surveillance data, spray expenses, yield and net returns of the farmers per acre. - Choice of wheat varieties. - Field Preparation - Seed rate and Seed treatment for insect and disease control - Fertilizer application in Wheat - Irrigation scheduling
Nov- Dec 2013	1) Writing of Annual Report of Cotton-Wheat Project 2) Farmers' meeting for providing technical guidance regarding late sown wheat	- Collection, analysis & interpretation of data and writing of annual report. - Off season management of insect-pests and their alternate host plants. - Selection of varieties. - Field preparation - Seed rate and seed treatment for insect and disease control - Fertilizer application - Timely irrigation - Weed management
Dec 2013 – Jan 2014	Irrigation, weed management and fertilizer application	- Weed management through recommended weedicides. - Irrigation and fertilizer application as per recommendations by PAU.
Feb – March 2014	1) Insect-pest and Nutrient management 2) Selection of Villages for Cotton crop advisory	- Management of diseases using recommended fungicides - Insect-management - Nutrient management in timely and late sown wheat.
March-April 2014	1) Harvesting of wheat 2) Training of Field staff on Cotton production technology - Wall paintings in project villages	- Timely harvesting, proper marketing and scientific storage of wheat

Annexure - III

Area under cotton in the adopted villages of different districts

District Fazilka					
Sr No.	**Village**	**Net cultivated area (acre)**	**Area under cotton 2013 (acre)**	**Area under cotton 2012 (acre)**	**% increase/ decrease over 2012**
1	Panniwala	3950	1450	1600	9.38
2	Acharichi	3000	1050	1200	12.50
3	Usmaan Khera	3600	1060	1400	24.29
4	Jandwala Hanwanta	3125	1270	1500	15.33
5	Panjkosi	4800	1140	1750	34.86
6	Killianwali	6500	2032	3500	41.94
7	Danewala	5500	1860	2600	28.46
8	Saidanwali	7000	1778	2500	28.88
9	Dharmpura	5500	1100	1640	32.93
10	Haripura	3200	1340	1600	16.25
11	Pattrewala	3800	1050	1600	34.38
12	Ghallu	4800	1550	2200	29.55
13	Katehra	5005	3370	3500	3.71
14	Khippanwali	6500	3100	3300	6.06
15	Nihal Khera	6000	1800	2100	14.29
16	Bazidpur Kattianwali	3000	1630	1860	12.37
17	Bodiwala Pitha	2600	1800	1860	3.23
18	Danger Khera	6530	2185	2250	2.89
19	Kheowali Dhaab	3003	960	1400	31.43
20	Lakhewali Dhaab	6272	2328	3136	25.77
21	Sabuana	4000	990	1500	34.00
22	Shatirwala	2160	740	929	20.34
23	Tillanwali	850	248	298	16.78
24	Jandwala Mira Sangla	4070	1645	1954	15.81
25	Kabul Shah	4173	1725	2420	28.72
	Total	**108938**	**39201**	**49597**	**20.96**

Contd.....

District Bathinda					
Sr No.	**Village**	**Net cultivated area (acre)**	**Area under cotton 2013 (acre)**	**Area under cotton 2012 (acre)**	**% increase/ decrease over 2012**
1	Yatri	856	520	660	21.21
2	Mourh chrat singh	1800	987	1100	10.27
3	Marhi	554	364	400	9.00
4	Jodhpur pakhar	4384	2849	3100	8.10
5	Kutiwal klan	1772	802	834	3.84
6	Thamn garh	1279	540	593	8.94
7	Kutiwal khurd	1314	440	558	21.15
8	Ghumn klan	3534	1242	1432	13.27
9	Ghumn khurd	1417	570	588	3.06
10	Sukha singh wala	405	120	135	11.11
11	Ram nagar	4040	1356	1548	12.40
12	Kotli klan	3990	1487	1502	1.00
13	Bhai desa	1447	250	298	16.11
14	Mourh klan	3809	1776	1973	9.98
15	Rajgarh kube	3185	1768	1967	10.12
16	Mourh khurd	2276	1279	1386	7.72
17	Kotli khurd	2744	1677	1805	7.09
18	Swaech	1386	792	913	13.25
19	Kot bhara	2086	1385	1500	7.67
20	Ghari bara singh	1520	578	718	19.50
21	Rajgarh bhundarh	1310	589	640	7.97
22	Gso khana	720	230	275	16.36
23	Manak khana	603	178	205	13.17
24	Chthey wal	2370	1467	1800	18.50
25	Bhai bakhtour	1844	1522	1720	11.51
	Total	**50645**	**24768**	**27650**	**10.42**

Contd.....

District Mansa					
Sr No.	**Village**	**Net cultivated area (acre)**	**Area under cotton 2013 (acre)**	**Area under cotton 2012 (acre)**	**% increase/ decrease over 2012**
1	Burj bhalai ke	1562	1062	1162	-8.61
2	Ghuduwala	1474	1045	1095	-4.57
3	Ullk	1413	1032	1055	-2.18
4	Berewala	1328	1006	1037	-2.99
5	Jorkian	2252	1395	1436	-2.86
6	Tandian	1529	1087	1102	-1.36
7	Jherian	1825	1165	1225	-4.90
8	Mian	1292	895	917	-2.40
9	Jagatgarh bandra	950	838	900	-6.89
10	Tibbi	1350	1225	1250	-2.00
11	Kusla	3300	2055	3100	-33.71
12	Ramanandi	1212	686	738	-7.05
13	Dasaundia	1542	844	876	-3.65
14	Bajewala	4543	2959	3174	-6.77
15	Bhame klan	2685	1535	1619	-5.19
16	Chappianwali	1323	800	786	1.78
17	Lallianwali	1742	1315	1353	-2.81
18	Sahnianwali	1529	1083	1124	-3.65
19	Talwandi aklia	1756	1123	1195	-6.03
20	Dalieawali	1849	1168	1220	-4.26
21	Chalilanwali	1856	1165	1215	-4.12
22	Peron	2012	1394	1467	-4.98
23	Raipur	5920	4139	3784	9.38
24	Maakha	2930	1559	950	64.11
25	Banawali	1279	697	727	-4.13
	Total	**46752**	**33272**	**34507**	**3.58**

Contd.....

District Muktsar					
Sr No.	**Village**	**Net cultivated area (acre)**	**Area under cotton 2013 (acre)**	**Area under cotton 2012 (acre)**	**% increase/ decrease over 2012**
1	Balamgarh	2100	1530	1645	6.99
2	Gobind nagri	570	463	410	-12.93
3	Mour	1100	900	900	0.00
4	Badhai	1700	670	700	4.29
5	Ramgarh chungha	1676	1000	1400	28.57
6	Saddarwala	2014	839	1000	16.10
7	Kotli deon	1174	560	610	8.20
8	Bura gujjar	2569	738	850	13.18
9	Lambidhab	800	300	276	-8.70
10	Gulabewala	3104	600	620	3.23
11	Khappianwali	2500	500	550	9.09
12	Chak madrassa	1886	1532	1638	6.47
13	Madrasa	1250	1038	1051	1.24
14	Bhagsar	7180	1740	1537	-13.21
15	Lakhewali	3200	1845	1562	-18.12
16	Nandgarh	1600	664	608	-9.21
17	Gandhar	1118	750	728	-3.02
18	Samewali	2707	1780	1669	-6.65
19	Rahurawali	1320	980	1024	4.30
20	Goneana	1825	460	570	19.30
21	Canada basti	310	253	241	-4.98
22	Maha badhar	1310	490	537	8.75
23	Chak tamkot	1100	343	350	2.00
24	Khunde halal	1675	455	379	-20.05
25	Khunan kalan	3450	617	704	12.36
	Total	**49238**	**21047**	**21559**	**2.24**

Annexure-IV

Pattern of adoption of different Bt cotton hybrids in the adopted villages of different districts

District Fazilka					
Sr No.	**Village**	**Area under cotton**	**PAU recommended**	**GEAC Approved**	**From Other States**
1	Panniwala	1450	300	695	455
2	Acharichi	1050	286	685	79
3	Usmaan Khera	1060	285	664	111
4	Jandwala Hanwanta	1270	339	690	241
5	Panjkosi	1140	540	460	140
6	Killianwali	2032	780	762	490
7	Danewala	1860	960	725	175
8	Saidanwali	1778	780	873	125
9	Dharmpura	1100	590	305	205
10	Haripura	1340	590	466	284
11	Pattrewala	1050	470	469	111
12	Ghallu	1550	540	645	365
13	Katehra	3370	740	2145	485
14	Khippanwali	3100	695	1723	682
15	Nihal Khera	1800	392	1156	252
16	Bazidpur Kattianwali	1630	366	1078	186
17	Bodiwala Pitha	1800	348	1247	205
18	Danger Khera	2185	634	940	611
19	Kheowali Dhaab	960	278	592	90
20	Lakhewali Dhaab	2328	392	1520	416
21	Sabuana	990	240	640	110
22	Shatirwala	740	269	382	89
23	Tillanwali	248	95	123	30
24	Jandwala Mira Sangla	1645	245	1145	255
25	Kabul Shah	1725	741	889	95
	Total	**39201**	**11895**	**21019**	**6287**

Contd.....

District Bathinda					
Sr No.	**Village**	**Area under cotton**	**PAU recommended**	**GEAC Approved**	**From Other States**
1	Yatri	520	95	338	87
2	Mourh chrat singh	987	231	676	80
3	Marhi	364	98	255	11
4	Jodhpur pakhar	2849	348	2062	439
5	Kutiwal klan	802	245	525	32
6	Thamn garh	540	96	175	269
7	Kutiwal khurd	440	49	289	102
8	Ghumn klan	1242	341	512	389
9	Ghumn khurd	570	134	338	98
10	Sukha singh wala	120	42	64	14
11	Ram nagar	1356	412	824	120
12	Kotli klan	1487	646	787	54
13	Bhai desa	250	87	145	18
14	Mourh klan	1776	577	1082	107
15	Rajgarh kube	1768	513	1153	102
16	Mourh khurd	1279	328	868	83
17	Kotli khurd	1677	471	1100	106
18	Swaech	792	165	485	142
19	Kot bhara	1385	286	865	234
20	Ghari bara singh	578	167	361	50
21	Rajgarh bhundarh	589	165	327	97
22	Gso khana	230	59	146	25
23	Manak khana	178	50	114	14
24	Chthey wal	1467	123	1162	182
25	Bhai bakhtour	1522	151	1134	237
	Total	**24768**	**5879**	**15787**	**3092**

Contd.....

District Mansa					
Sr No.	**Village**	**Area under cotton**	**PAU recommended**	**GEAC Approved**	**From Other States**
1	Burj bhalai ke	1062	378	559	125
2	Ghuduwala	1045	277	630	138
3	Ullk	1032	502	320	210
4	Berewala	1006	154	599	253
5	Jorkian	1395	254	918	223
6	Tandian	1087	239	588	260
7	Jherian	1165	231	739	195
8	Mian	895	196	531	168
9	Jagatgarh bandra	838	274	537	27
10	Tibbi	1225	227	884	114
11	Kusla	2055	554	1438	63
12	Ramanandi	686	248	436	2.0
13	Dasaundia	844	172	535	137
14	Bajewala	2959	911	1947	101
15	Bhame klan	1535	724	700	111
16	Chappianwali	800	332	357	111
17	Lallianwali	1315	364	775	176
18	Sahnianwali	1083	484	419	180
19	Talwandi aklia	1123	580	415	128
20	Dalieawali	1168	248	804	116
21	Chalilanwali	1165	315	705	145
22	Peron	1394	193	1100	101
23	Raipur	4139	1156	2909	74
24	Maakha	1559	539	938	82
25	Banawali	697	254	311	132
	Total	**33272**	**9806**	**20094**	**3372**

Contd.....

District Muktsar					
Sr No.	**Village**	**Area under cotton**	**PAU recommended**	**GEAC Approved**	**From Other States**
1	Balamgarh	1530	433	1097	0
2	Gobind nagri	463	223	240	0
3	Mour	900	258	642	0
4	Badhai	670	141	529	0
5	Ramgarh chungha	1000	400	600	0
6	Saddarwala	839	150	689	0
7	Kotli deon	560	170	390	0
8	Bura gujjar	738	190	548	0
9	Lambidhab	300	105	195	0
10	Gulabewala	600	135	465	0
11	Khappianwali	500	70	404	26
12	Chak madrassa	1532	387	1145	0
13	Madrasa	1038	170	868	0
14	Bhagsar	1740	1200	540	0
15	Lakhewali	1845	900	945	0
16	Nandgarh	664	140	474	50
17	Gandhar	750	490	260	0
18	Samewali	1780	305	1355	120
19	Rahurawali	980	380	600	0
20	Goneana	460	140	320	0
21	Canada basti	253	45	208	0
22	Maha badhar	490	105	385	0
23	Chak tamkot	343	60	255	28
24	Khunde halal	455	160	295	0
25	Khunan kalan	617	165	452	0
	Total	**21047**	**6922**	**13901**	**224**

Annexure-V

Sowing pattern in the adopted villages of different districts

District Fazilka						
Sr No.	**Village**	**Area under cotton 2013 (acre)**	**1-30 April**	**1-15 May**	**16-31 May**	**1-15 June**
1	Panniwala	1450	0	850	600	0
2	Acharichi	1050	0	540	510	0
3	Usmaan Khera	1060	0	550	510	0
4	Jandwala Hanwanta	1270	0	720	550	0
5	Panjkosi	1140	0	640	490	10
6	Killianwali	2032	320	680	1032	0
7	Danewala	1860	180	780	815	85
8	Saidanwali	1778	82	731	880	85
9	Dharmpura	1100	0	460	640	0
10	Haripura	1340	50	390	615	285
11	Pattrewala	1050	0	560	490	0
12	Ghallu	1550	30	680	720	120
13	Katehra	3370	150	650	2030	540
14	Khippanwali	3100	120	922	1464	594
15	Nihal Khera	1800	50	865	720	165
16	Bazidpur Kattianwali	1630	60	765	740	65
17	Bodiwala Pitha	1800	0	915	735	150
18	Danger Khera	2185	120	991	1019	55
19	Kheowali Dhaab	960	0	450	510	0
20	Lakhewali Dhaab	2328	180	1020	1120	8
21	Sabuana	990	0	230	760	0
22	Shatirwala	740	0	70	670	0
23	Tillanwali	248	0	140	108	0
24	Jandwala Mira Sangla	1645	70	300	1235	40
25	Kabul Shah	1725	139	450	1100	36
	Total	**39201**	**1551**	**15349**	**20063**	**2238**

Contd.....

District Bathinda						
Sr No.	**Village**	**Area under cotton 2013 (acre)**	**1-30 April**	**1-15 May**	**16-31 May**	**1-15 June**
1	Yatri	520	61	273	172	14
2	Mourh chrat singh	987	121	420	353	93
3	Marhi	364	45	145	166	8
4	Jodhpur pakhar	2849	385	1167	953	344
5	Kutiwal klan	802	285	414	103	0
6	Thamn garh	540	159	345	36	0
7	Kutiwal khurd	440	70	324	46	0
8	Ghumn klan	1242	216	724	302	0
9	Ghumn khurd	570	56	292	222	0
10	Sukha singh wala	120	0	65	37	18
11	Ram nagar	1356	216	684	448	8
12	Kotli klan	1487	109	652	668	58
13	Bhai desa	250	12	138	94	6
14	Mourh klan	1776	78	905	677	116
15	Rajgarh kube	1768	62	887	707	112
16	Mourh khurd	1279	54	668	415	143
17	Kotli khurd	1677	52	797	715	113
18	Swaech	792	70	409	303	10
19	Kot bhara	1385	72	678	572	63
20	Ghari bara singh	578	18	247	313	0
21	Rajgarh bhundarh	589	98	270	203	18
22	Gso khana	230	15	145	45	25
23	Manak khana	178	15	92	68	3
24	Chthey wal	1467	60	835	523	49
25	Bhai bakhtour	1522	120	718	540	144
	Total	**24768**	**2449**	**12294**	**8681**	**1345**

Contd.....

District Mansa						
Sr No.	**Village**	**Area under cotton 2013 (acre)**	**1-30 April**	**1-15 May**	**16-31 May**	**1-15 June**
1	Burj bhalai ke	1062	30	665	346	21
2	Ghuduwala	1045	41	513	474	17
3	Ullk	1032	82	484	424	42
4	Berewala	1006	62	532	382	30
5	Jorkian	1395	35	612	723	25
6	Tandian	1087	44	586	429	28
7	Jherian	1165	28	468	611	58
8	Mian	895	18	412	387	78
9	Jagatgarh bandra	838	74	564	186	14
10	Tibbi	1225	81	615	502	27
11	Kusla	2055	214	1078	567	196
12	Ramanandi	686	52	272	350	12
13	Dasaundia	844	88	524	208	24
14	Bajewala	2959	118	1221	1445	175
15	Bhame klan	1535	229	728	503	75
16	Chappianwali	800	87	422	275	16
17	Lallianwali	1315	38	478	716	83
18	Sahnianwali	1083	56	502	511	14
19	Talwandi aklia	1123	85	670	360	8
20	Dalieawali	1168	76	560	520	12
21	Chalilanwali	1165	90	515	555	5
22	Peron	1394	45	624	710	15
23	Raipur	4139	176	2082	1691	190
24	Maakha	1559	110	812	608	29
25	Banawali	697	32	305	356	4
	Total	**33272**	**1991**	**16244**	**13839**	**1198**

Contd.....

District Muktsar						
Sr No.	**Village**	**Area under cotton 2013 (acre)**	**1-30 April**	**1-15 May**	**16-31 May**	**1-15 June**
1	Balamgarh	1530	100	600	740	90
2	Gobind nagri	463	20	203	240	0
3	Mour	900	0	400	500	0
4	Badhai	670	70	220	380	0
5	Ramgarh chungha	1000	410	540	50	0
6	Saddarwala	839	200	350	250	39
7	Kotli deon	560	215	325	20	0
8	Bura gujjar	738	220	390	128	0
9	Lambidhab	300	120	165	15	0
10	Gulabewala	600	230	340	30	0
11	Khappianwali	500	180	210	110	0
12	Chak madrassa	1532	650	782	100	0
13	Madrasa	1038	311	497	230	0
14	Bhagsar	1740	440	1200	100	0
15	Lakhewali	1845	844	568	433	0
16	Nandgarh	664	200	400	64	0
17	Gandhar	750	150	400	200	0
18	Samewali	1780	510	890	260	120
19	Rahurawali	980	150	400	430	0
20	Goneana	460	60	230	170	0
21	Canada basti	253	0	195	58	0
22	Maha badhar	490	70	230	190	0
23	Chak tamkot	343	0	230	113	0
24	Khunde halal	455	15	235	205	0
25	Khunan kalan	617	150	280	187	0
	Total	**21047**	**5315**	**10280**	**5203**	**249**

Annexure-VI

Fertilizer use (kg/acre) in the adopted villages of different districts

District Fazilka				
Sr No.	**Village**	**DAP**	**MOP**	**Zinc Sulphate**
1	Panniwala	180	120	55
2	Acharichi	130	141	60
3	Usmaan Khera	240	135	72
4	Jandwala Hanwanta	200	136	63
5	Panjkosi	230	42	52
6	Killianwali	235	60	42
7	Danewala	252	63	23
8	Saidanwali	265	56	38
9	Dharmpura	300	36	42
10	Haripura	348	43	33
11	Pattrewala	200	25	20
12	Ghallu	90	65	32
13	Katehra	101	55	42
14	Khippanwali	106	96	60
15	Nihal Khera	238	35	52
16	Bazidpur Kattianwali	120	29	26
17	Bodiwala Pitha	95	22	36
18	Danger Khera	232	73	112
19	Kheowali Dhaab	85	33	52
20	Lakhewali Dhaab	75	32	114
21	Sabuana	105	50	92
22	Shatirwala	69	30	90
23	Tillanwali	80	31	86
24	Jandwala Mira Sangla	96	43	99
25	Kabul Shah	110	28	85
	Total	**4182**	**1479**	**1478**

Contd.....

District Bathinda				
Sr No.	**Village**	**DAP**	**MOP**	**Zinc Sulphate**
1	Yatri	0	95	26
2	Mourh chrat singh	0	77	24
3	Marhi	0	24	26
4	Jodhpur pakhar	6	140	132
5	Kutiwal klan	10	33	40
6	Thamn garh	0	26	27
7	Kutiwal khurd	0	19	25
8	Ghumn klan	4	45	60
9	Ghumn khurd	0	22	25
10	Sukha singh wala	0	23	39
11	Ram nagar	0	25	42
12	Kotli klan	12	165	102
13	Bhai desa	0	53	48
14	Mourh klan	18	173	132
15	Rajgarh kube	3	98	92
16	Mourh khurd	0	63	98
17	Kotli khurd	11	109	125
18	Swaech	0	54	60
19	Kot bhara	4	281	200
20	Ghari bara singh	9	170	91
21	Rajgarh bhundarh	5	169	103
22	Gso khana	0	83	50
23	Manak khana	0	121	85
24	Chthey wal	0	179	180
25	Bhai bakhtour	4	325	329
	Total	**86**	**2376**	**2085**

Contd.....

District Mansa				
Sr No.	**Village**	**DAP**	**MOP**	**Zinc Sulphate**
1	Burj bhalai ke	48	82	54
2	Ghuduwala	30	56	45
3	Ullk	18	40	33
4	Berewala	20	66	45
5	Jorkian	60	110	55
6	Tandian	52	56	40
7	Jherian	92	60	45
8	Mian	51	40	55
9	Jagatgarh bandra	23	36	45
10	Tibbi	29	59	40
11	Kusla	18	40	33
12	Ramanandi	40	116	46
13	Dasaundia	32	69	58
14	Bajewala	15	48	55
15	Bhame klan	14	25	45
16	Chappianwali	92	32	30
17	Lallianwali	50	35	30
18	Sahnianwali	26	48	30
19	Talwandi aklia	30	108	75
20	Dalieawali	20	44	35
21	Chalilanwali	28	36	35
22	Peron	26	28	20
23	Raipur	25	48	50
24	Maakha	25	68	45
25	Banawali	16	32	25
	Total	**784**	**1204**	**937**

Contd.....

District Muktsar				
Sr No.	**Village**	**DAP**	**MOP**	**Zinc Sulphate**
1	Balamgarh	60	50	50
2	Gobind nagri	25	32	30
3	Mour	31	43	39
4	Badhai	78	88	75
5	Ramgarh chungha	60	40	25
6	Saddarwala	37	34	28
7	Kotli deon	40	22	10
8	Bura gujjar	60	28	11
9	Lambidhab	35	30	15
10	Gulabewala	25	40	20
11	Khappianwali	40	18	10
12	Chak madrassa	25	35	7
13	Madrasa	27	21	12
14	Bhagsar	72	30	16
15	Lakhewali	35	11	13
16	Nandgarh	35	30	18
17	Gandhar	30	20	10
18	Samewali	52	35	28
19	Rahurawali	34	24	19
20	Goneana	48	34	17
21	Canada basti	24	14	11
22	Maha badhar	84	24	12
23	Chak tamkot	18	11	9
24	Khunde halal	35	8	3
25	Khunan kalan	84	0	0
	Total	**978**	**597**	**369**

Annexure – VI(a)
Number of spray in the adopted villages of different districts

District Fazilka			
Sr. No.	**Village**		**Number of spray**
1	Acharchi	Participatory	7.00
		Non participatory	7.00
2	Jandwala hanwanta	Participatory	6.70
		Non participatory	7.00
3	Panniwala	Participatory	7.80
		Non participatory	8.00
4	Usmaan khera	Participatory	7.00
		Non participatory	7.00
5	Jandwala mira sangla	Participatory	8.10
		Non participatory	9.00
6	Kabul shah khubban	Participatory	7.00
		Non participatory	8.00
7	Kheowali dhaab	Participatory	5.90
		Non participatory	6.00
8	Lakhewali dhaab	Participatory	7.00
		Non participatory	8.50
9	Sabuana	Participatory	7.50
		Non participatory	9.00
10	Shatirwala	Participatory	8.90
		Non participatory	10.00
11	Tillianwali	Participatory	7.90
		Non participatory	9.00
12	Danewala	Participatory	7.90
		Non participatory	8.50

Contd.....

13	Dharmpura	Participatory	6.60
		Non participatory	8.00
14	Haripura	Participatory	7.10
		Non participatory	8.00
15	Killianwali	Participatory	7.10
		Non participatory	9.00
16	Panjkosi	Participatory	7.00
		Non participatory	8.50
17	Patrewala	Participatory	7.00
		Non participatory	8.00
18	Saidanwali	Participatory	6.00
		Non participatory	7.00
19	Bazidpur kattianwali	Participatory	7.50
		Non participatory	9.00
20	Bodiwala pitha	Participatory	7.50
		Non participatory	8.00
21	Danger khera	Participatory	8.10
		Non participatory	9.50
22	Ghallu	Participatory	6.80
		Non participatory	7.50
23	Katehra	Participatory	7.90
		Non participatory	9.00
24	Khippanwali	Participatory	7.20
		Non participatory	8.00
25	Nihal khera	Participatory	6.90
		Non participatory	8.00
	Overall Average	**Participatory**	**7.26**
		Non participatory	**8.18**

Contd.....

District Bathinda			
Sr. No.	**Village**		**Number of spray**
1	Yatri	Participatory	6.60
		Non participatory	7.00
2	Mourh chrat singh	Participatory	7.90
		Non participatory	8.30
3	Marhi	Participatory	7.50
		Non participatory	8.00
4	Jodhpur pakhar	Participatory	6.90
		Non participatory	7.30
5	Kutiwal klan	Participatory	4.00
		Non participatory	5.00
6	Thamn garh	Participatory	3.20
		Non participatory	7.00
7	Kutiwal khurd	Participatory	4.30
		Non participatory	8.00
8	Ghumn klan	Participatory	5.40
		Non participatory	6.00
9	Ghumn khurd	Participatory	4.00
		Non participatory	7.00
10	Sukha singh wala	Participatory	4.00
		Non participatory	6.00
11	Ram nagar	Participatory	4.00
		Non participatory	7.50
12	Kotli klan	Participatory	4.90
		Non participatory	5.00

Contd.....

13	Bhai desa	Participatory	4.40
		Non participatory	5.50
14	Mourh klan	Participatory	5.00
		Non participatory	7.50
15	Rajgarh kube	Participatory	4.00
		Non participatory	5.00
16	Mourh khurd	Participatory	5.00
		Non participatory	8.00
17	Kotli khurd	Participatory	4.30
		Non participatory	9.00
18	Swaech	Participatory	5.30
		Non participatory	9.00
19	Kot bhara	Participatory	4.50
		Non participatory	7.00
20	Ghari bara singh	Participatory	4.00
		Non participatory	8.00
21	Rajgarh bhundarh	Participatory	4.40
		Non participatory	6.00
22	Gso khana	Participatory	6.80
		Non participatory	7.50
23	Manak khana	Participatory	7.10
		Non participatory	11.00
24	Chthey wal	Participatory	4.00
		Non participatory	8.00
25	Bhai bakhtour	Participatory	4.00
	Yatri	Non participatory	4.50
	Overall Average	**Participatory**	**5.02**
		Non participatory	**7.12**

Contd.....

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District Mansa			
Sr. No.	**Village**		**Number of spray**
1	Burj bhalai ke	Participatory	5.60
		Non participatory	6.00
2	Ghuduwala	Participatory	6.90
		Non participatory	7.30
3	Ullk	Participatory	5.00
		Non participatory	8.00
4	Berewala	Participatory	5.90
		Non participatory	6.40
5	Jorkian	Participatory	4.00
		Non participatory	5.00
6	Mian	Participatory	3.20
		Non participatory	7.00
7	Tandian	Participatory	4.30
		Non participatory	8.00
8	Jherian	Participatory	5.40
		Non participatory	6.00
9	Jagatgarh bandra	Participatory	4.00
		Non participatory	7.00
10	Kusla	Participatory	4.00
		Non participatory	6.00
11	Tibbi	Participatory	4.00
		Non participatory	7.50
12	Ramanandi	Participatory	4.90
		Non participatory	5.00

Contd.....

13	Chappianwali	Participatory	4.40
		Non participatory	5.50
14	Bajewala	Participatory	5.00
		Non participatory	7.50
15	Lallianwali	Participatory	4.00
		Non participatory	5.00
16	Sahnianwali	Participatory	5.00
		Non participatory	8.00
17	Dasaundia	Participatory	4.30
		Non participatory	9.00
18	Bhame klan	Participatory	5.30
		Non participatory	9.00
19	Talwandi aklia	Participatory	4.50
		Non participatory	7.00
20	Raipur	Participatory	4.00
		Non participatory	8.00
21	Dalieawali	Participatory	4.40
		Non participatory	6.00
22	Maakha	Participatory	6.80
		Non participatory	7.50
23	Peron	Participatory	7.10
		Non participatory	11.0
24	Banawali	Participatory	4.00
		Non participatory	8.00
25	Chalilanwali	Participatory	4.00
		Non participatory	4.50
	Overall Average	**Participatory**	**4.80**
		Non participatory	**7.01**

Contd.....

District Muktsar			
Sr. No.	**Village**		**Number of spray**
1	Balmgarh	Participatory	4.40
		Non participatory	5.00
2	Gobind nagri	Participatory	4.20
		Non participatory	5.00
3	Mour	Participatory	4.00
		Non participatory	4.50
4	Badhai	Participatory	4.10
		Non participatory	4.00
5	Ramgarh chungah	Participatory	4.00
		Non participatory	4.50
6	Saddarwala	Participatory	4.80
		Non participatory	5.00
7	Kotli deon	Participatory	4.00
		Non participatory	4.50
8	Bura gujjar	Participatory	4.60
		Non participatory	5.00
9	Lambi dhab	Participatory	4.80
		Non participatory	7.00
10	Gulabe wala	Participatory	4.60
		Non participatory	5.00
11	Khappian wali	Participatory	4.90
		Non participatory	5.00
12	Chak madrassa	Participatory	4.60
		Non participatory	5.50

Contd.....

13	Madrassa	Participatory	4.40
		Non participatory	5.50
14	Bhagsar	Participatory	5.20
		Non participatory	5.50
15	Lakhewali	Participatory	4.50
		Non participatory	5.00
16	Nandgarh	Participatory	4.10
		Non participatory	5.00
17	Gandhar	Participatory	3.70
		Non participatory	4.50
18	Samewali	Participatory	3.40
		Non participatory	4.00
19	Rahurianwali	Participatory	4.50
		Non participatory	6.00
20	Goneana	Participatory	4.70
		Non participatory	5.50
21	Canada basti	Participatory	4.70
		Non participatory	5.50
22	Maha badhar	Participatory	5.00
		Non participatory	6.00
23	Chak tamkot	Participatory	4.70
		Non participatory	6.00
24	Khunde halal	Participatory	4.90
		Non participatory	5.50
25	Khunan kalan	Participatory	4.40
		Non participatory	5.00
	Overall Average	**Participatory**	**4.45**
		Non participatory	**5.16**

Annexure -VII

Expenditure incurred on various inputs in the adopted villages of different districts

District Fazilka							
Sr.No.	**Village**		**Seed and sowing (Rs/acre)**	**Fertilizer (Rs/acre)**	**Pesticides (Rs/acre)**	**Weed management (Rs/acre)**	**Total input (Rs/acre)**
1	**Acharchi**	Participatory^	3260.0	2143.0	2440.0	2033.0	9876.0
		Non-Participatory^^	3750.0	2600.0	2800.0	2100.0	11250.0
2	**Jandwala hanwanta**	Participatory	4746.0	2072.0	1853.0	1980.0	10651.0
		Non-Participatory	4870.0	2430.0	2555.0	2018.0	11873.0
3	**Panniwala**	Participatory	4415.0	2255.0	4124.0	2030.0	12824.0
		Non-Participatory	4725.0	2097.0	4220.0	2158.0	13200.0
4	**Usmaan khera**	Participatory	4378.0	1917.0	2871.0	2148.0	11314.0
		Non-Participatory	4495.0	2112.0	3610.0	2258.0	12475.0
5	**Jandwala mira sangla**	Participatory	3690.0	2470.0	3850.0	2630.0	12640.0
		Non-Participatory	4350.0	2850.0	4500.0	2750.0	14450.0
6	**Kabul shah khubban**	Participatory	3770.0	2330.0	3860.0	2370.0	12330.0
		Non-Participatory	4050.0	2850.0	4300.0	2450.0	13650.0
7	**Kheowali dhaab**	Participatory	3310.0	2190.0	3440.0	2305.0	11245.0
		Non-Participatory	3650.0	3075.0	3975.0	2350.0	13050.0
8	**Lakhewali dhaab**	Participatory	3360.0	2280.0	3295.0	2153.0	11088.0
		Non-Participatory	3450.0	3075.0	3925.0	2200.0	12650.0
9	Sabuana	Participatory	3670.0	2260.0	3140.0	2340.0	11410.0
		Non-Participatory	3700.0	2975.0	3825.0	2350.0	12850.0
10	**Shatirwala**	Participatory	4210.0	2170.0	3730.0	2730.0	12840.0
		Non-Participatory	4550.0	2650.0	4325.0	2800.0	14325.0
11	**Tillianwali**	Participatory	3520.0	2867.0	3520.0	2099.0	12006.0
		Non-Participatory	3650.0	3075.0	4100.0	2200.0	13025.0
12	**Danewala**	Participatory	4495.0	2593.0	3308.0	1982.0	12378.0
		Non-Participatory	4840.0	2662.0	4135.0	2065.0	13702.0

Contd.....

13	**Dharmpura**	Participatory	4786.0	2610.0	2274.0	2117.0	11787.0
		Non-Participatory	4945.0	2940.0	3110.0	2364.0	13359.0
14	**Haripura**	Participatory	4697.0	2681.0	2884.0	2082.0	12344.0
		Non-Participatory	4840.0	2547.0	3770.0	2190.0	13347.0
15	**Killianwali**	Participatory	4933.0	2485.0	2238.0	1963.0	11619.0
		Non-Participatory	5270.0	2649.0	2425.0	2350.0	12694.0
16	**Panjkosi**	Participatory	4803.0	2721.0	2444.0	1463.0	11431.0
		Non-Participatory	4970.0	2842.0	3880.0	1693.0	13385.0
17	**Patrewala**	Participatory	4843.0	2100.0	2891.0	1782.0	11616.0
		Non-Participatory	4840.0	2747.0	3840.0	2010.0	13437.0
18	**Saidanwali**	Participatory	3800.0	2097.0	2409.0	1863.0	10169.0
		Non-Participatory	4040.0	2601.0	2553.0	2115.0	11309.0
19	**Bazidpur kattianwali**	Participatory	5580.0	2135.0	2395.0	1597.0	11707.0
		Non-Participatory	5800.0	2828.0	3910.0	1810.0	14348.0
20	**Bodiwala pitha**	Participatory	4500.0	1938.0	3029.0	1562.0	11029.0
		Non-Participatory	4650.0	2172.0	3215.0	1780.0	11817.0
21	**Danger khera**	Participatory	4550.0	2052.0	2710.0	1428.0	10740.0
		Non-Participatory	4650.0	2150.0	2747.0	1628.0	11175.0
22	**Ghallu**	Participatory	5040.0	2180.0	2568.0	1680.0	11468.0
		Non-Participatory	5250.0	2200.0	2700.0	1980.0	12130.0
23	**Katehra**	Participatory	4000.0	2349.0	2110.0	1388.0	9847.0
		Non-Participatory	4206.0	2400.0	2312.0	1610.0	10528.0
24	**Khippanwali**	Participatory	4100.0	2390.0	2300.0	1497.0	10287.0
		Non-Participatory	4200.0	2430.0	2410.0	1738.0	10778.0
25	**Nihal khera**	Participatory	4300.0	2100.0	2210.0	1816.0	10426.0
		Non-Participatory	4650.0	2150.0	2310.0	2030.0	11140.0
	Overall average	**Participatory**	**4270.7**	**2295.4**	**2875.7**	**1961.5**	**11403.3**
		Non-Participatory	**4495.6**	**2604.3**	**3418.1**	**2119.9**	**12637.9**

Sample size: ^ 10 farmers/village ^^ 2 farmers/village

Contd.....

District Bathinda							
Sr.No.	**Village**		**Seed and sowing (Rs/acre)**	**Fertilizer (Rs/acre)**	**Pesticides (Rs/acre)**	**Weed management (Rs/acre)**	**Total input (Rs/acre)**
1	Yatri	Participatory^	6300.0	1488.5	754.5	1372.5	9915.5
		Non participatory^^	6425.0	1500.0	2150.0	2285.0	12360.0
2	Mourh chrat singh	Participatory	6405.0	1402.5	627.0	1136.3	9570.8
		Non participatory	6540.0	1500.0	2200.0	1355.0	11595.0
3	Marhi	Participatory	4200.0	1518.5	570.0	1125.0	7413.5
		Non participatory	4525.0	2100.0	2130.0	1320.0	10075.0
4	Jodhpur pakhar	Participatory	4780.0	1945.8	565.0	946.3	8237.1
		Non participatory	4800.0	1439.0	2780.0	1040.0	10059.0
5	Kutiwal klan	Participatory	5680.0	2091.7	592.1	1322.1	9685.8
		Non participatory	5765.0	1572.0	1200.0	1750.0	10287.0
6	Thamn garh	Participatory	4108.8	1441.8	565.0	946.3	7061.9
		Non participatory	4200.0	2100.0	2780.0	1040.0	10120.0
7	Kutiwal khurd	Participatory	5500.0	1534.8	657.5	998.8	8691.1
		Non participatory	5750.0	2200.0	1550.0	1360.0	10860.0
8	Ghumn klan	Participatory	6300.0	1996.1	754.1	1372.1	10422.2
		Non participatory	6425.0	1439.0	2150.0	2085.0	12099.0
9	Ghumn khurd	Participatory	5320.0	1541.5	652.1	1322.1	8835.6
		Non participatory	5415.0	2100.0	1540.0	1750.0	10805.0
10	Sukha singh wala	Participatory	5300.0	1538.5	620.0	1510.0	8968.5
		Non participatory	5865.0	1900.0	1790.0	2160.0	11715.0
11	Ram nagar	Participatory	4126.3	1539.3	650.0	987.1	7302.7
		Non participatory	6550.0	2000.0	1790.0	1040.0	11380.0
12	Kotli klan	Participatory	5500.0	2010.5	627.5	1061.3	9199.3
		Non participatory	5925.0	1906.0	1350.0	1150.0	10331.0

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13	Bhai desa	Participatory	3597.5	1745.3	570.0	1092.5	7005.3
		Non participatory	4500.0	2400.0	1550.0	1600.0	10050.0
14	Mourh klan	Participatory	4100.0	2234.5	572.1	1050.0	7956.6
		Non participatory	4270.0	1291.0	1490.0	1800.0	8851.0
15	Rajgarh kube	Participatory	5300.0	2084.0	562.1	990.0	8936.1
		Non participatory	5430.0	2036.0	1600.0	1280.0	10346.0
16	Mourh khurd	Participatory	6300.0	1638.8	550.0	1113.8	9602.6
		Non participatory	6440.0	2400.0	1250.0	1450.0	11540.0
17	Kotli khurd	Participatory	5725.8	2193.0	552.5	976.3	9447.6
		Non participatory	5875.0	1489.0	1500.0	1160.0	10024.0
18	Swaech	Participatory	5122.5	1739.3	595.1	965.0	8421.9
		Non participatory	5220.0	2100.0	1800.0	1450.0	10570.0
19	Kot bhara	Participatory	4420.0	2042.8	730.0	1207.1	8399.9
		Non participatory	6168.0	1972.0	170.0	1240.0	9550.0
20	Ghari bara singh	Participatory	3705.0	1936.8	807.1	1402.5	7851.4
		Non participatory	6500.0	2700.0	1340.0	1690.0	12230.0
21	Rajgarh bhundarh	Participatory	3900.0	1912.8	780.0	1411.3	8004.1
		Non participatory	6500.0	2500.0	2200.0	1530.0	12730.0
22	Gso khana	Participatory	5852.0	1594.0	809.0	1658.0	9913.0
		Non participatory	6910.0	2922.0	815.0	2118.0	12765.0
23	Manak khana	Participatory	5918.0	1543.5	580.0	1125.0	9166.5
		Non participatory	6525.0	2100.0	1782.0	1194.0	11601.0
24	Chthey wal	Participatory	3651.3	1427.5	798.0	1552.1	7428.9
		Non participatory	5100.0	1804.0	2100.0	1680.0	10684.0
25	Bhai bakhtour	Participatory	5800.0	1415.0	710.0	1110.0	9035.0
		Non participatory	6500.0	2118.0	2100.0	1120.0	11838.0
	Overall average	**Participatory**	**5076.5**	**1742.3**	**650**	**1190.1**	**8658.9**
		Non participatory	**5764.9**	**1983.5**	**1724.3**	**1505.9**	**10978.6**

Sample size: ^ 10 farmers/village ^^ 2 farmers/village

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District Mansa							
Sr.No.	**Village**		**Seed and sowing (Rs/acre)**	**Fertilizer (Rs/acre)**	**Pesticides (Rs/acre)**	**Weed management (Rs/acre)**	**Total input (Rs/acre)**
1	Burj bhalai ke	Participatory	5251.0	1621.5	1250.0	990.0	9112.5
		Non participatory	5300.0	2042.5	1520.0	1100.0	9962.5
2	Ghuduwala	Participatory	3360.0	1552.9	1219.0	1107.0	7238.9
		Non participatory	3500.0	1563.5	1259.0	1350.0	7672.5
3	Ullk	Participatory	4575.0	2090.5	1575.0	1500.0	9740.5
		Non participatory	4600.0	2310.0	1720.0	1675.0	10305.0
4	Berewala	Participatory	4760.0	1259.5	1326.0	1499.0	8844.5
		Non participatory	4612.5	1840.0	1486.0	1446.3	9384.8
5	Jorkian	Participatory	6130.0	1578.8	860.0	1536.0	10104.8
		Non participatory	6200.0	1669.0	1190.0	1660.0	10719.0
6	Mian	Participatory	4900.0	1312.0	1734.0	1470.0	9416.0
		Non participatory	5100.0	1746.0	1850.0	1720.0	10416.0
7	Tandian	Participatory	5235.0	1479.2	1959.0	1218.0	9891.2
		Non participatory	5662.0	1550.0	2180.0	1620.0	11012.0
8	Jherian	Participatory	5470.0	1972.2	1138.0	1484.0	10064.2
		Non participatory	5600.0	2112.5	1520.0	1720.0	10952.5
9	Jagatgarh bandra	Participatory	4815.0	1979.8	1260.0	1526.0	9580.8
		Non participatory	5150.0	2180.0	1735.0	1720.0	10785.0
10	Kusla	Participatory	4565.0	1907.0	1468.0	1470.0	9410.0
		Non participatory	4800.0	2212.5	1520.0	1520.0	10052.5
11	Tibbi	Participatory	4850.0	1768.7	1160.0	1484.0	9262.7
		Non participatory	5200.0	1925.0	1325.0	1700.0	10150.0
12	Ramanandi	Participatory	5455.0	1251.0	1088.0	1095.0	8889.0
		Non participatory	5600.0	1870.5	1305.0	1225.0	10000.5
13	Chappianwali	Participatory	5090.0	1406.5	992.0	2684.0	10172.5
		Non participatory	5200.0	1500.0	1240.0	1610.0	9550.0

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14	Bajewala	Participatory	6290.0	1555.3	983.0	2684.0	11512.3
		Non participatory	6400.0	2171.5	1440.0	3110.0	13121.5
15	Lallianwali	Participatory	4560.0	1249.5	768.0	1558.0	8135.5
		Non participatory	4700.0	1432.5	1305.0	1755.0	9192.5
16	Sahnianwali	Participatory	6960.0	1497.4	1614.0	1680.0	11751.4
		Non participatory	7150.0	2022.5	1720.0	1500.0	12392.5
17	Dasaundia	Participatory	5330.0	1235.5	1713.0	1582.0	9860.5
		Non participatory	6033.0	1687.5	1820.0	1812.0	11352.5
18	Bhame klan	Participatory	6375.0	1830.0	1805.0	1641.0	11651.0
		Non participatory	6750.0	2058.0	2050.0	1880.0	12738.0
19	Talwandi aklia	Participatory	5810.0	1467.2	841.0	1478.0	9596.2
		Non participatory	6275.0	1634.5	1160.0	1720.0	10789.5
20	Raipur	Participatory	4510.0	1610.6	1929.0	1468.0	9517.6
		Non participatory	5050.0	1743.5	2180.0	1750.0	10723.5
21	Dalieawali	Participatory	5850.0	1406.7	1254.0	1476.0	9986.7
		Non participatory	5200.0	1435.0	1405.0	2015.0	10055.0
22	Maakha	Participatory	4822.0	1403.0	1360.0	1426.0	9011.0
		Non participatory	5502.0	1480.0	1400.0	1720.0	10102.0
23	Peron	Participatory	4540.0	1322.5	2630.0	960.0	9452.5
		Non participatory	4900.0	1330.0	3042.0	1334.0	10606.0
24	Banawali	Participatory	4700.0	2014.0	1683.0	1265.0	9662.0
		Non participatory	5350.0	2140.0	1720.0	1860.0	11070.0
25	Chalilanwali	Participatory	4460.0	1922.1	991.0	1432.0	8805.1
		Non participatory	5350.0	2210.0	1025.0	1840.0	10425.0
	Overall Average	**Participatory**	**5146.5**	**1587.7**	**1384**	**1508.4**	**9626.6**
		Non participatory	**5407.4**	**1834.7**	**1604.7**	**1694.5**	**10541.3**

Sample size: ^ 10 farmers/village ^^ 2 farmers/village

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District Muktsar							
Sr.No.	**Village**		**Seed and sowing (Rs/acre)**	**Fertilizer (Rs/acre)**	**Pesticides (Rs/acre)**	**Weed management (Rs/acre)**	**Total input (Rs/acre)**
1	**Balmgarh**	Participatory	3295.0	2068.3	838.8	1761.0	7963.1
		Non participatory	3575.0	1665.8	1003.0	2412.5	8656.3
2	**Gobind nagri**	Participatory	3890.0	2287.6	759.9	1490.0	8427.5
		Non participatory	4700.0	2437.0	1355.0	2202.5	10694.5
3	**Mour**	Participatory	4050.0	2397.1	626.2	1452.5	8525.8
		Non participatory	4350.0	2092.2	1069.0	1550.0	9061.2
4	**Badhai**	Participatory	3422.5	2125.2	663.7	1592.5	7803.9
		Non participatory	4050.0	2597.2	1065.0	1950.0	9662.2
5	**Ramgarh chungah**	Participatory	3955.0	1688.0	692.1	2352.5	8687.6
		Non participatory	4225.0	2417.8	868.0	2350.0	9860.8
6	**Saddarwala**	Participatory	2995.0	1775.9	898.8	2760.0	8429.7
		Non participatory	3025.0	2128.0	1293.0	3087.5	9533.5
7	**Kotli deon**	Participatory	3225.0	1732.8	854.8	2390.0	8202.6
		Non participatory	3725.0	2501.4	940.0	2400.0	9566.4
8	**Bura gujjar**	Participatory	3345.0	1949.8	1025.9	2550.0	8870.7
		Non participatory	3650.0	2179.0	1138.0	2562.5	9529.5
9	Lambi dhab	Participatory	3310.0	2049.4	857.0	2495.0	8711.4
		Non participatory	3825.0	2338.6	1669.0	3025.0	10857.6
10	**Gulabe wala**	Participatory	3770.0	2021.6	762.9	2675.0	9229.5
		Non participatory	4025.0	2232.0	1238.0	2887.5	10382.5
11	**Khappian wali**	Participatory	3805.0	2372.0	831.2	2212.5	9220.7
		Non participatory	4450.0	3364.0	1275.5	2475.0	11564.5
12	**Chak madrassa**	Participatory	3295.0	1794.9	870.4	2160.0	8120.3
		Non participatory	3325.0	2179.6	1568.0	2725.0	9797.6
13	**Madrassa**	Participatory	3870.0	1785.0	765.9	2310.0	8730.9
		Non participatory	4475.0	3217.0	1070.5	2837.5	11600.0

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14	**Bhagsar**	Participatory	3295.0	2686.4	901.7	2120.0	9003.1
		Non participatory	3350.0	3044.0	1020.5	3000.0	10414.5
15	**Lakhewali**	Participatory	3280.0	1884.3	794.7	2307.5	8266.5
		Non participatory	3350.0	2892.0	1225.5	2637.5	10105.0
16	**Nandgarh**	Participatory	3300.0	1257.7	707.4	1475.0	6740.1
		Non participatory	3525.0	1202.4	985.5	2075.0	7787.9
17	**Gandhar**	Participatory	3467.0	1272.0	567.2	2270.0	7576.2
		Non participatory	4662.5	2224.9	1049.0	3000.0	10936.4
18	**Samewali**	Participatory	3645.0	1606.2	485.2	1807.5	7543.9
		Non participatory	4225.0	2608.6	663.0	2400.0	9896.6
19	**Rahurianwali**	Participatory	3055.0	1552.3	834.1	1462.5	6903.9
		Non participatory	3350.0	1723.2	1269.0	1625.0	7967.2
20	**Goneana**	Participatory	3100.0	1866.5	866.4	1365.0	7197.9
		Non participatory	3375.0	2084.0	1208.0	1525.0	8192.0
21	**Canada basti**	Participatory	3065.0	1807.5	847.4	1377.5	7097.4
		Non participatory	3325.0	2578.6	1375.5	1612.5	8891.6
22	**Maha badhar**	Participatory	3225.0	1892.5	968.8	1690.0	7776.3
		Non participatory	3725.0	2204.0	1263.0	2190.0	9382.0
23	**Chak tamkot**	Participatory	3000.0	1746.8	928.6	1670.0	7345.4
		Non participatory	3425.0	1959.6	1188.0	1725.0	8297.6
24	**Khunde halal**	Participatory	3845.0	1989.6	1056.1	1660.0	8550.7
		Non participatory	4600.0	2375.0	1238.0	1950.0	10163.0
25	**Khunan kalan**	Participatory	3150.0	2396.4	773.5	1547.5	7867.4
		Non participatory	3700.0	2613.6	1009.0	1625.0	8947.6
	Overall Average	**Participatory**	**3426.2**	**1920.2**	**807.1**	**1958.1**	**8111.6**
		Non participatory	**3840.5**	**2354.4**	**1161.8**	**2313.2**	**9669.9**

Sample size: ^ 10 farmers/village ^^ 2 farmers/village

Annexure-VIII

Picking cost in the adopted villages of different districts

District Fazilka						
Sr. No.	**Village**		**Total input cost (per acre)**	**Yield (q/per acre)**	**Total picking cost (per acre)**	**Total cost (per acre)**
1	**Acharchi**	Participatory	9876.0	6.5	3200.0	13076.0
		Non participatory	11250.0	6.0	2800.0	14050.0
2	**Jandwala hanwanta**	Participatory	10651.0	6.5	3200.0	13851.0
		Non participatory	11873.0	6.0	2850.0	14723.0
3	**Panniwala**	Participatory	12824.0	6.3	3125.0	15949.0
		Non participatory	13200.0	5.5	2700.0	15900.0
4	**Usmaan khera**	Participatory	11314.0	6.3	3100.0	14414.0
		Non participatory	12475.0	6.0	2900.0	15375.0
5	**Jandwala mira sangla**	Participatory	12640.0	6.5	3200.0	15840.0
		Non participatory	14450.0	6.0	2900.0	17350.0
6	**Kabul shah khubban**	Participatory	12330.0	6.4	3175.0	15505.0
		Non participatory	13650.0	5.5	2700.0	16350.0
7	**Kheowali dhaab**	Participatory	11245.0	6.0	3000.0	14245.0
		Non participatory	13050.0	5.5	2750.0	15800.0
8	**Lakhewali dhaab**	Participatory	11088.0	6.0	3000.0	14088.0
		Non participatory	12650.0	5.0	2480.0	15130.0
9	Sabuana	Participatory	11410.0	6.5	3225.0	14635.0
		Non participatory	12850.0	5.0	2480.0	15330.0
10	**Shatirwala**	Participatory	12840.0	6.0	3000.0	15840.0
		Non participatory	14325.0	5.5	2870.0	17195.0
11	**Tillianwali**	Participatory	12006.0	6.0	3350.0	15356.0
		Non participatory	13025.0	5.8	2860.0	15885.0
12	**Danewala**	Participatory	12378.0	6.6	3275.0	15653.0
		Non participatory	13702.0	5.5	2750.0	16452.0

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13	**Dharmpura**	Participatory	11787.0	6.2	3100.0	14887.0
		Non participatory	13359.0	5.5	2750.0	16109.0
14	**Haripura**	Participatory	12344.0	6.3	3050.0	15394.0
		Non participatory	13347.0	5.8	2875.0	16222.0
15	**Killianwali**	Participatory	11619.0	6.6	3150.0	14769.0
		Non participatory	12694.0	5.8	2810.0	15504.0
16	**Panjkosi**	Participatory	11431.0	6.1	3025.0	14456.0
		Non participatory	13385.0	5.8	2820.0	16205.0
17	**Patrewala**	Participatory	11616.0	6.3	3000.0	14616.0
		Non participatory	13437.0	5.8	2875.0	16312.0
18	**Saidanwali**	Participatory	10169.0	6.8	3375.0	13544.0
		Non participatory	11309.0	5.8	2875.0	14184.0
19	**Bazidpur kattianwali**	Participatory	11707.0	6.7	3200.0	14907.0
		Non participatory	14348.0	6.0	3000.0	17348.0
20	**Bodiwala pitha**	Participatory	11029.0	6.3	3150.0	14179.0
		Non participatory	11817.0	5.8	2875.0	14692.0
21	**Danger khera**	Participatory	10740.0	6.2	3100.0	13840.0
		Non participatory	11175.0	5.8	2875.0	14050.0
22	**Ghallu**	Participatory	11468.0	6.8	3200.0	14668.0
		Non participatory	12130.0	6.2	3000.0	15130.0
23	**Katehra**	Participatory	9847.0	6.0	2980.0	12827.0
		Non participatory	10528.0	5.5	2900.0	13428.0
24	**Khippanwali**	Participatory	10287.0	6.0	3000.0	13287.0
		Non participatory	10778.0	5.0	2480.0	13258.0
25	**Nihal khera**	Participatory	10426.0	6.5	3208.0	13634.0
		Non participatory	11140.0	5.0	2490.0	13630.0
	Overall average	**Participatory**	**11403.3**	**6.3**	**3135.5**	**14538.8**
		Non participatory	**12637.9**	**5.6**	**2786.6**	**15424.5**

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District Bathinda						
Sr.No.	**Village**		**Total input cost (per acre)**	**Yield (q/per acre)**	**Total picking cost (per acre)**	**Total cost (per acre)**
1	Yatri	Participatory	9915.5	7.3	4114.4	14029.9
		Non participatory	12360.0	7.2	4034.0	16394.0
2	Mourh chrat singh	Participatory	9570.8	7.0	3966.8	13537.6
		Non participatory	11595.0	6.0	3368.2	14963.2
3	Marhi	Participatory	7413.5	6.5	3660.4	11073.9
		Non participatory	10075.0	6.3	3496.9	13571.9
4	Jodhpur pakhar	Participatory	8237.1	6.7	3796.6	12033.6
		Non participatory	10059.0	6.5	3608.8	13667.8
5	Kutiwal klan	Participatory	9685.8	6.5	3688.8	13374.6
		Non participatory	10287.0	5.9	3301.1	13588.1
6	Thamn garh	Participatory	7061.9	6.8	3830.6	10892.5
		Non participatory	10120.0	6.0	3357.0	13477.0
7	Kutiwal khurd	Participatory	8691.1	6.5	3688.8	12379.8
		Non participatory	10860.0	6.0	3357.0	14217.0
8	Ghumn klan	Participatory	10422.2	6.0	3405.0	13827.2
		Non participatory	12099.0	5.9	3301.1	15400.1
9	Ghumn khurd	Participatory	8835.6	6.0	3405.0	12240.6
		Non participatory	10805.0	5.8	3245.1	14050.1
10	Sukha singh wala	Participatory	8968.5	6.5	3688.8	12657.3
		Non participatory	11715.0	6.3	3524.9	15239.9
11	Ram nagar	Participatory	7302.7	6.0	3405.0	10707.7
		Non participatory	11380.0	5.5	3077.3	14457.3
12	Kotli klan	Participatory	9199.3	6.0	3405.0	12604.3
		Non participatory	10331.0	5.2	2915.0	13246.0
13	Bhai desa	Participatory	7005.3	6.5	3711.5	10716.8
		Non participatory	10050.0	6.3	3536.0	13586.0

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14	Mourh klan	Participatory	7956.6	6.5	3688.8	11645.3
		Non participatory	8851.0	6.0	3357.0	12208.0
15	Rajgarh kube	Participatory	8936.1	6.2	3524.2	12460.2
		Non participatory	10346.0	6.1	3407.4	13753.4
16	Mourh khurd	Participatory	9602.6	6.3	3592.3	13194.8
		Non participatory	11540.0	5.9	3295.5	14835.5
17	Kotli khurd	Participatory	9447.6	6.3	3546.9	12994.4
		Non participatory	10024.0	6.0	3357.0	13381.0
18	Swaech	Participatory	8421.9	6.3	3552.6	11974.4
		Non participatory	10570.0	6.0	3357.0	13927.0
19	Kot bhara	Participatory	8399.9	6.0	3422.0	11821.9
		Non participatory	9550.0	5.8	3256.3	12806.3
20	Ghari bara singh	Participatory	7851.4	6.0	3405.0	11256.4
		Non participatory	12230.0	5.8	3245.1	15475.1
21	Rajgarh bhundarh	Participatory	8004.1	6.5	3688.8	11692.8
		Non participatory	12730.0	6.2	3485.7	16215.7
22	Gso khana	Participatory	9913.0	6.5	3688.8	13601.8
		Non participatory	12765.0	6.1	3424.1	16189.1
23	Manak khana	Participatory	9166.5	7.0	3972.5	13139.0
		Non participatory	11601.0	6.0	3357.0	14958.0
24	Chthey wal	Participatory	7428.9	6.5	3688.8	11117.6
		Non participatory	10684.0	6.0	3357.0	14041.0
25	Bhai bakhtour	Participatory	9035.0	6.5	3688.8	12723.8
		Non participatory	11838.0	6.0	3357.0	15195.0
	Overall Average	**Participatory**	**8658.9**	**6.4**	**3632.0**	**12290.9**
		Non participatory	**10978.6**	**6.0**	**3357.0**	**14335.6**

District Mansa						
Sr. No.	**Village**		**Total input cost (per acre)**	**Yield (q/per acre)**	**Total picking cost (per acre)**	**Total cost (per acre)**
1	Burj bhalai ke	Participatory	9112.5	6.1	3050.0	12162.5
		Non participatory	9962.5	5.5	2728.0	12690.5
2	Ghuduwala	Participatory	7238.9	6.0	3000.0	10238.9
		Non participatory	7672.5	5.6	2777.6	10450.1
3	Ullk	Participatory	9740.5	6.9	3450.0	13190.5
		Non participatory	10305.0	6.5	3224.0	13529.0
4	Berewala	Participatory	8844.5	6.1	3050.0	11894.5
		Non participatory	9384.8	5.8	2876.8	12261.6
5	Jorkian	Participatory	10104.8	5.5	2750.0	12854.8
		Non participatory	10719.0	5.0	2480.0	13199.0
6	Mian	Participatory	9416.0	7.5	3750.0	13166.0
		Non participatory	10416.0	6.9	3422.4	13838.4
7	Tandian	Participatory	9891.2	6.3	3150.0	13041.2
		Non participatory	11012.0	6.0	2976.0	13988.0
8	Jherian	Participatory	10064.2	5.6	2800.0	12864.2
		Non participatory	10952.5	5.0	2480.0	13432.5
9	Jagatgarh bandra	Participatory	9580.8	6.1	3050.0	12630.8
		Non participatory	10785.0	5.8	2876.8	13661.8
10	Kusla	Participatory	9410.0	6.5	3250.0	12660.0
		Non participatory	10052.5	6.2	3075.2	13127.7
11	Tibbi	Participatory	9262.7	5.2	2600.0	11862.7
		Non participatory	10150.0	5.0	2480.0	12630.0
12	Ramanandi	Participatory	8889.0	8.1	4050.0	12939.0
		Non participatory	10000.5	7.0	3472.0	13472.5
13	Chappianwali	Participatory	10172.5	4.4	2200.0	12372.5
		Non participatory	9550.0	4.2	2083.2	11633.2

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14	Bajewala	Participatory	11512.3	4.2	2100.0	13612.3
		Non participatory	13121.5	4.3	2132.8	15254.3
15	Lallianwali	Participatory	8135.5	6.5	3250.0	11385.5
		Non participatory	9192.5	6.5	3224.0	12416.5
16	Sahnianwali	Participatory	11751.4	7.1	3550.0	15301.4
		Non participatory	12392.5	6.3	3124.8	15517.3
17	Dasaundia	Participatory	9860.5	7.1	3550.0	13410.5
		Non participatory	11352.5	6.8	3372.8	14725.3
18	Bhame klan	Participatory	11651.0	6.1	3076.0	14701.0
		Non participatory	12738.0	5.9	2926.4	15664.4
19	Talwandi aklia	Participatory	9596.2	7.8	4000.0	13496.2
		Non participatory	10789.5	6.2	3075.2	13864.7
20	Raipur	Participatory	9517.6	6.1	3300.0	12567.6
		Non participatory	10723.5	5.5	2672.0	13451.5
21	Dalieawali	Participatory	9986.7	4.7	2300.0	12336.7
		Non participatory	10055.0	4.8	2300.0	12435.8
22	Maakha	Participatory	9011.0	6.9	3500.0	12461.0
		Non participatory	10102.0	6.5	3200.0	13326.0
23	Peron	Participatory	9452.5	5.5	2875.0	12202.5
		Non participatory	10606.0	5.2	2500.0	13185.2
24	Banawali	Participatory	9662.0	7.0	3600.0	13162.0
		Non participatory	11070.0	5.0	2400.0	13550.0
25	Chalilanwali	Participatory	8805.1	7.0	3500.0	12305.1
		Non participatory	10425.0	6.0	2800.0	13401.0
	Overall Average	**Participatory**	**9626.6**	**6.3**	**3150.0**	**12776.6**
		Non participatory	**10541.3**	**5.7**	**2827.2**	**13368.5**

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District Muktsar						
Sr. No.	**Village**		**Total input cost (per acre)**	**Yield (q/per acre)**	**Total picking cost (per acre)**	**Total cost (per acre)**
1	Balmgarh	Participatory	7963.1	6.9	3082.5	11045.6
		Non participatory	8656.3	6.5	2925.0	11581.3
2	Gobind nagri	Participatory	8427.5	6.7	3028.5	11456.0
		Non participatory	10694.5	6.3	2812.5	13507.0
3	Mour	Participatory	8525.8	6.7	3006.0	11531.8
		Non participatory	9061.2	6.1	2745.0	11806.2
4	Badhai	Participatory	7803.9	6.5	2934.0	10737.9
		Non participatory	9662.2	6.0	2700.0	12362.2
5	Ramgarh chungah	Participatory	8687.6	6.1	2736.0	11423.6
		Non participatory	9860.8	5.4	2430.0	12290.8
6	Saddarwala	Participatory	8429.7	6.5	2916.0	11345.7
		Non participatory	9533.5	5.6	2520.0	12053.5
7	Kotli deon	Participatory	8202.6	6.7	2997.0	11199.6
		Non participatory	9566.4	6.4	2880.0	12446.4
8	Bura gujjar	Participatory	8870.7	6.6	2956.5	11827.2
		Non participatory	9529.5	6.1	2745.0	12274.5
9	Lambi dhab	Participatory	8711.4	6.7	2997.0	11708.4
		Non participatory	10857.6	6.1	2745.0	13602.6
10	Gulabe wala	Participatory	9229.5	6.5	2934.0	12163.5
		Non participatory	10382.5	6.2	2790.0	13172.5
11	Khappian wali	Participatory	9220.7	6.6	2979.0	12199.7
		Non participatory	11564.5	6.0	2700.0	14264.5
12	Chak madrassa	Participatory	8120.3	6.5	2907.0	11027.3
		Non participatory	9797.6	5.9	2655.0	12452.6
13	Madrassa	Participatory	8730.9	6.7	2997.0	11727.9
		Non participatory	11600.0	6.0	2700.0	14300.0

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14	Bhagsar	Participatory	9003.1	6.3	2835.0	11838.1
		Non participatory	10414.5	5.9	2655.0	13069.5
15	Lakhewali	Participatory	8266.5	6.7	3010.5	11277.0
		Non participatory	10105.0	6.2	2790.0	12895.0
16	Nandgarh	Participatory	6740.1	6.2	2772.0	9512.1
		Non participatory	7787.9	5.8	2610.0	10397.9
17	Gandhar	Participatory	7576.2	5.8	2605.5	10181.7
		Non participatory	10936.4	5.5	2475.0	13411.4
18	Samewali	Participatory	7543.9	6.2	2808.0	10351.9
		Non participatory	9896.6	5.9	2655.0	12551.6
19	Rahurianwali	Participatory	6903.9	6.4	2871.0	9774.9
		Non participatory	7967.2	6.0	2677.5	10644.7
20	Goneana	Participatory	7197.9	6.7	3019.5	10217.4
		Non participatory	8192.0	6.3	2835.0	11027.0
21	Canada basti	Participatory	7097.4	6.8	3055.5	10152.9
		Non participatory	8891.6	6.3	2835.0	11726.6
22	Maha badhar	Participatory	7776.3	6.3	2817.0	10593.3
		Non participatory	9382.0	5.8	2610.0	11992.0
23	Chak tamkot	Participatory	7345.4	6.8	3060.0	10405.4
		Non participatory	8297.6	6.3	2835.0	11132.6
24	Khunde halal	Participatory	8550.7	6.5	2920.5	11471.2
		Non participatory	10163.0	5.7	2565.0	12728.0
25	Khunan kalan	Participatory	7867.4	6.8	3037.5	10904.9
		Non participatory	8947.6	6.1	2745.0	11692.6
	Overall Average	**Participatory**	**8111.6**	**6.5**	**2931.5**	**11043.1**
		Non participatory	**9669.9**	**6.0**	**2705.4**	**12375.3**

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Annexure IX

Profit over non participatory in the adopted villages of different districts

District Fazilka								
Sr.No.	**Village**		**Yield (Q)**	**Rate (Rs/q)**	**Total income (Rs/acre)**	**Total expenditure (Rs/acre)**	**Net profits (Rs/acre)**	**Net profit over non Participatory (Rs/acre)**
1	Acharchi	Participatory	6.5	3995.1	25968.2	13076.0	12892.2	3062.8
		Non participatory	6.0	3979.9	23879.4	14050.0	9829.4	
2	Jandwala hanwanta	Participatory	6.5	3995.1	25968.2	13851.0	12117.2	2960.8
		Non participatory	6.0	3979.9	23879.4	14723.0	9156.4	
3	Panniwala	Participatory	6.3	3995.1	25169.1	15949.0	9220.1	3230.7
		Non participatory	5.5	3979.9	21889.5	15900.0	5989.5	
4	Usmaan khera	Participatory	6.3	3995.1	25169.1	14414.0	10755.1	2250.7
		Non participatory	6.0	3979.9	23879.4	15375.0	8504.4	
5	Jandwala mira sangla	Participatory	6.5	3995.1	25968.2	15840.0	10128.2	3598.8
		Non participatory	6.0	3979.9	23879.4	17350.0	6529.4	
6	Kabul shah khubban	Participatory	6.4	3995.1	25568.6	15505.0	10063.6	4524.2
		Non participatory	5.5	3979.9	21889.5	16350.0	5539.5	
7	Kheowali dhaab	Participatory	6.0	3995.1	23970.6	14245.0	9725.6	3636.2
		Non participatory	5.5	3979.9	21889.5	15800.0	6089.5	
8	Lakhewali dhaab	Participatory	6.0	3995.1	23970.6	14088.0	9882.6	5113.1
		Non participatory	5.0	3979.9	19899.5	15130.0	4769.5	
9	Sabuana	Participatory	6.5	3995.1	25968.2	14635.0	11333.2	6763.7
		Non participatory	5.0	3979.9	19899.5	15330.0	4569.5	
10	Shatirwala	Participatory	6.0	3995.1	23970.6	15840.0	8130.6	3436.2
		Non participatory	5.5	3979.9	21889.5	17195.0	4694.5	
11	Tillianwali	Participatory	6.0	3995.1	23970.6	15356.0	8614.6	1416.2
		Non participatory	5.8	3979.9	23083.4	15885.0	7198.4	
12	Danewala	Participatory	6.6	3995.1	26367.7	15653.0	10714.7	5277.2
		Non participatory	5.5	3979.9	21889.5	16452.0	5437.5	

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13	Dharmpura	Participatory	6.2	3995.1	24769.6	14887.0	9882.6	4102.2
		Non participatory	5.5	3979.9	21889.5	16109.0	5780.5	
14	Haripura	Participatory	6.3	3995.1	25169.1	15394.0	9775.1	2913.7
		Non participatory	5.8	3979.9	23083.4	16222.0	6861.4	
15	Killianwali	Participatory	6.6	3995.1	26367.7	14769.0	11598.7	4019.2
		Non participatory	5.8	3979.9	23083.4	15504.0	7579.4	
16	Panjkosi	Participatory	6.1	3995.1	24370.1	14456.0	9914.1	3035.7
		Non participatory	5.8	3979.9	23083.4	16205.0	6878.4	
17	Patrewala	Participatory	6.3	3995.1	25169.1	14616.0	10553.1	3781.7
		Non participatory	5.8	3979.9	23083.4	16312.0	6771.4	
18	Saidanwali	Participatory	6.8	3995.1	27166.7	13544.0	13622.7	4723.3
		Non participatory	5.8	3979.9	23083.4	14184.0	8899.4	
19	Bazidpur kattianwali	Participatory	6.7	3995.1	26767.2	14907.0	11860.2	6168.2
		Non participatory	6.0	3840.0	23040.0	17348.0	5692.0	
20	Bodiwala pitha	Participatory	6.3	3995.1	25169.1	14179.0	10990.1	2424.1
		Non participatory	5.8	4010.0	23258.0	14692.0	8566.0	
21	Danger khera	Participatory	6.2	3995.1	24769.6	13840.0	10929.6	1897.9
		Non participatory	5.8	3979.6	23081.7	14050.0	9031.7	
22	Ghallu	Participatory	6.8	3995.1	27166.7	14668.0	12498.7	3820.7
		Non participatory	6.2	3840.0	23808.0	15130.0	8678.0	
23	Katehra	Participatory	6.0	3995.1	23970.6	12827.0	11143.6	2560.6
		Non participatory	5.5	4002.0	22011.0	13428.0	8583.0	
24	Khippanwali	Participatory	6.0	3995.1	23970.6	13287.0	10683.6	2941.6
		Non participatory	5.0	4200.0	21000.0	13258.0	7742.0	
25	Nihal khera	Participatory	6.5	3995.1	25968.2	13634.0	12334.2	6039.2
		Non participatory	5.0	3985.0	19925.0	13630.0	6295.0	
	Overall average	**Participatory**	**6.3**	**3995.1**	**25169.1**	**14538.8**	**10630.3**	**3768.0**
		Non participatory	**5.6**	**3979.8**	**22286.9**	**15424.5**	**6862.4**	

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District Bathinda								
Sr.No.	**Village**		**Yield (Q)**	**Rate (Rs/q)**	**Total income (Rs/acre)**	**Total expenditure (Rs/acre)**	**Net profits (Rs/acre)**	**Net profit over non Participatory (Rs/acre)**
1	Yatri	Participatory	7.3	4500	32625.0	14026.3	18598.8	2613.8
		Non participatory	7.2	4500	32445.0	16460.0	15985.0	
2	Mourh chrat singh	Participatory	7.0	4500	31455.0	13534.1	17920.9	5839.3
		Non participatory	6.0	4500	27090.0	15008.3	12081.6	
3	Marhi	Participatory	6.5	4500	29025.0	11070.7	17954.4	3448.1
		Non participatory	6.3	4500	28125.0	13618.8	14506.3	
4	Jodhpur pakhar	Participatory	6.7	4500	30105.0	12030.3	18074.7	2765.8
		Non participatory	6.5	4500	29025.0	13716.2	15308.9	
5	Kutiwal klan	Participatory	6.5	4500	29250.0	13371.3	15878.7	2972.8
		Non participatory	5.9	4500	26550.0	13644.1	12905.9	
6	Thamn garh	Participatory	6.8	4500	30375.0	10889.1	19485.9	6019.9
		Non participatory	6.0	4500	27000.0	13534.0	13466.0	
7	Kutiwal khurd	Participatory	6.5	4500	29250.0	12691.1	16559.0	4019.0
		Non participatory	6.0	4500	27000.0	14460.0	12540.0	
8	Ghumn klan	Participatory	6.0	4500	27000.0	14542.2	12457.8	1363.9
		Non participatory	5.9	4500	26550.0	15456.1	11093.9	
9	Ghumn khurd	Participatory	6.0	4500	27000.0	12677.6	14322.4	3622.6
		Non participatory	5.8	4500	26100.0	15400.2	10699.8	
10	Sukha singh wala	Participatory	6.50	4500	29250.0	12654.0	16596.0	3545.7
		Non participatory	6.3	4500	28350.0	15299.7	13050.3	
11	Ram nagar	Participatory	6.0	4500	27000.0	11144.7	15855.4	5614.9
		Non participatory	5.5	4500	24750.0	14509.5	10240.5	
12	Kotli klan	Participatory	6.0	4500	27000.0	12601.3	14398.8	4254.5
		Non participatory	5.2	4500	23445.0	13300.7	10144.3	

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13	Bhai desa	Participatory	6.5	4500	29430.0	10713.5	18716.5	4948.9
		Non participatory	6.3	4500	28440.0	14672.4	13767.6	
14	Mourh klan	Participatory	6.5	4500	29250.0	11642.1	17608.0	4839.0
		Non participatory	6.0	4500	27000.0	14231.0	12769.0	
15	Rajgarh kube	Participatory	6.2	4500	27945.0	12457.1	15487.9	3300.2
		Non participatory	6.1	4500	27405.0	15217.3	12187.7	
16	Mourh khurd	Participatory	6.3	4500	28485.0	13191.7	15293.3	3685.6
		Non participatory	5.9	4500	26505.0	14897.3	11607.7	
17	Kotli khurd	Participatory	7.0	4500	31500.0	13189.6	18310.5	2376.5
		Non participatory	6.8	4500	30600.0	14666.0	15934.0	
18	Swaech	Participatory	6.3	4500	28170.0	12161.9	16008.2	4368.2
		Non participatory	6.0	4500	27000.0	15360.0	11640.0	
19	Kot bhara	Participatory	7.0	4500	31500.0	13253.9	18246.2	3188.2
		Non participatory	6.5	4500	29250.0	14192.0	15058.0	
20	Ghari bara singh	Participatory	7.0	4500	31500.0	13988.4	17511.7	3583.7
		Non participatory	6.8	4500	30600.0	16672.0	13928.0	
21	Rajgarh bhundarh	Participatory	7.0	4503	31521.0	14344.1	17177.0	5759.5
		Non participatory	6.2	4502	28047.5	16630.0	11417.5	
22	Gso khana	Participatory	7.0	4500	31500.0	14070.9	17429.2	4306.2
		Non participatory	6.5	4502	29263.0	16140.0	13123.0	
23	Manak khana	Participatory	7.0	4502	31514.0	12566.5	18947.5	5236.0
		Non participatory	6.5	4502	29263.0	15551.5	13711.5	
24	Chthey wal	Participatory	7.0	4505	31535.0	13715.6	17819.4	3782.4
		Non participatory	6.5	4502	29263.0	15226.0	14037.0	
25	Bhai bakhtour	Participatory	7.0	4502	31514.0	13037.0	18477.0	5434.2
		Non participatory	6.2	4502	27912.4	14869.6	13042.8	
	Overall Average	**Participatory**	**6.4**	**4500**	**28800.0**	**12290.9**	**16509.1**	
		Non participatory	**6.0**	**4500**	**27000.0**	**14335.6**	**12664.4**	**3844.7**

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District Mansa								
Sr.No.	**Village**		**Yield (Q)**	**Rate (Rs/q)**	**Total income (Rs/acre)**	**Total expenditure (Rs/acre)**	**Net profits (Rs/acre)**	**Net profit over non Participatory (Rs/acre)**
1	Burj bhalai ke	Participatory	6.1	4460	**27206.0**	12162.5	15043.5	3259.0
		Non participatory	5.5	4454	**24497.0**	12690.5	11806.5	
2	Ghuduwala	Participatory	6.0	4460	**26760.0**	10238.9	16521.1	2051.2
		Non participatory	5.6	4454	**24942.4**	10450.1	14492.3	
3	Ullk	Participatory	6.6	4460	**29436.0**	13190.5	16245.5	2187.5
		Non participatory	6.0	4454	**26724.0**	13529.0	13195	
4	Berewala	Participatory	6.1	4460	**27206.0**	11894.5	15311.5	1977.3
		Non participatory	5.8	4454	**25833.2**	12261.6	13571.6	
5	Jorkian	Participatory	5.5	4460	**24530.0**	12854.8	11675.2	2624.2
		Non participatory	5.0	4454	**22270.0**	13199.0	9071	
6	Mian	Participatory	7.0	4460	**31220.0**	13166.0	18054	3417.4
		Non participatory	6.5	4454	**28951.0**	13838.4	15112.6	
7	Tandian	Participatory	6.3	4460	**28098.0**	13041.2	15056.8	2344.8
		Non participatory	6	4454	**26724.0**	13988.0	12736	
8	Jherian	Participatory	5.6	4460	**24976.0**	12864.2	12111.8	3294.3
		Non participatory	5.5	4454	**24497.0**	13432.5	11064.5	
9	Jagatgarh bandra	Participatory	6.1	4460	**27206.0**	12630.8	14575.2	2402.0
		Non participatory	5.8	4454	**25833.2**	13661.8	12171.4	
10	Kusla	Participatory	6.5	4460	**28990.0**	12660.0	16330	1867.7
		Non participatory	6.2	4454	**27614.8**	13127.7	14487.1	
11	Tibbi	Participatory	5.2	4460	**23192.0**	11862.7	11329.3	1709.3
		Non participatory	5.0	4454	**22270.0**	12630.0	9640	
12	Ramanandi	Participatory	8.1	4460	**36126.0**	12939.0	23187	5509.5
		Non participatory	7.0	4454	**31178.0**	13472.5	17705.5	
13	Chappianwali	Participatory	4.4	4460	**19624.0**	12372.5	7251.5	194.7
		Non participatory	4.2	4454	**18706.8**	11633.2	7073.6	

Contd.....

14	Bajewala	Participatory	4.2	4460	**18732.0**	13612.3	5119.7	1239.0
		Non participatory	4.3	4454	**19152.2**	15254.3	3897.9	
15	Lallianwali	Participatory	6.5	4460	**28990.0**	11385.5	17604.5	1096.0
		Non participatory	6.5	4454	**28951.0**	12416.5	16534.5	
16	Sahnianwali	Participatory	7.1	4460	**31666.0**	15301.4	16364.6	3632.9
		Non participatory	6.3	4454	**28060.2**	15517.3	12542.9	
17	Dasaundia	Participatory	7.1	4460	**31666.0**	13410.5	18255.5	2320.8
		Non participatory	6.8	4454	**30287.2**	14725.3	15561.9	
18	Bhame klan	Participatory	6.1	4460	**27206.0**	14727.0	12505	1664.4
		Non participatory	5.9	4454	**26278.6**	15664.4	10614.2	
19	Talwandi aklia	Participatory	7.8	4460	**34788.0**	13596.2	21291.8	7416.5
		Non participatory	6.0	4454	**26724.0**	13864.7	12859.3	
20	Raipur	Participatory	7.2	4460	**32112.0**	12817.6	19544.4	8170.9
		Non participatory	5.0	4454	**22270.0**	13395.5	8818.5	
21	Dalieawali	Participatory	7.5	4460	**33450.0**	12286.7	21113.3	12518.7
		Non participatory	4.9	4454	**21824.6**	12355.0	9388.8	
22	Maakha	Participatory	6.9	4460	**30774.0**	12511.0	18313	2098.3
		Non participatory	6.5	4454	**28951.0**	13302.0	15625	
23	Peron	Participatory	6.0	4460	**26760.0**	12327.5	14557.5	4524.7
		Non participatory	5.8	4454	**25833.2**	13106.0	12648	
24	Banawali	Participatory	6.7	4460	**29882.0**	13262.0	16720	4969.0
		Non participatory	6.0	4454	**26724.0**	13470.0	13174	
25	Chalilanwali	Participatory	6.0	4460	**26760.0**	12305.1	14454.9	5425.9
		Non participatory	5.5	4454	**24497.0**	13225.0	11096	
	Overall Average	**Participatory**	**6.3**	**4460.0**	**28098.0**	**12776.6**	**15321.4**	**3302.1**
		Non participatory	**5.7**	**4454.0**	**25387.8**	**13368.5**	**12019.3**	

Contd.....

District Muktsar								
Sr.No.	**Village**		**Yield (Q)**	**Rate (Rs/q)**	**Total income (Rs/acre)**	**Total expenditure (Rs/acre)**	**Net profits (Rs/acre)**	**Net profit over non Participatory (Rs/acre)**
1	**Balmgarh**	Participatory	6.9	4713	32523.2	11045.6	21477.6	2898.9
		Non participatory	6.5	4640	30160.0	11581.3	18578.7	
2	**Gobind nagri**	Participatory	6.7	4676	31472.2	11456.0	20042.7	4393.7
		Non participatory	6.3	4663	29146.9	13507.0	15649.0	
3	**Mour**	Participatory	6.7	4666	31170.9	11531.8	19622.2	2905.7
		Non participatory	6.1	4676	28523.6	11806.2	16716.5	
4	**Badhai**	Participatory	6.5	4624	30150.4	10737.9	19427.3	3586.7
		Non participatory	6	4701	28206.0	12362.2	15840.6	
5	**Ramgarh chungah**	Participatory	6.1	4661	28338.9	11423.6	16915.7	3956.5
		Non participatory	5.4	4675	25245.0	12290.8	12959.2	
6	**Saddarwala**	Participatory	6.5	4652	30148.8	11345.7	18799.4	5059.4
		Non participatory	5.6	4607	25802.0	12053.5	13740.0	
7	**Kotli deon**	Participatory	6.7	4662	31049.6	11199.6	19842.1	2545.3
		Non participatory	6.4	4644	29721.6	12446.4	17296.8	
8	**Bura gujjar**	Participatory	6.6	4654	30576.8	11827.2	18744.9	2494.4
		Non participatory	6.1	4675	28517.5	12274.5	16250.5	
9	Lambi dhab	Participatory	6.7	4687	31215.4	11708.4	19510.4	4753.0
		Non participatory	6.1	4650	28365.0	13602.6	14757.4	
10	**Gulabe wala**	Participatory	6.5	4676	30487.5	12163.5	18321.3	2623.8
		Non participatory	6.2	4655	28861.0	13172.5	15697.5	
11	**Khappian wali**	Participatory	6.6	4659	30842.6	12199.7	18642.9	4889.4
		Non participatory	6	4670	28020.0	14264.5	13753.5	
12	**Chak madrassa**	Participatory	6.5	4662	30116.5	11027.3	19110.3	4219.9
		Non participatory	5.9	4635	27346.5	12452.6	14890.4	
13	**Madrassa**	Participatory	6.7	4633	30855.8	11727.9	19129.5	6205.5
		Non participatory	6	4535	27210.0	14300.0	12924.0	

Contd.....

14	**Bhagsar**	Participatory	6.3	4624	29131.2	11838.1	17324.3	3013.8
		Non participatory	5.9	4640	27376.0	13069.5	14310.5	
15	**Lakhewali**	Participatory	6.7	4673	31262.4	11277.0	19982.8	4075.8
		Non participatory	6.2	4647	28814.5	12895.0	15907.0	
16	**Nandgarh**	Participatory	6.2	4653	28665.6	9512.1	19119.8	2543.7
		Non participatory	5.8	4645	26941.0	10397.9	16576.1	
17	**Gandhar**	Participatory	5.8	4665	27010.4	10181.7	16810.6	4637
		Non participatory	5.5	4650	25575.0	13411.4	12173.6	
18	**Samewali**	Participatory	6.2	4649	29010.0	10351.9	18657.3	3568.9
		Non participatory	5.9	4685	27641.5	12551.6	15088.4	
19	**Rahurianwali**	Participatory	6.4	4660	29732.1	9774.9	19964.2	2846.9
		Non participatory	6	4665	27756.8	10644.7	17117.3	
20	**Goneana**	Participatory	6.7	4611	30943.2	10217.4	20724.3	2866.3
		Non participatory	6.3	4585	28885.5	11027.0	17858.0	
21	**Canada basti**	Participatory	6.8	4656	31614.2	10152.9	21463.4	4046
		Non participatory	6.3	4625	29137.5	11726.6	17417.4	
22	**Maha badhar**	Participatory	6.3	4627	28968.2	10593.3	18375.0	3847
		Non participatory	5.8	4575	26535.0	11992.0	14528.0	
23	**Chak tamkot**	Participatory	6.8	4646	31592.8	10405.4	21190.4	3378
		Non participatory	6.3	4595	28948.5	11132.6	17812.4	
24	**Khunde halal**	Participatory	6.5	4639	30107.1	11471.2	18627.1	4962.1
		Non participatory	5.7	4630	26391.0	12728.0	13665.0	
25	**Khunan kalan**	Participatory	6.8	4640	31321.4	10904.9	20407.1	4016.7
		Non participatory	6.1	4605	28090.5	11692.6	16390.4	
	Overall Average	**Participatory**	**6.5**	**4654**	**30256.9**	**11043.1**	**19213.8**	**3755.1**
		Non participatory	**6.0**	**4639**	**27834.0**	**12375.3**	**15458.7**	

Annexure- X

Area under Wheat in the adopted villages of different districts

District Fazilka				
Sr.No.	**Village**	**Area under Wheat 2013-14 (acre)**	**Area under Wheat 2012-13 (acre)**	**% increase/ decrease over 2012-13**
1	JandwalaHanwanta	2800	2725	2.8
2	Acharichi	2700	2780	-2.9
3	UsmanKhera	3520	3510	0.3
4	Panniwala	3600	3890	-7.5
5	Sabuana	3600	3500	2.9
6	Kabul Shah Khuban	3690	3750	-1.6
7	Jandwalamira	3715	3750	-0.9
8	LakhewaliDhab	4250	4260	-0.2
9	Shatirwala	1810	1760	2.8
10	KheowaliDhab	2600	2520	3.2
11	Tillianwali	550	535	2.8
12	Patrewala	3650	3645	0.1
13	Haripura	3085	3100	-0.5
14	Dharmpura	5250	5238	0.2
15	Saidanwali	6544	6544	0.0
16	Danewala	5205	5210	-0.1
17	Killianwali	6217	6230	-0.2
18	Panjkosi	4632	4670	-0.8
19	BazidpurKattianwali	2800	2780	0.7
20	NihalKhera	3800	3622	4.9
21	Khippanwali	4100	3900	5.1
22	BodiwalaPitha	1800	1730	4.1
23	Kathera	3700	3505	5.6
24	Danger Khera	5860	6230	-5.9
25	Ghallu	4470	4520	-1.1
	Total	**93948**	**93904**	**0.6**

Contd.....

District Bathinda				
Sr. No.	**Village**	**Area under Wheat 2013-14 (acre)**	**Area under Wheat 2012-13 (acre)**	**% increase/ decrease over 2012-13**
1	Yatri	720	700	2.8
2	Jodhpur Pakher	4234	4160	1.7
3	Mari	532	490	7.9
4	MourCharat Singh	1600	1600	0.0
5	Ram Nagar	3812	3801	0.3
6	GhumanKalan	3256	3245	0.3
7	KuttiwalKalan	1632	1626	0.4
8	Sukha Singh Wala	405	401	1.0
9	GhumanKhurad	1392	1385	0.5
10	KuttiwalKhurad	1109	980	11.6
11	ThammanGarh	1013	998	1.5
12	KotliKalan	3416	3422	-0.2
13	RajgarhKubbe	2732	2727	0.2
14	Swaich	1227	1231	-0.3
15	KotliKhurad	2403	2409	-0.2
16	MourKalan	3392	3385	0.2
17	MourKhurad	2005	2007	-0.1
18	BhaiDesa	1273	1273	0.0
19	RamnagarBhunder	1275	1275	0.0
20	BhaiBakhtaur	1702	1702	0.0
21	Gehri Bara Singh	1410	1410	0.0
22	ManakKhana	525	520	1.0
23	ChattheWala	2195	2110	3.9
24	GhassoKhana	640	620	3.1
25	KotBhara	421	410	2.6
	Total	**44321**	**43887**	**1.0**

Contd.....

District Mansa				
Sr. No.	**Village**	**Area under Wheat 2013-14 (acre)**	**Area under Wheat 2012-13 (acre)**	**% increase/ decrease over 2012-13**
1	BurjBhalike	1300	1273	2.1
2	Ghuduwala	1150	1079	6.2
3	Ullak	1032	1045	-1.3
4	Berewala	980	1072	-9.4
5	Jorkian	1915	1520	20.6
6	Tandian	1185	1160	2.1
7	Jherianwali	1410	1530	-8.5
8	Mian	908	1080	-18.9
9	Jagatghar b	835	880	-5.4
10	Jatanakh	1008	1009	-0.1
11	Kusla	2985	2890	3.2
12	Ramanandi	1015	930	8.4
13	Dasaundia	1302	1025	21.3
14	Bajewala	3810	3580	6.0
15	Bhameklan	2260	2150	4.9
16	Chhapinwali	1115	1035	7.2
17	Lallianwali	1505	1225	18.6
18	Sahnewali	1302	1170	10.1
19	Talwandi ak	1420	1448	-2.0
20	Dalaiwali	1590	1470	7.5
21	Chalilanwala	1510	1540	-2.0
22	Peron	1720	2090	-21.5
23	Raipur	4815	4826	-0.2
24	Maakha	2345	2390	-1.9
25	Banawali	835	920	-10.2
	Total	**41252**	**40337**	**2.2**

Contd.....

District Muktsar				
Sr. No.	**Village**	**Area under Wheat 2013-14 (acre)**	**Area under Wheat 2012-13 (acre)**	**% increase/ decrease over 2012-13**
1	Balamgarh	1960	2000	-2.0
2	GobindNagri	540	500	7.4
3	Mour	1080	1000	7.4
4	Badhai	1624	1520	6.4
5	RamgarhChungha	1400	1350	3.6
6	Saddarwala	1800	1750	2.8
7	Kotli Deon	1062	1000	5.8
8	BuraGujjar	2000	2000	0.0
9	Lambidhab	775	775	0.0
10	Gulabewala	2950	2950	0.0
11	Khappianwali	2400	2400	0.0
12	Chak Madrassa	1697	1709	-0.7
13	Madrasa	1138	1137	0.1
14	Bhagsar	5582	6000	-7.5
15	Lakhewali	2536	2536	0.0
16	Nandgarh	1268	1260	0.6
17	Gandhar	996	1000	-0.4
18	Samewali	2335	2335	0.0
19	Rahurawali	1180	1180	0.0
20	Goneana	1610	1600	0.6
21	Canada Basti	285	285	0.0
22	MahaBadhar	1200	1200	0.0
23	ChakTamkot	1000	1000	0.0
24	Khunde Halal	1550	1550	0.0
25	KhunanKalan	3250	3250	0.0
	Total	**43218**	**43287**	**-0.2**

Annexure XI

Area under wheat varieties in the adopted villages of different districts

District Fazilka			
Sr No.	**Village**	**Area under Wheat**	**PAU recommended**
1	JandwalaHanwanta	2800	2400
2	Acharichi	2700	2490
3	UsmanKhera	3520	3050
4	Panniwala	3600	3300
5	Sabuana	3600	3300
6	Kabul Shah Khuban	3690	2800
7	Jandwalamira	3715	3500
8	LakhewaliDhab	4250	3450
9	Shatirwala	1810	1510
10	KheowaliDhab	2600	2350
11	Tillianwali	550	500
12	Patrewala	3650	3500
13	Haripura	3085	2700
14	Dharmpura	5250	4000
15	Saidanwali	6544	4600
16	Danewala	5205	4105
17	Killianwali	6217	5800
18	Panjkosi	4632	3732
19	BazidpurKattianwali	2800	2500
20	NihalKhera	3800	3400
21	Khippanwali	4100	3400
22	BodiwalaPitha	1800	1630
23	Kathera	3700	3550
24	Danger Khera	5860	5550
25	Ghallu	4470	4070
	Total	**93948**	**81187**

Contd.....

District Bathinda			
Sr No.	**Village**	**Area under Wheat**	**PAU recommended**
1	Yatri	720	519
2	Jodhpur Pakher	4234	3713
3	Mari	532	403
4	MourCharat Singh	1600	1458
5	Ram Nagar	3812	2778
6	GhumanKalan	3256	3049
7	KuttiwalKalan	1632	1524
8	Sukha Singh Wala	405	305
9	GhumanKhurad	1392	1191
10	KuttiwalKhurad	1109	924
11	ThammanGarh	1013	861
12	KotliKalan	3416	3248
13	RajgarhKubbe	2732	2706
14	Swaich	1227	1207
15	KotliKhurad	2403	2423
16	MourKalan	3392	3311
17	MourKhurad	2005	1931
18	BhaiDesa	1273	1121
19	RamnagarBhunder	1275	1150
20	BhaiBakhtaur	1702	1642
21	Gehri Bara Singh	1410	1321
22	ManakKhana	525	495
23	ChattheWala	2195	1559
24	GhassoKhana	640	561
25	KotBhara	421	397
	Total	**44321**	**39797**

Contd.....

District Mansa			
Sr No.	**Village**	**Area under Wheat**	**PAU recommended**
1	BurjBhalike	1300	1083
2	Ghuduwala	1150	855
3	Ullak	1032	855
4	Berewala	980	809
5	Jorkian	1915	1504
6	Tandian	1185	998
7	Jherianwali	1410	1178
8	Mian	908	781
9	Jagatghar b	835	681
10	Jatanakh	1008	875
11	Kusla	2985	2535
12	Ramanandi	1015	884
13	Dasaundia	1302	1058
14	Bajewala	3810	3232
15	Bhameklan	2260	1701
16	Chhapinwali	1115	951
17	Lallianwali	1505	1175
18	Sahnewali	1302	1108
19	Talwandi ak	1420	1280
20	Dalaiwali	1590	1315
21	Chalilanwala	1510	1310
22	Peron	1720	1420
23	Raipur	4815	4275
24	Maakha	2345	1995
25	Banawali	835	715
	Total	**41252**	**34573**

Contd.....

District Muktsar			
Sr No.	**Village**	**Area under Wheat**	**PAU recommended**
1	Balamgarh	1960	1462
2	GobindNagri	540	451
3	Mour	1080	670
4	Badhai	1624	1197
5	RamgarhChungha	1400	950
6	Saddarwala	1800	1450
7	Kotli Deon	1062	812
8	BuraGujjar	2000	1600
9	Lambidhab	775	690
10	Gulabewala	2950	2300
11	Khappianwali	2400	1900
12	Chak Madrassa	1697	1170
13	Madrasa	1138	710
14	Bhagsar	5582	4401
15	Lakhewali	2536	1914
16	Nandgarh	1268	936
17	Gandhar	996	796
18	Samewali	2335	1594
19	Rahurawali	1180	1100
20	Goneana	1610	1530
21	Canada Basti	285	220
22	MahaBadhar	1200	1100
23	ChakTamkot	1000	970
24	Khunde Halal	1550	1400
25	KhunanKalan	3250	3140
	Total	**43218**	**34463**

Annexure XII

Sowing Pattern of wheat in the adopted villages of different districts

District Fazilka							
Sr No.	**Village**	**Area under Wheat 2013 (acre)**	**15-30 Oct**	**1-15 Nov**	**16-30 Nov**	**1-15 Dec**	**16-31 Dec**
1	JandwalaHanwanta	2800	0	200	1400	800	400
2	Acharichi	2700	0	100	1210	1280	110
3	UsmanKhera	3520	0	50	1615	1385	470
4	Panniwala	3600	0	0	1387	1754	459
5	Sabuana	3600	0	700	1390	970	540
6	Kabul Shah Khuban	3690	0	490	1536	1425	239
7	Jandwalamira	3715	0	390	1610	1000	715
8	LakhewaliDhab	4250	0	125	1725	1500	900
9	Shatirwala	1810	0	0	1014	613	183
10	KheowaliDhab	2600	0	0	1284	796	520
11	Tillianwali	550	0	0	335	165	50
12	Patrewala	3650	0	0	1890	1115	645
13	Haripura	3085	0	0	1770	1290	25
14	Dharmpura	5250	0	0	2158	2652	440
15	Saidanwali	6544	0	567	2498	2531	948
16	Danewala	5205	0	0	1968	1907	1330
17	Killianwali	6217	0	0	3621	1912	684
18	Panjkosi	4632	0	386	2035	1497	714
19	BazidpurKattianwali	2800	0	50	1792	821	137
20	NihalKhera	3800	0	331	1369	1600	500
21	Khippanwali	4100	0	108	1523	1848	621
22	BodiwalaPitha	1800	0	0	947	759	94
23	Kathera	3700	0	231	1986	1266	217
24	Danger Khera	5860	0	2130	2510	600	620
25	Ghallu	4470	0	857	1889	981	743
	Total	**2800**	**0**	**200**	**1400**	**800**	**400**

Contd.....

District Bathinda							
Sr No.	**Village**	**Area under Wheat 2013 (acre)**	**15-30 Oct**	**1-15 Nov**	**16-30 Nov**	**1-15 Dec**	**16-31 Dec**
1	Yatri	720	79	31	435	175.0	0
2	Jodhpur Pakher	4234	546	1502	935	1251.0	
3	Mari	532	76	231	138	82.0	5
4	MourCharat Singh	1600	176	937	238	249.0	
5	Ram Nagar	3812	112	1304	1840	556.0	
6	GhumanKalan	3256	80	1650	1226	300.0	
7	KuttiwalKalan	1632	240	510	772	101.0	9
8	Sukha Singh Wala	405	32	155	175	40	3
9	GhumanKhurad	1392	127	616	548	101.0	
10	KuttiwalKhurad	1109	67	479	428	135.0	
11	ThammanGarh	1013	65	385	400	163.0	
12	KotliKalan	3416	21	1865	1150	380.0	
13	RajgarhKubbe	2732	80	1505	903	244.0	
14	Swaich	1227	45	280	410	470.0	22
15	KotliKhurad	2403	7	930	751	715.0	
16	MourKalan	3392	60	1407	972	939.0	14
17	MourKhurad	2005		659	681	587.0	78
18	BhaiDesa	1273	51	501	402	193.0	126
19	RamgarhBhunder	1275	45	76	466	603.0	85
20	BhaiBakhtaur	1702	96	521	259	754.0	72
21	Gehri Bara Singh	1410	352	465	302	193.0	98
22	ManakKhana	525	36	104	146	113.0	126
23	ChattheWala	2195	85	192	1501	125.0	292
24	GhassoKhana	640	34	68	152	305.0	81
25	KotBhara	421	23	124	242	32.0	0
	Total	**44321**	**2535**	**16497**	**15472**	**8806**	**1011**

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District Mansa							
Sr No.	**Village**	**Area under Wheat 2013 (acre)**	**15-30 Oct**	**1-15 Nov**	**16-30 Nov**	**1-15 Dec**	**16-31 Dec**
1	BurjBhalike	1300	134	325	372	367	102
2	Ghuduwala	1150	42	538	318	217	35
3	Ullak	1032	45	507	352	103	25
4	Berewala	980	95	357	295	168	65
5	Jorkian	1915	90	807	633	345	45
6	Tandian	1185	110	508	385	177	5
7	Jherianwali	1410	130	615	365	283	17
8	Mian	908	50	412	283	145	18
9	Jagatghar b	835	37	375	337	78	8
10	Jatanakh	1008	29	436	368	175	0
11	Kusla	2985	173	1015	962	735	100
12	Ramanandi	1015	65	525	308	82	35
13	Dasaundia	1302	60	652	485	105	0
14	Bajewala	3810	110	1800	1200	700	0
15	Bhameklan	2260	80	1025	835	320	0
16	Chhapinwali	1115	25	705	315	70	0
17	Lallianwali	1505	100	805	455	145	0
18	Sahnewali	1302	35	792	410	65	0
19	Talwandi ak	1420	90	820	380	130	0
20	Dalaiwali	1590	90	630	520	280	70
21	Chalilanwala	1510	90	720	540	160	0
22	Peron	1720	80	810	620	170	40
23	Raipur	4815	695	1680	1340	1040	60
24	Maakha	2345	260	980	640	430	35
25	Banawala	835	80	320	240	170	25
	Total	**41252**	**2795**	**18159**	**12958**	**6660**	**685**

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District Muktsar							
Sr No.	**Village**	**Area under Wheat 2013 (acre)**	**15-30 Oct**	**1-15 Nov**	**16-30 Nov**	**1-15 Dec**	**16-31 Dec**
1	Balamgarh	1960	330	210	260	631	529
2	GobindNagri	540	110	72	113	186	59
3	Mour	1080	55	107	220	470	228
4	Badhai	1624	149	330	529	574	42
5	RamgarhChungha	1400	100	250	800	200	50
6	Saddarwala	1800	100	300	800	500	100
7	Kotli Deon	1062	100	300	500	110	52
8	BuraGujjar	2000	300	400	600	400	300
9	Lambidhab	775	74	217	274	172	38
10	Gulabewala	2950	300	900	1100	550	100
11	Khappianwali	2400	300	930	1000	100	70
12	Chak Madrassa	1697	0	630	705	335	27
13	Madrasa	1138	47	417	446	210	18
14	Bhagsar	5582	30	1950	2265	1240	97
15	Lakhewali	2536	34	950	1121	390	41
16	Nandgarh	1268	21	730	375	120	22
17	Gandhar	996	15	370	465	126	20
18	Samewali	2335	21	850	931	460	73
19	Rahurawali	1180	50	730	210	190	0
20	Goneana	1610	90	960	360	110	90
21	Canada Basti	285	40	80	100	60	5
22	MahaBadhar	1200	200	800	200	0	0
23	ChakTamkot	1000	60	600	240	100	0
24	Khunde Halal	1550	90	810	400	250	0
25	KhunanKalan	3250	200	1570	980	500	0
	Total	**43218**	**2816**	**15463**	**14994**	**7984**	**1961**

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Annexure XIII

Expenditure incurred on various inputs in the adopted villages of different districts

District Fazilka									
Sr.No.	**Village**		**Seed and sowing (Rs/acre)**	**Seed treatment (Rs/acre)**	**Fertilizer (Rs/acre)**	**Insecticides (Rs/acre)**	**Weed management (Rs/acre)**	**Harvesting (Rs/acre)**	**Total input (Rs/acre)**
1	Acharchi	Participatory	2930.0	50.0	1886.4	550.0	320.0	2200.0	7936.4
		Non participatory	3700.0	0.0	1946.8	620.0	450.0	2350.0	9066.8
2	Jandwalahanwanta	Participatory	2930.0	70.0	2113.2	410.0	600.0	2275.0	8398.2
		Non participatory	3550.0	25.0	1946.8	540.0	650.0	2490.0	9201.8
3	Panniwala	Participatory	3100.0	70.0	2088.4	475.0	485.0	2215.0	8433.4
		Non participatory	3500.0	50.0	2529.0	580.0	565.0	2330.0	9554.0
4	Usmaankhera	Participatory	2800.0	40.0	2235.0	440.0	425.0	2145.0	8085.0
		Non participatory	3250.0	25.0	2168.2	620.0	550.0	2300.0	8913.2
5	Jandwalamirasangla	Participatory	3040.0	50.0	2001.8	1475.0	500.0	2255.0	9321.8
		Non participatory	3450.0	100.0	2495.4	1885.0	550.0	2400.0	10880.4
6	Kabul shah khubban	Participatory	3250.0	65.0	2056.0	1620.0	650.0	2260.0	9901.0
		Non participatory	3500.0	100.0	2722.8	1920.0	650.0	2250.0	11142.8
7	Kheowalidhaab	Participatory	3230.0	104.0	2065.8	1750.0	450.0	2350.0	9949.8
		Non participatory	3525.0	0.0	2566.8	1800.0	500.0	2350.0	10741.8
8	Lakhewalidhaab	Participatory	3020.0	100.0	2076.0	1450.0	350.0	2175.0	9171.0
		Non participatory	3100.0	0.0	2420.0	1850.0	400.0	2250.0	10020.0
9	Sabuana	Participatory	2945.0	80.0	2034.4	1200.0	350.0	2250.0	8859.4
		Non participatory	3200.0	25.0	2218.2	1450.0	460.0	2200.0	9553.2
10	Shatirwala	Participatory	2680.0	40.0	2029.2	970.0	325.0	1900.0	7944.2
		Non participatory	2750.0	0.0	2294.0	1100.0	450.0	2100.0	8694.0
11	Tillianwali	Participatory	3030.0	70.0	2392.8	900.0	350.0	2220.0	8962.8
		Non participatory	3150.0	100.0	2198.2	1200.0	500.0	2450.0	9598.2
12	Danewala	Participatory	2915.0	70.0	2104.6	900.0	545.0	1700.0	8234.6
		Non participatory	3150.0	50.0	2251.8	1100.0	590.0	2650.0	9791.8

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13	Dharmpura	Participatory	3315.0	70.0	2154.7	500.0	555.5	1425.0	8020.2
		Non participatory	3825.0	70.0	2660.0	650.0	590.5	2665.0	10460.5
14	Haripura	Participatory	3410.0	45.0	1965.1	630.0	490.5	1880.0	8420.6
		Non participatory	3725.0	100.0	2248.6	750.0	600.0	1980.0	9403.6
15	Killianwali	Participatory	3485.0	45.0	2105.2	600.0	572.0	1475.0	8282.2
		Non participatory	3600.0	70.0	2347.2	750.0	630.0	1490.0	8887.2
16	Panjkosi	Participatory	3525.0	70.0	2227.8	450.0	605.0	2000.0	8877.8
		Non participatory	3725.0	100.0	2266.8	500.0	625.0	2650.0	9866.8
17	Patrewala	Participatory	3630.0	60.0	2258.1	350.0	590.0	1450.0	8338.1
		Non participatory	3875.0	60.0	2218.6	500.0	617.0	2350.0	9620.6
18	Saidanwali	Participatory	2685.0	50.0	1944.4	475.7	556.0	1550.0	7261.1
		Non participatory	2675.0	50.0	2248.6	550.0	621.0	1850.0	7994.6
19	Bazidpurkattianwali	Participatory	2830.0	70.0	1869.4	450.5	615.0	1000.0	6834.9
		Non participatory	3050.0	0.0	2373.6	600.0	660.0	1600.0	8283.6
20	Bodiwalapitha	Participatory	3385.0	60.0	2019.6	420.0	595.0	1000.0	7479.6
		Non participatory	3525.0	0.0	2704.0	470.0	640.0	1200.0	8539.0
21	Danger khera	Participatory	2965.0	45.0	2241.8	600.0	565.0	800.0	7216.8
		Non participatory	3125.0	100.0	2799.0	900.0	590.0	1000.0	8514.0
22	Ghallu	Participatory	3160.0	50.0	1814.1	400.0	395.0	1400.0	7219.1
		Non participatory	3350.0	0.0	2392.2	525.0	485.0	1400.0	8152.2
23	Katehra	Participatory	3120.0	60.0	2044.0	470.0	471.0	800.0	6965.0
		Non participatory	3475.0	100.0	2370.4	620.0	551.0	800.0	7916.4
24	Khippanwali	Participatory	2940.0	45.0	2132.1	350.0	521.0	1000.0	6988.1
		Non participatory	3125.0	90.0	2290.0	550.0	575.0	1200.0	7830.0
25	Nihalkhera	Participatory	2955.0	90.0	2135.0	400.0	525.0	800.0	6905.0
		Non participatory	3150.0	0.0	2400.4	500.0	678.0	1000.0	7728.4
	Overall Average	**Participatory**	**3091.0**	**62.8**	**2079.8**	**729.4**	**496.2**	**1701.0**	**8160.2**
		Non participatory	**3362.0**	**48.6**	**2363.1**	**901.2**	**567.1**	**1972.2**	**9214.2**

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District Bathinda									
Sr.No.	**Village**		**Seed and sowing (Rs/acre)**	**Seed treatment (Rs/acre)**	**Fertilizer (Rs/acre)**	**Insecticides (Rs/acre)**	**Weed management (Rs/acre)**	**Harvesting (Rs/acre)**	**Total input (Rs/acre)**
1	Yatri	Participatory	1841.0	40.0	1841.0	220.0	310.0	800.0	5052.0
		Non participatory	2290.0	40.0	2290.0	470.0	310.0	800.0	6200.0
2	Jodhpur Pakher	Participatory	1841.0	40.0	1841.0	180.0	300.0	800.0	5002.0
		Non participatory	2540.0	0.0	2540.0	400.0	340.0	800.0	6620.0
3	Mari	Participatory	1950.0	45.0	1950.0	210.0	310.0	800.0	5265.0
		Non participatory	2360.0	45.0	2360.0	400.0	350.0	800.0	6315.0
4	MourCharat Singh	Participatory	1941.0	0.0	1941.0	250.0	310.0	800.0	5242.0
		Non participatory	2345.0	45.0	2345.0	360.0	350.0	800.0	6245.0
5	Ram Nagar	Participatory	1845.0	45.0	1845.0	220.0	310.0	800.0	5065.0
		Non participatory	2290.0	0.0	2290.0	300.0	0.0	800.0	5680.0
6	GhumanKalan	Participatory	1960.0	45.0	1960.0	200.0	300.0	800.0	5265.0
		Non participatory	2500.0	0.0	2500.0	300.0	370.0	800.0	6470.0
7	KuttiwalKalan	Participatory	2016.0	0.0	2016.0	220.0	290.0	800.0	5342.0
		Non participatory	2390.0	0.0	2390.0	420.0	350.0	800.0	6350.0
8	Sukha Singh Wala	Participatory	1865.0	45.0	1865.0	240.0	290.0	800.0	5105.0
		Non participatory	2480.0	0.0	2480.0	410.0	300.0	800.0	6470.0
9	GhumanKhurad	Participatory	1845.0	45.0	1845.0	250.0	340.0	800.0	5125.0
		Non participatory	2250.0	0.0	2250.0	350.0	310.0	800.0	5960.0
10	KuttiwalKhurad	Participatory	2040.0	40.0	2040.0	220.0	350.0	800.0	5490.0
		Non participatory	2400.0	0.0	2400.0	450.0	310.0	800.0	6360.0
11	ThammanGarh	Participatory	1800.0	45.0	1800.0	210.0	320.0	800.0	4975.0
		Non participatory	2630.0	0.0	2630.0	200.0	280.0	800.0	6540.0
12	KotliKalan	Participatory	1845.0	45.0	1845.0	240.0	370.0	800.0	5145.0
		Non participatory	2450.0	0.0	2450.0	340.0	290.0	800.0	6330.0

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13	RajgarhKubbe	Participatory	1985.0	0.0	1985.0	220.0	350.0	800.0	5340.0
		Non participatory	2180.0	0.0	2180.0	320.0	290.0	800.0	5770.0
14	Swaich	Participatory	1845.0	40.0	1845.0	110.0	300.0	800.0	4940.0
		Non participatory	2330.0	45.0	2330.0	400.0	340.0	800.0	6245.0
15	KotliKhurad	Participatory	1875.0	45.0	1875.0	220.0	340.0	800.0	5155.0
		Non participatory	2405.0	0.0	2405.0	370.0	310.0	800.0	6290.0
16	MourKalan	Participatory	1940.0	45.0	1940.0	110.0	350.0	800.0	5185.0
		Non participatory	2395.0	45.0	2395.0	250.0	340.0	800.0	6225.0
17	MourKhurad	Participatory	1951.0	45.0	1951.0	220.0	310.0	800.0	5277.0
		Non participatory	2360.0	0.0	2360.0	500.0	350.0	800.0	6370.0
18	BhaiDesa	Participatory	1855.0	40.0	1855.0	240.0	290.0	800.0	5080.0
		Non participatory	2170.0	0.0	2170.0	355.0	300.0	800.0	5795.0
19	RamgarhBhunder	Participatory	1875.0	0.0	1875.0	200.0	310.0	800.0	5060.0
		Non participatory	2430.0	0.0	2430.0	360.0	310.0	800.0	6330.0
20	BhaiBakhtaur	Participatory	1955.0	45.0	1955.0	180.0	300.0	800.0	5235.0
		Non participatory	2280.0	0.0	2280.0	460.0	340.0	800.0	6160.0
21	Gehri Bara Singh	Participatory	1916.0	45.0	1916.0	260.0	310.0	800.0	5247.0
		Non participatory	2255.0	45.0	2255.0	110.0	350.0	800.0	5815.0
22	ManakKhana	Participatory	1955.0	40.0	1955.0	120.0	350.0	800.0	5220.0
		Non participatory	2370.0	0.0	2370.0	350.0	340.0	800.0	6230.0
23	ChattheWala	Participatory	2130.0	40.0	2130.0	270.0	310.0	800.0	5680.0
		Non participatory	2380.0	0.0	2380.0	320.0	350.0	800.0	6230.0
24	GhassoKhana	Participatory	1855.0	0.0	1855.0	260.0	290.0	800.0	5060.0
		Non participatory	2460.0	40.0	2460.0	400.0	300.0	800.0	6460.0
25	KotBhara	Participatory	1850.0	45.0	1850.0	110.0	280.0	800.0	4935.0
		Non participatory	2560.0	0.0	2560.0	230.0	230.0	800.0	6380.0
	Overall Average	**Participatory**	**1909.1**	**80.6**	**1909.1**	**208.0**	**314.7**	**800.0**	**5175.3**
		Non participatory	**2380.4**	**80.6**	**2380.4**	**358.8**	**311.6**	**800.0**	**6245.5**

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District Mansa									
Sr.No.	**Village**		**Seed and sowing (Rs/acre)**	**Seed treatment (Rs/acre)**	**Fertilizer (Rs/acre)**	**Insecticides (Rs/acre)**	**Weed management (Rs/acre)**	**Harvesting (Rs/acre)**	**Total input (Rs/acre)**
1	BurjBhalike	Participatory	1965.0	40.0	1840.1	480.2	233.5	900.0	5810.0
		Non participatory	2550.2	25.0	1922.3	526.0	335.6	900.0	6340.0
2	Ghuduwala	Participatory	1995.6	26.0	2046.5	723.6	322.5	900.0	5706.0
		Non participatory	2160.0	15.0	2163.5	889.0	335.6	900.0	5985.0
3	Ullak	Participatory	1924.2	35.0	2214.5	447.8	233.5	900.0	5685.0
		Non participatory	2180.0	15.0	2462.5	618.0	437.7	900.0	6065.0
4	Berewala	Participatory	2300.0	35.0	2130.2	474.0	204.3	900.0	5985.0
		Non participatory	2300.0	25.0	2200.5	671.0	291.8	900.0	6110.0
5	Jorkian	Participatory	2250.0	45.0	2130.4	583.6	335.6	900.0	6015.0
		Non participatory	2371.0	26.0	2413.5	588.0	335.6	900.0	6226.0
6	Tandian	Participatory	2287.0	42.0	2020.6	265.4	335.6	900.0	6049.0
		Non participatory	2388.0	25.0	2101.0	461.5	335.6	900.0	6293.0
7	Jherianwali	Participatory	2045.0	35.0	2095.6	729.1	335.6	900.0	5800.0
		Non participatory	2147.0	0.0	2226.0	787.0	372.1	900.0	5989.5
8	Mian	Participatory	2250.0	40.0	2120.6	349.8	335.6	900.0	6060.0
		Non participatory	2350.0	25.0	2101.0	384.0	335.6	900.0	6280.0
9	Jagatghar b	Participatory	2350.0	60.0	2047.4	592.5	318.1	900.0	6180.0
		Non participatory	2429.0	20.0	2101.0	889.0	335.6	900.0	6379.0
10	Jatanakh	Participatory	2195.0	55.0	2060.8	599.8	309.3	900.0	6070.0
		Non participatory	2358.0	25.0	1967.0	738.5	313.7	900.0	6313.0
11	Kusla	Participatory	2475.0	42.0	2147.4	665.1	318.1	900.0	6337.0
		Non participatory	2475.0	0.0	2235.0	738.5	372.1	900.0	6404.0
12	Ramanandi	Participatory	2224.0	42.0	1819.6	636.0	322.5	900.0	5856.0
		Non participatory	2600.0	26.0	1900.0	656.0	335.6	900.0	6306.0
13	Dasaundia	Participatory	2345.0	35.0	1886.6	550.6	309.3	900.0	6250.0
		Non participatory	2721.0	26.0	1833.0	570.5	313.7	900.0	6737.0

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14	Bajewala	Participatory	2116.0	35.0	1833.0	441.4	322.5	900.0	5971.0
		Non participatory	2608.0	32.0	1833.0	661.0	335.6	900.0	6570.0
15	Bhameklan	Participatory	2120.0	30.0	1833.0	553.4	326.8	900.0	6220.0
		Non participatory	2675.0	20.0	1833.0	646.0	313.7	900.0	6925.0
16	Chhapinwali	Participatory	2237.0	30.0	1833.0	491.6	313.7	900.0	5786.0
		Non participatory	2687.0	0.0	1833.0	558.5	291.8	900.0	6367.0
17	Lallianwali	Participatory	2145.0	35.0	1833.0	452.0	322.5	900.0	6200.0
		Non participatory	2479.0	0.0	2100.3	530.5	372.1	900.0	6609.0
18	Sahnewali	Participatory	2245.0	30.0	2108.4	401.2	560.0	900.0	5945.0
		Non participatory	2558.0	0.0	2029.5	432.0	518.0	900.0	6486.5
19	Talwandi ak	Participatory	2795.0	20.0	2176.0	224.8	320.0	900.0	6795.0
		Non participatory	2450.0	10.0	2101.0	256.0	680.0	900.0	6721.0
20	Dalaiwali	Participatory	2387.0	25.0	2101.0	271.4	675.0	900.0	6532.0
		Non participatory	2499.0	10.0	2101.0	300.4	580.0	900.0	6749.0
21	Chalilanwala	Participatory	2410.0	25.0	2138.5	185.4	550.4	900.0	6002.0
		Non participatory	2771.0	15.0	2288.5	253.5	490.5	900.0	6711.0
22	Peron	Participatory	2200.3	15.0	2150.0	320.4	460.6	900.0	6168.0
		Non participatory	2532.0	6.5	2210.2	404.0	313.7	900.0	6656.5
23	Raipur	Participatory	2196.0	10.0	2306.4	241.4	650.0	900.0	5969.5
		Non participatory	2521.0	0.0	2351.0	300.0	560.0	900.0	6351.0
24	Maakha	Participatory	2153.0	22.0	2200.0	209.8	450.6	900.0	6105.0
		Non participatory	2365.2	15.0	2245.9	250.0	428.2	900.0	6841.0
25	Banawala	Participatory	2165.0	30.0	2198.8	440.0	390.6	900.0	6207.0
		Non participatory	2300.5	15.0	2210.2	450.0	375.2	900.0	6853.5
	Overall Average	**Participatory**	**2231.1**	**33.6**	**2050.9**	**453.2**	**370.2**	**900.0**	**6039.0**
		Non participatory	**2459.0**	**16.0**	**2110.5**	**542.4**	**388.4**	**900.0**	**6416.2**

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District Muktsar									
Sr.No.	**Village**		**seed and sowing (Rs/acre)**	**Seed treatment (Rs/acre)**	**Fertilizer (Rs/acre)**	**Insecticides (Rs/acre)**	**Weed management (Rs/acre)**	**Harvesting (Rs/acre)**	**Total input (Rs/acre)**
1	Balmgarh	Participatory	2224.0	40.0	1962.1	480.2	233.5	900.0	5839.8
		Non participatory	2897.0	0.0	1996.8	526.0	335.6	900.0	6655.4
2	GobindNagri	Participatory	2358.0	50.0	2123.5	723.6	322.5	900.0	6477.6
		Non participatory	2747.0	0.0	2243.0	889.0	335.6	900.0	7114.6
3	Mour	Participatory	3102.0	40.0	1949.1	447.8	233.5	900.0	6672.4
		Non participatory	3447.0	0.0	1932.5	618.0	437.7	900.0	7335.2
4	Badhai	Participatory	2583.0	35.0	1920.2	474.0	204.3	900.0	6116.5
		Non participatory	2747.0	0.0	1883.4	671.0	291.8	900.0	6493.2
5	RamgarhChungah	Participatory	2697.0	40.0	2375.4	583.6	335.6	900.0	6931.6
		Non participatory	3347.0	0.0	2724.5	588.0	335.6	900.0	7895.1
6	Saddarwala	Participatory	2767.0	50.0	2097.6	265.4	335.6	900.0	6415.6
		Non participatory	2847.0	0.0	2181.8	461.5	335.6	900.0	6725.8
7	Kotli Deon	Participatory	2702.0	40.0	2337.6	729.1	335.6	900.0	7044.3
		Non participatory	2847.0	15.0	2430.5	787.0	372.1	900.0	7351.6
8	BuraGujjar	Participatory	2487.0	40.0	2187.6	349.8	335.6	900.0	6300.0
		Non participatory	2697.0	25.0	2153.0	384.0	335.6	900.0	6494.6
9	LambiDhab	Participatory	2397.0	45.0	2254.4	592.5	318.1	900.0	6507.0
		Non participatory	2572.0	25.0	2443.0	889.0	335.6	900.0	7164.6
10	Gulabewala	Participatory	2417.0	50.0	2237.8	599.8	309.3	900.0	6513.9
		Non participatory	2647.0	50.0	2096.5	738.5	313.7	900.0	6745.7
11	KhappianWali	Participatory	2537.0	40.0	2349.4	665.1	318.1	900.0	6809.6
		Non participatory	2247.0	0.0	2354.5	738.5	372.1	900.0	6612.1
12	Chak Madrassa	Participatory	2345.0	40.0	1856.6	636.0	322.5	900.0	6100.1
		Non participatory	2447.0	0.0	1932.0	656.0	335.6	900.0	6270.6

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13	Madrassa	Participatory	2467.0	30.0	1933.6	550.6	309.3	900.0	6190.5
		Non participatory	2572.0	0.0	1870.0	570.5	313.7	900.0	6226.2
14	Bhagsar	Participatory	2609.0	30.0	1870.0	441.4	322.5	900.0	6172.9
		Non participatory	2722.0	25.0	1867.5	661.0	335.6	900.0	6511.1
15	Lakhewali	Participatory	2202.0	40.0	1875.0	553.4	326.8	900.0	5897.2
		Non participatory	2449.5	0.0	1867.5	646.0	313.7	900.0	6176.7
16	Nandgarh	Participatory	2072.0	25.0	1870.0	491.6	313.7	900.0	5672.3
		Non participatory	2747.0	0.0	1865.0	558.5	291.8	900.0	6362.3
17	Gandhar	Participatory	2181.0	40.0	1875.0	658.0	322.5	900.0	5976.5
		Non participatory	2197.0	0.0	1867.5	706.0	372.1	900.0	6042.6
18	Sammewali	Participatory	2057.0	45.0	1946.1	721.2	322.5	900.0	5991.8
		Non participatory	2247.0	25.0	2066.5	738.5	335.6	900.0	6312.6
19	Rahurianwali	Participatory	1842.0	30.0	2237.3	224.8	300.6	900.0	5534.7
		Non participatory	2097.0	25.0	2148.2	404.0	335.6	900.0	5909.8
20	Goneana	Participatory	2022.0	40.0	2153.0	271.4	296.2	900.0	5682.6
		Non participatory	2027.0	25.0	2165.5	404.0	335.6	900.0	5857.1
21	Canada Basti	Participatory	1942.0	40.0	2187.6	185.4	300.6	900.0	5555.6
		Non participatory	2022.0	0.0	2331.9	253.5	313.7	900.0	5821.1
22	MahaBadhar	Participatory	2057.0	40.0	2202.0	320.4	296.2	900.0	5815.6
		Non participatory	2047.0	25.0	2143.0	404.0	313.7	900.0	5832.7
23	ChakTamkot	Participatory	1847.0	50.0	2239.0	241.4	300.6	900.0	5578.0
		Non participatory	1822.0	25.0	2415.5	404.0	313.7	900.0	5880.2
24	Khunde Halal	Participatory	1797.0	30.0	2222.0	209.8	300.6	900.0	5459.4
		Non participatory	1897.0	0.0	2140.5	440.0	335.6	900.0	5713.1
25	KhunanKalan	Participatory	1785.0	25.0	2153.0	202.6	296.2	900.0	5361.8
		Non participatory	1812.0	25.0	2140.5	560.0	313.7	900.0	5751.2
	Overall Average	**Participatory**	**2299.84**	**2299.8**	**39.0**	**2096.6**	**464.8**	**304.5**	**900.0**
		Non participatory	**2485.90**	**2485.9**	**11.6**	**2130.4**	**587.9**	**334.4**	**900.0**

Annexure XIV

Profit over non participatory in the adopted villages of different districts

District Fazilka								
Sr.No.	**Village**		**Yield (Q)**	**Rate (Rs/q)**	**Total income (Rs/acre)**	**Total expenses (Rs/acre)**	**Net profits (Rs/acre)**	**Net profit over non participatory farmer (Rs/acre)**
1	JandwalaHanwanta	Participatory	20.6	1400	28840.0	7936.4	20903.6	3020.36
		Non participatory	19.3	1400	26950.0	9066.8	17883.2	
2	Acharichi	Participatory	21.4	1400	29890.0	8398.2	21491.8	3393.6
		Non participatory	19.5	1400	27300.0	9201.8	18098.2	
3	UsmaanKhera	Participatory	21.7	1400	30380.0	8433.4	21946.6	4900.6
		Non participatory	19.0	1400	26600.0	9554.0	17046.0	
4	Panniwala	Participatory	19.3	1400	26950.0	8085.0	18865.0	2228.24
		Non participatory	18.3	1400	25550.0	8913.2	16636.8	
5	Sabuana	Participatory	20.1	1400	28140.0	9321.8	18818.2	4162.6
		Non participatory	18.2	1400	25536.0	10880.4	14655.6	
6	Kabul Shah Khuban	Participatory	20.2	1400	28210.0	9901.0	18309.0	3971.8
		Non participatory	18.2	1400	25480.0	11142.8	14337.2	
7	Jandwalamira	Participatory	21.0	1400	29400.0	9949.8	19450.2	2892
		Non participatory	19.5	1400	27300.0	10741.8	16558.2	
8	LakhewaliDhab	Participatory	21.3	1400	29750.0	9171.0	20579.0	2599
		Non participatory	20.0	1400	28000.0	10020.0	17980.0	
9	Shatirwala	Participatory	19.8	1400	27650.0	8859.4	18790.6	2443.8
		Non participatory	18.5	1400	25900.0	9553.2	16346.8	
10	KheowaliDhab	Participatory	19.0	1400	26600.0	7944.2	18655.8	2149.8
		Non participatory	18.0	1400	25200.0	8694.0	16506.0	
11	Tillianwali	Participatory	20.3	1400	28420.0	8962.8	19457.2	2105.4
		Non participatory	19.0	1400	26950.0	9598.2	17351.8	
12	Patrewala	Participatory	19.5	1400	27300.0	8234.6	19065.4	2957.2
		Non participatory	18.5	1400	25900.0	9791.8	16108.2	

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13	Haripura	Participatory	17.5	1400	24500.0	8020.2	16479.8	4540.28
		Non participatory	16.0	1400	22400.0	10460.5	11939.5	
14	Dharmpura	Participatory	18.5	1400	25900.0	8420.6	17479.4	3782.98
		Non participatory	16.5	1400	23100.0	9403.6	13696.4	
15	Saidanwali	Participatory	19.9	1400	27790.0	8282.2	19507.8	3195
		Non participatory	18.0	1400	25200.0	8887.2	16312.8	
16	Danewala	Participatory	18.9	1400	26460.0	8877.8	17582.2	2599
		Non participatory	17.8	1400	24850.0	9866.8	14983.2	
17	Killianwali	Participatory	18.5	1400	25900.0	8338.1	17561.9	3382.52
		Non participatory	17.0	1400	23800.0	9620.6	14179.4	
18	Panjkosi	Participatory	22.5	1400	31500.0	7261.1	24238.9	3673.5
		Non participatory	20.4	1400	28560.0	7994.6	20565.4	
19	BazidpurKattianwali	Participatory	19.7	1400	27580.0	6834.9	20745.1	3478.7
		Non participatory	18.3	1400	25550.0	8283.6	17266.4	
20	NihalKhera	Participatory	20.8	1400	29050.0	7479.6	21570.4	4559.44
		Non participatory	18.3	1400	25550.0	8539.0	17011.0	
21	Khippanwali	Participatory	18.8	1400	26320.0	7216.8	19103.2	2417.2
		Non participatory	18.0	1400	25200.0	8514.0	16686.0	
22	BodiwalaPitha	Participatory	19.3	1400	26950.0	7219.1	19730.9	2543.08
		Non participatory	18.1	1400	25340.0	8152.2	17187.8	
23	Kathera	Participatory	19.0	1400	26600.0	6965.0	19635.0	1301.4
		Non participatory	18.8	1400	26250.0	7916.4	18333.6	
24	Danger Khera	Participatory	21.5	1400	30100.0	6988.1	23111.9	3781.9
		Non participatory	19.4	1400	27160.0	7830.0	19330.0	
25	Ghallu	Participatory	19.0	1400	26600.0	6905.0	19695.0	2573.44
		Non participatory	17.8	1400	24850.0	7728.4	17121.6	
	Overall Average	**Participatory**	**19.9**	**1400**	**27871.2**	**8160.2**	**19711.0**	**3146.1**
		Non participatory	**18.4**	**1400**	**25779.0**	**9214.2**	**16564.8**	

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District Bathinda								
Sr.No.	**Village**		**Yield (Q)**	**Rate (Rs/q)**	**Total income (Rs/acre)**	**Total expenses (Rs/acre)**	**Net profits (Rs/acre)**	**Net profit over non participatory farmer (Rs/acre)**
1	Yatri	Participatory	18.6	1400.0	26040.0	5052.0	20988.0	3248.0
		Non participatory	17.1	1400.0	23940.0	6200.0	17740.0	
2	Jodhpur Pakher	Participatory	19.0	1400.0	26600.0	5002.0	21598.0	3578.0
		Non participatory	17.6	1400.0	24640.0	6620.0	18020.0	
3	Mari	Participatory	19.4	1400.0	27160.0	5265.0	21895.0	3990.0
		Non participatory	17.3	1400.0	24220.0	6315.0	17905.0	
4	MourCharat Singh	Participatory	18.9	1400.0	26460.0	5242.0	21218.0	3663.0
		Non participatory	17.0	1400.0	23800.0	6245.0	17555.0	
5	Ram Nagar	Participatory	19.1	1400.0	26740.0	5065.0	21675.0	2855.0
		Non participatory	17.5	1400.0	24500.0	5680.0	18820.0	
6	GhumanKalan	Participatory	19.3	1400.0	27020.0	5265.0	21755.0	3025.0
		Non participatory	18.0	1400.0	25200.0	6470.0	18730.0	
7	KuttiwalKalan	Participatory	19.2	1400.0	26880.0	5342.0	21538.0	4088.0
		Non participatory	17.0	1400.0	23800.0	6350.0	17450.0	
8	Sukha Singh Wala	Participatory	18.8	1400.0	26320.0	5105.0	21215.0	2905.0
		Non participatory	17.7	1400.0	24780.0	6470.0	18310.0	
9	GhumanKhurad	Participatory	19.7	1400.0	27580.0	5125.0	22455.0	2795.0
		Non participatory	18.3	1400.0	25620.0	5960.0	19660.0	
10	KuttiwalKhurad	Participatory	18.7	1400.0	26180.0	5490.0	20690.0	2830.0
		Non participatory	17.3	1400.0	24220.0	6360.0	17860.0	
11	ThammanGarh	Participatory	19.0	1400.0	26600.0	4975.0	21625.0	4085.0
		Non participatory	17.2	1400.0	24080.0	6540.0	17540.0	
12	KotliKalan	Participatory	19.2	1400.0	26880.0	5145.0	21735.0	2865.0
		Non participatory	18.0	1400.0	25200.0	6330.0	18870.0	

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13	RajgarhKubbe	Participatory	19.0	1400.0	26600.0	5340.0	21260.0	2670.0
		Non participatory	17.4	1400.0	24360.0	5770.0	18590.0	
14	Swaich	Participatory	18.8	1400.0	26320.0	4940.0	21380.0	3265.0
		Non participatory	17.4	1400.0	24360.0	6245.0	18115.0	
15	KotliKhurad	Participatory	19.0	1400.0	26600.0	5155.0	21445.0	3095.0
		Non participatory	17.6	1400.0	24640.0	6290.0	18350.0	
16	MourKalan	Participatory	19.2	1400.0	26880.0	5185.0	21695.0	3560.0
		Non participatory	17.4	1400.0	24360.0	6225.0	18135.0	
17	MourKhurad	Participatory	19.1	1400.0	26740.0	5277.0	21463.0	2913.0
		Non participatory	17.8	1400.0	24920.0	6370.0	18550.0	
18	BhaiDesa	Participatory	18.1	1400.0	25340.0	5080.0	20260.0	2255.0
		Non participatory	17.0	1400.0	23800.0	5795.0	18005.0	
19	RamgarhBhunder	Participatory	18.7	1400.0	26180.0	5060.0	21120.0	3230.0
		Non participatory	17.3	1400.0	24220.0	6330.0	17890.0	
20	BhaiBakhtaur	Participatory	19.4	1400.0	27160.0	5235.0	21925.0	3445.0
		Non participatory	17.6	1400.0	24640.0	6160.0	18480.0	
21	Gehri Bara Singh	Participatory	19.1	1400.0	26740.0	5247.0	21493.0	2668.0
		Non participatory	17.6	1400.0	24640.0	5815.0	18825.0	
22	ManakKhana	Participatory	18.7	1400.0	26180.0	5220.0	20960.0	2970.0
		Non participatory	17.3	1400.0	24220.0	6230.0	17990.0	
23	ChattheWala	Participatory	19.1	1400.0	26740.0	5680.0	21060.0	2650.0
		Non participatory	17.6	1400.0	24640.0	6230.0	18410.0	
24	GhassoKhana	Participatory	19.5	1400.0	27300.0	5060.0	22240.0	3640.0
		Non participatory	17.9	1400.0	25060.0	6460.0	18600.0	
25	KotBhara	Participatory	19.4	1400.0	27160.0	4935.0	22225.0	3405.0
		Non participatory	18.0	1400.0	25200.0	6380.0	18820.0	
	Overall Average	**Participatory**	**19.0**	**1400.0**	**26646.3**	**5175.3**	**21471.0**	**3234.0**
		Non participatory	**17.5**	**1400.0**	**24482.5**	**6245.5**	**18237.0**	

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District Mansa								
Sr.No.	**Village**		**Yield (Q)**	**Rate (Rs/q)**	**Total income (Rs/acre)**	**Total expenses (Rs/acre)**	**Net profits (Rs/acre)**	**Net profit over non participatory farmer (Rs/acre)**
1	BurjBhalike	Participatory	21.0	1400.0	29400.0	5810.0	23122.5	2112.5
		Non participatory	19.5	1400.0	28000.0	6340.0	21010.0	
2	Ghuduwala	Participatory	20.0	1400.0	28000.0	5706.0	21732.5	3012.5
		Non participatory	18.0	1400.0	25200.0	5985.0	18720.0	
3	Ullak	Participatory	19.0	1400.0	26600.0	5685.0	20615.0	1810.5
		Non participatory	17.5	1400.0	25200.0	6065.0	18804.5	
4	Berewala	Participatory	18.4	1400.0	25760.0	5985.0	19535.0	935.0
		Non participatory	17.0	1400.0	25200.0	6110.0	18600.0	
5	Jorkian	Participatory	20.0	1400.0	28000.0	6015.0	21770.0	1765.0
		Non participatory	19.0	1400.0	26600.0	6226.0	20005.0	
6	Tandian	Participatory	18.0	1400.0	25200.0	6049.0	18866.5	1666.5
		Non participatory	17.0	1400.0	23800.0	6293.0	17200.0	
7	Jherianwali	Participatory	18.0	1400.0	25200.0	5800.0	18990.0	1004.5
		Non participatory	17.5	1400.0	24500.0	5989.5	17985.5	
8	Mian	Participatory	18.0	1400.0	25200.0	6060.0	18797.5	1587.5
		Non participatory	17.0	1400.0	23800.0	6280.0	17210.0	
9	Jagatghar b	Participatory	21.0	1400.0	29400.0	6180.0	22992.5	1566.5
		Non participatory	19.5	1400.0	28000.0	6379.0	21426.0	
10	Jatanakh	Participatory	18.0	1400.0	25200.0	6070.0	18870.0	1693.5
		Non participatory	17.0	1400.0	23800.0	6313.0	17176.5	
11	Kusla	Participatory	20.0	1400.0	28000.0	6337.0	21592.5	1666.5
		Non participatory	19.0	1400.0	26600.0	6404.0	19926.0	
12	Ramanandi	Participatory	21.0	1400.0	29400.0	5856.0	23161.0	1741.0
		Non participatory	20.0	1400.0	28000.0	6306.0	21420.0	

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13	Dasaundia	Participatory	20.0	1400.0	28000.0	6250.0	21664.0	280.0
		Non participatory	19.0	1400.0	28000.0	6737.0	21384.0	
14	Bajewala	Participatory	22.0	1400.0	30800.0	5971.0	24553.5	1657.0
		Non participatory	19.4	1400.0	29400.0	6570.0	22896.5	
15	Bhameklan	Participatory	21.0	1400.0	29400.0	6220.0	22937.5	1658.0
		Non participatory	20.0	1400.0	28000.0	6925.0	21279.5	
16	Chhapinwali	Participatory	19.0	1400.0	26600.0	5786.0	20194.0	1741.0
		Non participatory	18.0	1400.0	25200.0	6367.0	18453.0	
17	Lallianwali	Participatory	18.8	1400.0	26320.0	6200.0	20145.0	1594.0
		Non participatory	17.6	1400.0	25200.0	6609.0	18551.0	
18	Sahnewali	Participatory	19.0	1400.0	26600.0	5945.0	20447.5	1179.0
		Non participatory	17.7	1400.0	25900.0	6486.5	19268.5	
19	Talwandi ak	Participatory	21.0	1400.0	29400.0	6795.0	22895.0	1792.0
		Non participatory	19.5	1400.0	28000.0	6721.0	21103.0	
20	Dalaiwali	Participatory	20.0	1400.0	28000.0	6532.0	21493.0	1077.0
		Non participatory	19.0	1400.0	27300.0	6749.0	20416.0	
21	Chalilanwala	Participatory	21.0	1400.0	29400.0	6002.0	22837.5	1741.0
		Non participatory	18.8	1400.0	28000.0	6711.0	21096.5	
22	Peron	Participatory	19.8	1400.0	26600.0	6168.0	20012.0	1001.5
		Non participatory	17.8	1400.0	25900.0	6656.5	19010.5	
23	Raipur	Participatory	**20.0**	1400.0	28000.0	5969.5	21509.0	1021.0
		Non participatory	**17.0**	1400.0	27300.0	6351.0	20488.0	
24	Maakha	Participatory	**21.0**	1400.0	29400.0	6105.0	22909.5	1896.5
		Non participatory	**17.5**	1400.0	28000.0	6841.0	21013.0	
25	Banawali	Participatory	**18.0**	1400.0	25200.0	6207.0	18498.0	867.0
		Non participatory	**17.5**	1400.0	24500.0	6853.5	17631.0	
	Overall Average	**Participatory**	**19.7**	**1400.0**	**27594.0**	**6039.0**	**21755.0**	**2435.2**
		Non participatory	**18.2**	**1400.0**	**25536.0**	**6416.2**	**19319.8**	

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District Muktsar								
Sr.No.	**Village**		**Yield (Q)**	**Rate (Rs/q)**	**Total income (Rs/acre)**	**Total expenses (Rs/acre)**	**Net profits (Rs/acre)**	**Net profit over non participatory farmer (Rs/acre)**
1	**Balmgarh**	Participatory	19.0	1400.0	26572.0	5839.8	20732.2	4147.6
		Non participatory	16.6	1400.0	23240.0	6655.4	16584.6	
2	**GobindNagri**	Participatory	19.8	1400.0	27692.0	6477.6	21214.5	3969.0
		Non participatory	17.4	1400.0	24360.0	7114.6	17245.4	
3	**Mour**	Participatory	19.9	1400.0	27860.0	6672.4	21187.6	4162.8
		Non participatory	17.4	1400.0	24360.0	7335.2	17024.8	
4	**Badhai**	Participatory	20.7	1400.0	28980.0	6116.5	22863.5	3316.7
		Non participatory	18.6	1400.0	26040.0	6493.2	19546.8	
5	**RamgarhChungah**	Participatory	18.9	1400.0	26404.0	6931.6	19472.4	3007.5
		Non participatory	17.4	1400.0	24360.0	7895.1	16464.9	
6	**Saddarwala**	Participatory	20.1	1400.0	28140.0	6415.6	21724.4	3810.3
		Non participatory	17.6	1400.0	24640.0	6725.8	17914.2	
7	**Kotli Deon**	Participatory	20.0	1400.0	28028.0	7044.3	20983.7	3695.3
		Non participatory	17.6	1400.0	24640.0	7351.6	17288.4	
8	**BuraGujjar**	Participatory	19.0	1400.0	26628.0	6300.0	20328.0	3022.6
		Non participatory	17.0	1400.0	23800.0	6494.6	17305.4	
9	**LambiDhab**	Participatory	19.0	1400.0	26628.0	6507.0	20121.0	3485.6
		Non participatory	17.0	1400.0	23800.0	7164.6	16635.4	
10	**Gulabewala**	Participatory	20.3	1400.0	28420.0	6513.9	21906.1	2611.8
		Non participatory	18.6	1400.0	26040.0	6745.7	19294.3	
11	**KhappianWali**	Participatory	20.6	1400.0	28868.0	6809.6	22058.4	2350.5
		Non participatory	18.8	1400.0	26320.0	6612.1	19707.9	
12	**Chak Madrassa**	Participatory	20.9	1400.0	29260.0	6100.1	23160.0	2690.5
		Non participatory	19.1	1400.0	26740.0	6270.6	20469.4	

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13	**Madrassa**	Participatory	20.8	1400.0	29120.0	6190.5	22929.5	3815.7
		Non participatory	18.1	1400.0	25340.0	6226.2	19113.8	
14	**Bhagsar**	Participatory	20.3	1400.0	28420.0	6172.9	22247.2	2718.2
		Non participatory	18.6	1400.0	26040.0	6511.1	19528.9	
15	**Lakhewali**	Participatory	21.6	1400.0	30240.0	5897.2	24342.8	4479.5
		Non participatory	18.6	1400.0	26040.0	6176.7	19863.3	
16	**Nandgarh**	Participatory	20.2	1400.0	28280.0	5672.3	22607.7	2930.0
		Non participatory	18.6	1400.0	26040.0	6362.3	19677.7	
17	**Gandhar**	Participatory	20.2	1400.0	28280.0	5976.5	22303.6	3006.1
		Non participatory	18.1	1400.0	25340.0	6042.6	19297.4	
18	**Sammewali**	Participatory	19.7	1400.0	27580.0	5991.8	21588.3	3960.8
		Non participatory	17.1	1400.0	23940.0	6312.6	17627.4	
19	**Rahurianwali**	Participatory	19.9	1400.0	27860.0	5534.7	22325.4	2755.1
		Non participatory	18.2	1400.0	25480.0	5909.8	19570.2	
20	**Goneana**	Participatory	19.2	1400.0	26880.0	5682.6	21197.4	2974.5
		Non participatory	17.2	1400.0	24080.0	5857.1	18222.9	
21	**Canada Basti**	Participatory	19.3	1400.0	27020.0	5555.6	21464.4	2925.5
		Non participatory	17.4	1400.0	24360.0	5821.1	18538.9	
22	**MahaBadhar**	Participatory	19.4	1400.0	27188.0	5815.6	21372.4	3125.1
		Non participatory	17.2	1400.0	24080.0	5832.7	18247.3	
23	**ChakTamkot**	Participatory	19.2	1400.0	26852.0	5578.0	21274.0	3074.2
		Non participatory	17.2	1400.0	24080.0	5880.2	18199.8	
24	**Khunde Halal**	Participatory	19.1	1400.0	26684.0	5459.4	21224.6	2857.7
		Non participatory	17.2	1400.0	24080.0	5713.1	18366.9	
25	**KhunanKalan**	Participatory	18.2	1400.0	25452.0	5361.8	20090.2	2881.4
		Non participatory	16.4	1400.0	22960.0	5751.2	17208.8	
	Overall Average	Participatory	**19.8**	**1400.0**	**27733.4**	**6104.7**	**21628.8**	**3271.0**
		Non participatory	**17.7**	**1400.0**	**24808.0**	**6450.2**	**18357.8**	

Annexure-XV

List of Trainees

Month	Trainees (Initiative)
July 2013	Rahul Dabhane (SBI)
July - August 2013	Manoj Bande (SBI)
September, 2013	Amitanshu & Bhakti (SBI)
September, 2013	Rewasa (PPP)
September, 2013	RS Koshiyari & Prakash Dehla (HMP)

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Reviving Green Revolution Cell

Communication Centre Building
Punjab Agricultural University, Ludhiana-141004