

# IMPACT EVALUATION OF PROJECT “UP- SCALING OF KITCHEN GARDENING IN URBAN AREAS OF PUNJAB”.



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DECEMEBER, 2012**

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# **PREFACE**

Vegetables are important part of the human diet and consumed in daily life in different forms. These are the rich source of vitamins and minerals in addition to other dietary components like protein, carbohydrates and fiber. Vegetable production through kitchen gardening can play an important role not only to cope with nutritional requirements of the peri-urban and urban areas but also reduce the burden on kitchen expenditure and supply in fresh farm.

Keeping in view the above scenario under the instruction of Chief Minister Punjab, Agriculture Department implemented a project titled **“Up-Scaling of Kitchen Gardening in Urban Areas of Punjab”** which was approved by PDWP on 21.7.2011 at total cost of Rs.22.00 million for a period of two years i.e. 2011-12 & 2012. Agriculture Department has planned to use all available information media to create awareness among the people with the main objective to make available fresh quality vegetables and to enhance per capita vegetable consumption among the urban and peri urban population.

P&E Cell was entrusted the job to conduct field visits and desk monitoring for effective implementation. Two season vegetables i.e. winter and summer vegetables have been harvested, so this organization has taken up the task of impact evaluation. Impact evaluation assesses the changes that can be attributed to a particular intervention. This involves counterfactual analysis, i.e. a comparison between what actually happened and what would have happened in the absence of the intervention. Impact Evaluation seeks to answer cause-and-effect questions.

A two member team of Planning & Evaluation Cell visited project area of selected districts from 26-11-2012 to 29-11-2012 to undertake impact evaluation study. The period under study was vegetable sown & harvested during winter (*Rabi* 2011-12) and summer (*Kharif* 2012). The data shows that the vegetable germination remained at satisfactory level. Overall 177490 seed kits were provided during *Rabi* 2011-12 and 75000 seed kits were provided in *Kharif* 2012, which covered 2.34% of total area under vegetables in Punjab. The average production of seed kits vegetables was found satisfactory. The consumption pattern of target people also increased due to this intervention. Vegetables produced were healthy as minimum quantities of pesticide & chemical fertilizer were used. The officers of this office completed the evaluation wholeheartedly and zealously and I appreciate their effort. The results presented in the report will certainly be helpful to devise future strategy with special reference to kitchen gardening.

**Chief,  
Planning & Evaluation Cell,**

## Chapter No.1 Introduction

Vegetables are important part of the human diet and are consumed in daily life in different forms. Increasing population is exerting pressure day by day on available limited food supply sources. Vegetables are rich source of vitamins and minerals in addition to other dietary components like protein, carbohydrates and fiber. Thus efforts in making the availability of fresh vegetable play an important role not only to cope with nutritional requirements of the peri-urban and urban areas but also reduce the burden on kitchen expenditure.

2. At a directive of Chief Minister Punjab, a project titled **“Up-Scaling of Kitchen Gardening in Urban Areas of Punjab”** was implemented by the Agriculture Department which was approved by PDWP in its meeting held on 21.7.2011 at total cost of Rs.22.00 million for a period of two years i.e. 2011-12 & 2012-13. The detailed activities are as under:

(Units in number)

Sr. No.	Activity	2011-12	2012-13	Total
1	Preparation and selling of seed kits (5 Marla)	100000	150000	250000
2	Training of facilitators	72	72	144
3	Production & distribution of pamphlets	110000	165000	275000
4	Provision of free seed kits for demonstration plots	216	216	432
1	Free seed kits for demonstration plots	204	204	408
2	Selling of seed kits (5 Marla)	91000	137000	231000
3	Training in schools, Govt. Offices Vocational Training Centers & Residential areas	600	600	1200
4	Persons to be trained	18000	18000	36000
1	Free seed kits for demonstration plots	12	12	24
2	Selling of seed kits (5 Marla)	6000	9000	15000
3	Persons to be trained	2280	2280	4560
1	Selling of seed kits (5 Marla)	3000	4000	7000
1	Preparation of CDs of production technology & sale of seed kits	5000	5000	10000
2	Selling of CDs on demand basis	5000	5000	10000

3. As per project phasing, during 2011-12, 100,000 Vegetable Seed Kits were to be prepared and distributed to urban / peri urban masses on subsidized rate i.e. Rs. 50/- per Kit. Later on it was decided to enhance target to 200,000 Seed Kits for winter 2011-12 (Rabi) (including 30,000 to be supplied on demand). Accordingly 200,000 Vegetable Seed Kits were prepared by Agriculture Department. Against the revised planned target of 170,000, about 177,490 Seed Kits having seed of eight vegetables i.e. Radish, Carrot, Turnip, Fenugreek, Coriander, Salad, Sarsoon & Spinach were sold out/distributed during 2011-12 to the interested common persons through different wings of Agriculture Department, District Government, allied departments like Irrigation, Livestock, Forest/Fisheries & Cooperative Deptts., and NGOs. The amount recovered (98%) has been deposited in the Government treasury. The

distribution/selling of Vegetable Seed Kits were started well in time, just before the sowing time i.e. from the last week of September and completed up to the end of November 2011. Similarly, 75,000 seed kits were distributed during summer 2012 (Kharif) in March, April 2012 of Lady finger, Bitter gourd, Bottle gourd, Sponge gourd, Cucumber, Long melon, Tinda & Vegetable marrow. About 244,164 farmers were trained through training program at 10,740 sites, 190,000 printed leaflets regarding the production technology of vegetable were distributed among buyers, more than 10,000 banners were placed at different places including sale points, 35 Radio/TV talks & 153 road shows/rallies were conducted, 3331 demonstration plots were laid down at public parks, educational institutes/colleges/universities etc., Government residences/offices etc. for dissemination. During winter 2012-13 (Rabi), sale of 129500 seed kits has been reported.

4. The Planning & Evaluation Cell has to monitor the project on the following parameters:

- Develop a pretested questionnaire to collect the information from beneficiaries through interviews method as well as telephonic calls.
- Physical monitor the project activities like procurement of seed kits by the Director, VRI, Faisalabad sale of non-subsidized CDs and publicity through Directorate of Agriculture Information.
- Monitor the project progress with respect to the seed sowing, germination testing, cultural practices, micro-management, pest attack & their remedial measures.
- Identify the problems faced by the beneficiaries and suggest remedial measures as per project time bound action plan.
- See the impact of this project on the budget of beneficiary's household.
- Asses the socio-economic impact of kitchen gardening project on the society.
- Assess the project benefit with respect to objective of the government in Agriculture Sector.

5. During the implementation of project P&E Cell has conducted field visits and desk monitoring to ensure the distribution of seed kits to the beneficiaries, seed sowing, its germination rate, cultural practices, pest attack and remedial measures. But last three parameters were to be studied after the completion of project. As the one year i.e. 2011-12 of project has been elapsed, as such two season vegetables i.e. winter and summer vegetables have been harvested, so the undertaking of impact evaluation was viable.

6. The term impact evaluation is used to indicate specific types of evaluations that are primarily concerned with final results of interventions (programs, projects, policy measures, reforms) on the welfare of communities, households, and individuals. Impact evaluation assesses the changes that can be attributed to a particular intervention, such as a project, program or policy, both the intended ones, as well as ideally the unintended ones. In contrast to outcome monitoring, which examines whether targets have been achieved, impact evaluation is structured to answer the question: how would outcomes such as participants' well-being have changed if the intervention had not been undertaken? This involves counterfactual analysis, that is, "a comparison between what actually happened and what would have happened in the absence of the intervention." Impact evaluations seek to answer cause-and-effect questions. In other words, they look for the changes in outcome that are directly attributable to a program.

## Chapter No.2

### Methodology

7. For undertaking survey, five districts i.e. Faisalabad, Sheikhpura, Gujranwala, Kasaur & Lahore were selected for interview from the beneficiaries of this project. A questionnaire was developed (**Annex-A**) to interview randomly selected farmers on the following variables:

- Name and address of beneficiary.
- No. of seed kits purchased.
- Germination rate.
- Production quality.
- Area specified for kitchen gardening.
- Picking per turn of each vegetable sown.
- Overall production of different vegetables.
- Use of surplus production, if sold how much earning of each vegetable?
- If there was no project, amount spent on daily purchase of vegetables from the market and total possible expenditures.
- Amount saved due to project.
- Observation of farmers regarding general benefits.
- General observations of interviewers.

8. A two member team of Planning & Evaluation Cell visited project area of selected districts from 26-11-2012 to 29-11-2012 to undertake impact evaluation of vegetable sown & harvested during winter (Rabi 2011-12) and summer (Kharif 2012). The detail of the sample size is as under:

#### **2.1. Sample Size**

**Table No.1: District Wise Number of Selected Respondents**

<b>Sr. No.</b>	<b>District</b>	<b>Respondents interviewed</b>	<b>Kits distributed/No. of Respondents who received kits</b>	<b>Percentage surveyed</b>
1	Sheikhpura	11	3000	0.57
2	Gujranwala	9	7000	0.23
3	Kasaur	10	2025	1.33
4	Lahore	5	7500	0.13
5	Faisalabad	4	13500	0.04
6	<b>Total</b>	<b>39</b>	<b>33025</b>	<b>0.23</b>

9. Above table reveals that in total 39 respondents were interviewed who received summer & winter vegetable seed kits. The percentage of selected respondents came as 0.23%.

## Chapter No.3

### Results and Discussion

10. In this chapter data collected and analyzed on different aspects is discussed and results are inferred.

#### **3.1. Distribution of Winter and Summer Vegetable Seed Kits to Selected Respondents**

11. The respondents who got winter vegetables seed kits and summer vegetables seed kits would be different in both seasons. The data collected regarding this aspect is given as under:

**Table No.2 Distribution of Seed Kits to Selected Respondents**

<b>Sr. No.</b>	<b>Districts</b>	<b>Respondents interviewed</b>	<b>Winter seed kits received by respondents</b>	<b>Summer seed kits received by respondents</b>
1.	Sheikhupura	11	7	10
3.	Gujranwala	9	7	9
4.	Kasaur	10	13	14
5.	Lahore	5	5	5
6.	Faisalabad	4	2	4
7.	<b>Total</b>	<b>39</b>	<b>34</b>	<b>42</b>

12. Table shows that out of total 39 respondents interviewed, 34 and 42 seed kits were distributed among respondents during winter and summer season respectively. In Kasur district a few farmers have received double kits. It reveals that most of the respondents have got vegetables kits in both seasons. Moreover, increase in trend during summer against winter indicates that overtime, there is significant change in the demand of seed kits.

#### **3.2. Growing of Vegetable Seeds**

13. There was complaint that seed quality is inferior i.e. low germination.



14. The data regarding growing of vegetable is explained as under:

**Table No.3: Growing of Vegetables in Selected Respondents**

Sr. No.	Season	Vegetable	Total No. of respondents	Respondents who grow successfully	Percentage
1	Rabi 2011-12	Radish	34	24	70.59
2		Carrot	34	17	50.00
3		Turnip	34	22	64.70
4		Fennu greek (Methi)	34	24	70.58
5		Corriander	34	25	73.53
6		Sarsoon	34	16	47.05
7		Cauliflower	34	7	20.59
8		Lettuce & spinach	34	25	73.53
1	Kharif 2012	Lady finger	42	29	69.04
2		Bitter gourd	42	25	59.52
3		Bottle gourd	42	23	54.76
4		Sponge gourd	42	22	52.38
5		Cucumber	42	20	47.62
6		Long melon	42	20	47.62
7		Tinda	42	11	26.19
8		Veg. marrow	42	3	7.14

15. Table reveals that out of 34 respondents of winter vegetables about 70.59, 50, 64.70, 70.58, 73.53, 47.05, 20.59 & 73.53 percent respondents have grown Radish, Carrot, Turnip, Fennu greek, Corriander, Cauliflower & Spinach respectively successfully. Similarly, out of 42 respondents of summer vegetables about 69.04, 59.52, 54.76, 52.38, 47.62, 47.62, 26.19 & 7.14 percent respondents have grown Lady finger, Bitter gourd, Bottle gourd, Sponge gourd, Cucumber, Long melon, Tinda & Vegetable Marrow respectively successfully. It indicates that except Cauliflower, Tinda and Vegetable marrow, there was successful germination of vegetables. As per Director Vegetable AARI, the seeds which were purchased from market have less germination capacity. It is therefore inferred that vegetable seeds should not be purchased from market in future.

### **3.3. Use of Inputs and Expenditure**

16. There is general apprehension that market vegetables are highly fertilized and sprayed with pesticides. It deteriorates the environment, leaves the residues and are health hazard. The data collected in this regard is given on the next page:

**Table No.4 Average Expenditure per Respondent Incurred on the Inputs**

Sr. No.	District	No. of respondents interviewed	No. of respondents who used inputs	Expenditure on chemical fertilizers & FYM (Rs)/farmer	Expenditure on pesticides (Rs.)	Expenditure on labor (Rs.)	Total expenditure incurred on the inputs (Rs.)	Average expenditure incurred on the inputs (Rs.)
1.	Sheikhpura	11	8	3040	2000	1490	6530	816.25
2.	Gujranwala	9	8	2460	650	600	3710	463.75
3.	Kasaur	10	5	3000	-	-	3000	600.00
4.	Lahore	5	4	970	1100	200	2270	567.50
5.	Faisalabad	4	4	3400	-	-	3400	850.00
6.	<b>Average</b>							<b>659.5</b>

17. Table reveals that respondents used very little quantity of fertilizers and pesticides. It reveals that respondents produced vegetables which were free from fertilizers and pesticides residues and were not health hazard. The district wise picture is that on average there was expenditure of Rs. 816.25, 463.75, 600.00, 576.50 and Rs. 850.00 in Sheikhpura, Gujranwala, Kasaur, Lahore & Faisalabad districts respectively. The average expenditure per respondent was Rs.659.5.

### **3.4. Production of Vegetable**

18. It was also viewed that inspite of growing of vegetable there was less production. The data collected in this regard is given as under:

**Table No.5. Per Kit production of Selected Respondents (Kg)**

Sr. No.	Season	Vegetable	No. of respondents	Total production	Production per kit (Kg)
1	Rabi 2011-12	Radish	24	800.25	33.34
2		Carrot	17	478.00	28.12
3		Turnip	22	623.50	28.34
4		Fennu greek	24	259.75	10.82
5		Corriander	25	184.25	7.37
6		Sarsoon	16	310.60	19.41
7		Cauliflower	7	254.00	36.29
8		Spinach	25	660.25	26.41
9	Kharif 2012	Lady finger	29	711.50	24.53
10		Bitter gourd	25	326.25	13.05
12		Bottle gourd	23	726.50	31.59
13		Sponge gourd	22	429.00	19.50
14		Cucumber	20	459.00	22.95
15		Long melon	20	578.25	28.91
16		Tinda	11	114.50	10.41
17		Veg. marrow	3	32.00	10.67

19. Table reveals that production of vegetable remained at satisfactory level and vegetable wise production is evident from the table.

### **3.5. Share of Vegetable Kits in Total Area**

20. There is general feeling that vegetable seed kits supplied have reasonable share in total vegetable area, due to which production should have increased reasonably. The data in this regard is given below:

**Table No.6. Percentage Area Covered by Project Through Providing Kits**

<b>Sr. No.</b>	<b>Season</b>	<b>Total kits provided under project</b>	<b>Area covered under project (acres)</b>	<b>Area under project vegetable in Punjab *</b> <b>(acres)</b>	<b>Percentage area covered by project</b>
1.	Rabi 2011-12	177490	5546.56	209209	2.65
2.	Kharif 2012	75000	2343.75	127452	1.84
3.	<b>Total</b>	<b>252490</b>	<b>7890.31</b>	<b>336661</b>	<b>2.34</b>

\* excluding area of potato & onion

21. Overall 177490 kits in Rabi 2011-12 and 75000 kits in Kharif 2012 were provided to the urban household which covered 7890.31 acres of area. It comes 2.34% of total area of Punjab covered under project vegetable during both seasons.

### **3.6. General Benefits Claimed by Sample Respondents**

22. The respondents were of the view that vegetables available in the market were contaminated and health hazardous. And the vegetables produced by us are fresh, healthy and free of chemical fertilizers and pesticides. The benefits of project vegetables narrated by respondents are production with clean water, minimum pesticides use, picked properly, less use of chemical fertilizer and use of FYM. This resulted in health friendly production and availability of afresh vegetables.

### **3.7. Share of Kitchen Gardening Project in Total Production of Vegetable in Punjab (Tons) During Rabi 2011-12 & Kharif 2012**

23. In previous section it has been seen that share of project vegetables in total area of project vegetables grown in Punjab was about 2.3%. As such question arises that what is share of project vegetables in total production. The data collected in this regard is given on next page:

**Table No.8.Share of Kitchen Gardening Project in Total Production of Vegetable in Punjab (Tons) During Rabi 2011-12**

#	Season	Vegetable	Per kit production (tons)	Total No. of kits distributed (No.)	Total production of project (tons)	Production of Punjab (tons)	Share of vegetable in Punjab production (%)
1	Rabi 2011-12	Radish	0.03334	177490	5917.52	126777	4.67
2		Carrot	0.02812	177490	4991.00	161317	3.09
3		Turnip	0.02834	177490	5030.06	197078	2.55
4		Fennu Greek	0.01082	177490	1920.44	-	-
5		Corriander	0.00737	177490	1308.10	35000	3.74
6		Sarsoon	0.01941	177490	3445.08	109800	3.14
7		Cauliflower	0.03629	177490	6441.11	159915	4.03
8		Spinach	0.02641	177490	4687.51	49888	9.39
9	Kharif 2012	Lady finger	0.02500	75000	1875.00	58827	3.12
10		Bitter gourd	0.01300	75000	975.00	43591	2.27
11		Bottle gourd	0.03200	75000	2400.00	50879	4.72
12		Sponge gourd	0.02000	75000	1500.00	-	-
13		Cucumber	0.02300	75000	1725.00	38952	4.43
14		Tinda	0.01000	75000	750.00	66973	1.12
15		Veg. marrow	0.01100	75000	825.00	-	-

24. Table reveals that during Rabi season 177490 vegetable seed kits were supplied. The contribution of Cauliflower is highest with a total production of 6441.11 tons with share in Punjab production as 4.03% while Radish is second which contributes 5917.52 tons with 4.67% share in Punjab production. In Kharif season, the total distributed kits were 75000, Bottle gourd contributed highest with total production of 2400 tons with its share in Punjab production as 4.72%. The range of winter vegetable came from 1.11% to 4.69% and for summer vegetable it ranged from 1.12% to 4.72%.

### **3.8. Share of Kitchen Gardening Project Value Wise in Total Income of Vegetable in Punjab (Rs.) During Rabi 2011-12 & Kharif 2012**

25. When project vegetable kits have share in area and production, definitely it has share in value of vegetable production in Punjab. The data in this regard is given on the next page:

**Table No.9 Share of Kitchen Gardening Project Value Wise in Total Income of Vegetable in Punjab (Rs.) During Rabi 2011-12**

Sr. No.	Season	Vegetable	Production under project	Total value of project production	Production of Punjab (tons)	Total value of Punjab production	Share of value in Punjab vegetable production
1	Rabi 2011-12	Radish	5917.52	82845.28	126777	1774878	4.67
2		Carrot	4991.00	74865.00	161317	2419755	3.09
3		Turnip	5030.06	65390.78	197078	2562014	2.55
4.		Fennu-greek	1920.44	38408.80	-	-	-
5.		Corriander	1308.10	39243.00	35000	1050000	3.74
6.		Sarsoon	3445.08	51676.20	109800	1647000	3.14
7.		Cauliflower	6441.11	141704.42	159915	3518130	4.03
8.		Spinach	4687.51	70312.65	49888	748320	9.39
9.		<b>Total</b>			<b>564449.13</b>		
10.	Kharif 2012	Lady finger	1875.00	52500	58827	1647156	3.12
11		Bitter gourd	975.00	19500	43591	871820	2.24
12		Bottle gourd	2400.00	52800	50879	1119338	4.72
13		Sponge gourd	1500.00	37500	-	-	-
14		Cucumber	1725.00	44850	38952	1012752	4.43
15		Tinda	750.00	27750	66973	2478001	1.12
16		veg. Marrow	825.00	24750	-	-	-
17		<b>Total</b>			<b>259650</b>		

26. Table reveals that during Rabi season Cauliflower contributed highest share. Its total value is Rs. 141704.42 with its share in total value of Punjab production as 4.03% and the Radish is second one which contributed Rs. 82845.28 with its share in Punjab as 4.67%. While in Kharif season Bottle gourd contributed Rs. 52800 in value term with its share in Punjab as 4.72% and Lady finger is second vegetable which contributed Rs. 52500 with its share in Punjab as 3.12.

### 3.9. Increase in Vegetable Consumption Per Week During Winter & Summer Season Due to Project (No. of Days)

27. It is a general thinking that when we purchase vegetable from market it will be consumed less and vice versa. The data collected in this regard is given as under:

**Table No.10. Increase in Vegetable Consumption Per Week Due to Project**

District	Rabi 2011-12			Kharif 2012		
	Before	After	Change in frequency	Before	After	Change in frequency
Sheikhupura	2.43	3.29	0.86	2.67	3.83	1.16
Gujranwala	2.00	3.00	1.00	2.20	3.20	1.00
Kasur	3.43	4.43	1.00	3.33	4.22	0.89
Lahore	3.00	4.00	1.00	3.00	3.80	0.80
Faisalabad	2.00	3.00	1.00	2.50	3.50	1.00
<b>Average</b>	<b>2.57</b>	<b>3.54</b>	<b>0.97</b>	<b>2.74</b>	<b>3.71</b>	<b>0.97</b>

28. Table reveals that average consumption after project has increased, the change in consumption ranged from 0.86 to 1 day in winter season and from 1.16 to 0.89 days in summer season in different districts. Per month it increased about 4 times and as per two vegetable seasons (6 months) about 24 times vegetables were eaten more than before.

### 3.10. Extent of Home Consumption and Distribution to Neighbors

29. It is a general habit that when we have excessive production than need, it is distributed to nearby fellows or it is sold in market. The data collected in this regard is given as under:

**Table No.11. Extent of Home Consumption of Winter & Summer Vegetables (%)**

District	Rabi 2011-12			Kharif 2012		
	Total production (kg)	Home consumed (Kg)	Extent of home consumption (%)	Total production (kg)	Home consumed (Kg)	Extent of home consumption (%)
Sheikhupura	743	459	62	593	381	64
Gujranwala	436	331	76	292	203	69
Kasoor	1256	896	71	1442	922	64
Lahore	1047	578	55	765	421	55
Faisalabad	89	89	100	285	256	90
<b>Total</b>	<b>3571</b>	<b>2352</b>	<b>66</b>	<b>3377</b>	<b>2183</b>	<b>65</b>

30. Table reveals that the extent of home consumption varies from 55% to 100% for winter vegetables and 55% to 90% for summer vegetables. Remaining vegetables were distributed to neighbors. None of the respondent reported that he has sold the vegetables in the market.

### 3.11. Saving in Vegetable Consumption During Rabi 2011-12 & Kharif 2012

31. It is natural that when vegetables are produced at home, there will be no expenditure on purchase of vegetables. The data collected on saving of vegetable due to project is given as under:

**Table No.12. Saving of Expenditure Due to Project on Per Week Use Basis**

#	Seasons	Av. per week use of vegetable (No.)	Av. per month use of vegetable (No.)	Av. per day expenditure (Rs.)	Av. total value per month (Rs.)	Av. total value during crop season (Rs.) per farmer	Av. per respondent expenditure (Rs.)	Per kit cost (Rs.)	Total expenditure (Rs.)	Net savings (Rs.)	Total No. of kits	Total savings (Rs.)
1.	Rabi 2011-12	2.57	10.28	110	1130.80	3392.40	659.5	50	709.5	2682.90	1,77,490	476187921
2.	Kharif 2012	2.74	10.96	110	1205.60	3616.80	659.5	50	709.5	2907.30	75,000	218047500
3.	<b>Total</b>	-	-	-	-	-	-	-	-	<b>5590.2</b>	<b>252490</b>	<b>694235421</b>

32. Table reveals that total saving during Rabi should have been Rs. 476.18 million & during Kharif as Rs. 218.04 million if all the respondents have achieved benefits on same pattern as of respondents. From here it can be concluded that little efforts at large level contribute highly significant impact on society.

### 3.12. Benefit Cost Ratio of the Project

33. Benefit Cost Ratio is an indicator for the judgment of performance of a project, if it is more than one, it is viable. The data of project in this regard is given below:

**Table No.13. Benefit Cost Ratio of Project**

#	Season	Income earned through sale of kits (Rs)	Income earned through vegetable production (Rs.)	Total Income (Rs.)	Total cost (released during 2011-12) (Rs. In million)	Benefit cost ratio
1.	Rabi 2011-12	8,874,500	564449.13	9438949.13	<b>8.669</b>	<b>1:1.55</b>
2.	Kharif 2012	3,750,000	259650.00	4009650		
3.	<b>Total</b>	<b>12,624,500</b>	<b>824099.13</b>	<b>13448599.13</b>		

34. Table shows that the total income earned through the sale of seed kits in both seasons reached at Rs. 12.62 million and the income earned through vegetable production in both seasons was Rs.0.824 million with a total income of Rs. 13.45 million against the total release of funds of Rs. 8.67 million during 2011-12. The Benefit Cost Ratio came as 1:1.55 which shows that the project is highly viable.

### **3.13. General Observations**

35. During field visit/survey and discussions with Agriculture Extension staff and respondents, the following observations were noted:

- 3.13.1. The cost of kits in many cases was born by extension staff. This accounts to thousands as per Field Assistant and higher ups. The extension staff could not recover the amounts due to their social contacts with the respondents and staff considers it against derogatory to demand Rs.50 or Rs.100 from respondents.
- 3.13.2. Baidars of Extension Department have been used extensively in sowing of vegetables and then after care activities such as hoeing, fertilizing, and spraying. This is not a good practice, due to which departmental activities are affected.
- 3.13.3. Seed kits packed from market seeds have less germination and quality. It gives bad name to Department.
- 3.13.4. In cities, location of plots is not suitable. In winter, plots remain shadowed, germination and production is reduced. In summer there is too hot due to heat up of walls. It also spoils the quality and production of vegetables.
- 3.13.5. The idea of growing vegetables on roofs is not accepted by the public.
- 3.13.6. In cities income of the people is high due to which they are less vegetarian and they do not give due importance to grow vegetables.



## Chapter No.4

### Conclusions and Recommendations

36. The project has its positive impact on the society in terms of production, income and consumption pattern. The project ensured the availability of clean, fresh and healthy vegetables which are free from chemical fertilizer & pesticide residues as the respondents have used very little quantity of chemical fertilizers and pesticides. The data shows that the vegetable production remained at satisfactory level. Overall 177490 seed kits were provided during Rabi 2011-12 and 75000 seed kits were provided in Kharif 2012 which covered 2.34% of total area under vegetable in Punjab. The main findings are as under:

- Out of total 39 respondents interviewed, 34 and 42 seed kits were distributed among respondents during winter and summer season respectively.
- About 252490 kits were supplied during Rabi & Kharif season during 2011-12 and it covered about 2.34% of total area of vegetable excluding potato & onion. Although this percentage is in-significant but provides a valid base for its propagation.
- The germination of winter vegetable ranged from 20.59% to 73.53%. This situation needs efforts.
- The germination of summer vegetable ranged from 7.14% to 69.04%. It is not a healthy sign.
- The average expenditure on inputs was Rs. 659.50 per respondents. The main expenditure was on farmyard manure and labor. The expenditure on other inputs was minimum.
- The per kit production of different vegetables in winter season ranged from 7.37 to 36.29 kg.
- The per kit production of different vegetables in summer season ranged from 10.41 to 31.59 kg.
- The share of winter vegetables production in total production of Punjab ranged from 2.55 to 4.03%.
- The share of summer vegetables production in total production of Punjab ranged from 1.12 to 4.72%.
- The value wise share of different winter vegetables production ranged from 2.55 to 4.67%.
- The value wise share of different summer vegetables production ranged from 1.12 to 4.72%.
- The increase in consumption pattern per week of both seasons came as 0.97 days.
- The extent of home consumption in both seasons came as 66% while remaining was distributed to neighbors.

- The per respondents savings due to project in Rabi & Kharif seasons came as Rs.2682.90 & Rs. 2907.30 respectively.
- The Benefit Cost Ratio of the project came as 1:1.55.
- The cost of kits in most cases has been born by the extension staff of Agriculture Department.
- Baildars of extension wing have been used extensively in sowing of vegetables and after care activities.
- Seed kits packed from market seeds have less germination and need some intervention.
- In cities, location of plots is not suitable, remained shadowed in winter season and hot in summer season.
- The idea of growing vegetables on roofs is not accepted by the urban population.
- In cities income of people are high and are less vegetarians, thus paid no attention in growing of vegetables.

### **Recommendations**

37. In future this exercise should not be taken on project basis. It should be made a regular feature of Agri. Extension wing of Agriculture Department as in the past. This department has been preparing kits and offering for sale. As it is a healthy activity and keeps the urban men & women busy, the lesson emerged in the exercise needs to be addressed in future planning. The major drawbacks noted in the implementation of project are as follow:

- a. Complaint of seed having low germination.
- b. Capacity building in production technology at micro level
- c. Involvement of private sectors.

38. These three factors need elaboration and further discussion is given as under:

#### **a. Complaint of Seed Having Low Germination**

39. Most vegetables seed used in this project were purchased from the open market. Although filters like testing of germination by Vegetable Research Institute (VRI), AARI and FSC & RD was used but did not give the desired results. This may be due to:

- i. Unsatisfied quality of seeds.
- ii. Poor sowing methods adoption.

40. The survey team observed that seed produced by VRI has less complaint. It is therefore proposed that VRI may develop the capacity of vegetable growers for seed production and in this regard hybrid seed may be preferred because it has vigor as well quality. As far as method of sowing is concerned, although brochure with seed kit was provided but as seeds are soft and small, care is necessary while sowing the seed. This is discussed in the next headings.

**b. Capacity Building in Production Technology at Micro Level.**

41. Capacity building was important component of the project. It was successfully implemented through imparting training of master trainers at Multan, Faisalabad, Rawalpindi divisions at district and local level. Demonstration in public places at school/colleges, propaganda through mass media and distribution of CDs but it still needs further improvement. The attention should be given more on method of sowing and other micro management such as, weed management and harvesting practices etc.

**c. Involvement of Private Sectors**

42. NGO's and private sector have shown interest due to which we have achieved more than the targets. The private sector may be encouraged to participate in this program in following ways:

- i. To enhance the capacity of production of vegetables seed of private sector by Research Wing. In the mean time the department will enhance the seed production capacity of Research Wing to cope the needs of project.
- ii. To enhance the capacity building of NGO's for production of kitchen vegetables mainly emphasizing on sector of quality seed, method of sowing and micro management practices.
- iii. Commercialization of seed kits preparation and its sale through private sector.