Ad-hoc Research Study No.-126

Impact of Tejaswini Rural Woman Empowerment Programme on Empowerment of Rural Women through Vegetables Production in Dindori and Chhatarpur Districts of Madhya Pradesh

Study Sponsored by
Madhya Pradesh Woman Finance and Development Corporation
(Government of Madhya Pradesh)

AGRO- ECONOMIC RESEARCH CENTRE
FOR MADHYA PRADESH AND CHHATTISGARH
Jawaharlal Nehru Krishi Vishwa Vidyalaya,
Jabalpur (M.P.)

September 2018

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Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur (M.P.)

PREFACE

The present study entitled "Impact of Tejaswini Rural Woman Empowerment Programme on Empowerment of Rural Women through Vegetables Production in Dindori and Chhatarpur districts of *Madhya Pradesh" has been sponsored by Madhya Pradesh Woman Finance and Development Corporation, Bhopal, Government of Madhya Pradesh.*

The study comprises 105 Beneficiaries and 105 Non- Beneficiaries vegetable growers of Dindori and Chhatarpur districts. The study reveals that although vegetable production is found to be profitable in beneficiary's farms, but due to lack of storage facilities they were found to be sold their products on non-remunerative prices. Hence, adequate storage facilities should be developed in the area under study.

The present study was conducted by Dr. H. O. Sharma, Dr. S. B. Nahatkar and Dr. Deepak Rathi of this University. They have done field investigation, tabulation, analysis, interpretation and drafting of the report. I wish to express my deep sense of gratitude to team members namely; Mr. S.K. Upadhye, Dr. Ravi Singh Chouhan, Dr. Hemant Kumar Niranjan, Mr. S.S. Thakur, Mr. Rajendra Singh Bareliya, Mr. P.R. Pandey, Mr. Akhilesh Kuril and Mr. P. K. Patidar for their untiring efforts in bringing this innovative study to its perfect shape with in 3 month from the inception of the project.

On behalf of the Centre, I express deep sense of gratitude to Dr. P. K. Bisen, Hon'ble Vice-Chancellor and Chairman Advisory Body of AERC, Jabalpur, Smt. Sonali Ponkshe Vayangankar, Managing Director, Shri A. S. Bhal, Deputy Programme Director, Madhya Pradesh Woman Finance and Development Corporation,Dr. P.K. Mishra, Dean Faculty of Agriculture, Dr. Dhirendra Khare, Director Research Services, Dr. S. D. Upadhyay, Director Instruction, Dr. (Smt.) Om Gupta, Director of Extension and Dr. R. M. Sahu, Dean, College of Agriculture, Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur for providing the valuable guidance and all facilities during various stages in successful completion of this study of high importance.

I express sincere thanks to Shri Yashwant Sonwani, Add. District Project Manager, Tejaswani Programme of Dindori and and Shri Manoj Nayak, District Project Manager Tejaswani Programme of Chhatarpur districts and their field staff for not only providing secondary data but also extending great assistance in collection of field data from the selected beneficiaries and non beneficiaries respondents.

I hope the findings and suggestions made in the study will be useful for policy makers of the State and other organizations.

Date: 22. 09.2018
Place: Jabalpur

(Hari Om Sharma)
Prof. & Director /
Nodal Officer

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CHAPTER-I

INTRODUCTION

1.1 Background

India is the second most populous country and producers of fruits and vegetables in the world next only to china, (NHB, 2011). With the increasing population, the cultivable land resource is shrinking day by day to meet the food, fibre, fuel, fodder and other needs of the growing population, the productivity of agricultural land and soil health needs to be improved (Maity & Tripathy, 2003). Horticultural crops being highly seasonal, perishable are also capital and labour intensive requires handling and transportation with special care which is a difficult task (Dastagiri et. al, 2013).

Presently in India 7.49 million ha area is cultivated with vegetables with an annual production of 116.03 million tones with the per capita availability of vegetable (210g/head/day) is still behind the recommended quantity (285g /head /day). It is estimated that, by 2020 the vegetable demand of the country would be around 135 million tonnes. To achieve this target, attention is required to be focused on the vertical expansion, strengthened with the boon of the technology instead of horizontal expansion just by increasing the crop area. Hi-tech interventions in horticultural crops proposed by National Committee on Plasticulture Applications in Horticulture (NCPAH), Govt. of India, which include drip irrigation and greenhouse technology for the selected crops such as capsicum, chili and tomato etc. The response of tomato and okra to drip irrigation in terms of yield improvement was found to vary agro-climatic and soil conditions in India (Paul et. al, 2013).

Green Revolution in the post independence era has shown path to developing countries for self-sufficiency in food but sustaining agricultural production against the finite natural resource base Green revolution technologies such as greater use of synthetic agrochemicals like fertilizers and pesticides, adoption of nutrient-responsive, high-yielding varieties of crops, greater exploitation of irrigation potentials etc. has boosted the production output in most cases (Maity & Tripathy, 2003). The demand of agri-products have been shifted from the "resource degrading" chemical agriculture to a "resource protective" biological or organic agriculture.

More than 40 kinds of vegetables from different groups such as the solanaceous, cucurbitaceous, leguminous, cruciferous, root and leafy are gown in tropical, subtropical and temperate regions. The vegetable business provides an excellent opportunity for producers and consumers alike to diversify their business and their tastes respectively. As a link between producer and consumer, marketing plays a very important role, not only in stimulating production and consumption but also in increasing the rate of economic development.

Its dynamic functions are thus of primary importance in promoting economic activities and it has therefore been described as the most important factor in the development of the vegetable business (Singh, 2016).

As women are integral part of society, their status and participation in decision making as well as economic activities is very low. Women's empowerment is set of requirements which will ensure the gender equality in the society with the help of private sector. Microfinance plays very important role in improving women decision making by contributing in economic activities (Iftikhar et. al, 2018).

In Indian communities, the moneylenders provide credit at the high rate of interest and the poverty trap exists. Microfinance is the prime tool for poverty alleviation. National Bank for Agriculture and Rural Development (NABARD) coordinates the microfinance between self help groups (SHGs) and the financial institutions such as commercial banks, Regional Rural Banks (RRBs) etc.. SHGs in India are dominated by women, which help them both economically and socially. Microfinance is not only this, but it also has a broader perspective which also includes micro insurances, micro transactional services and importantly savings. Microfinance service is a tool for providing financial services to the low-income population, which do not have access to the mainstream financial services (Kishore & Jayaram, 2018).

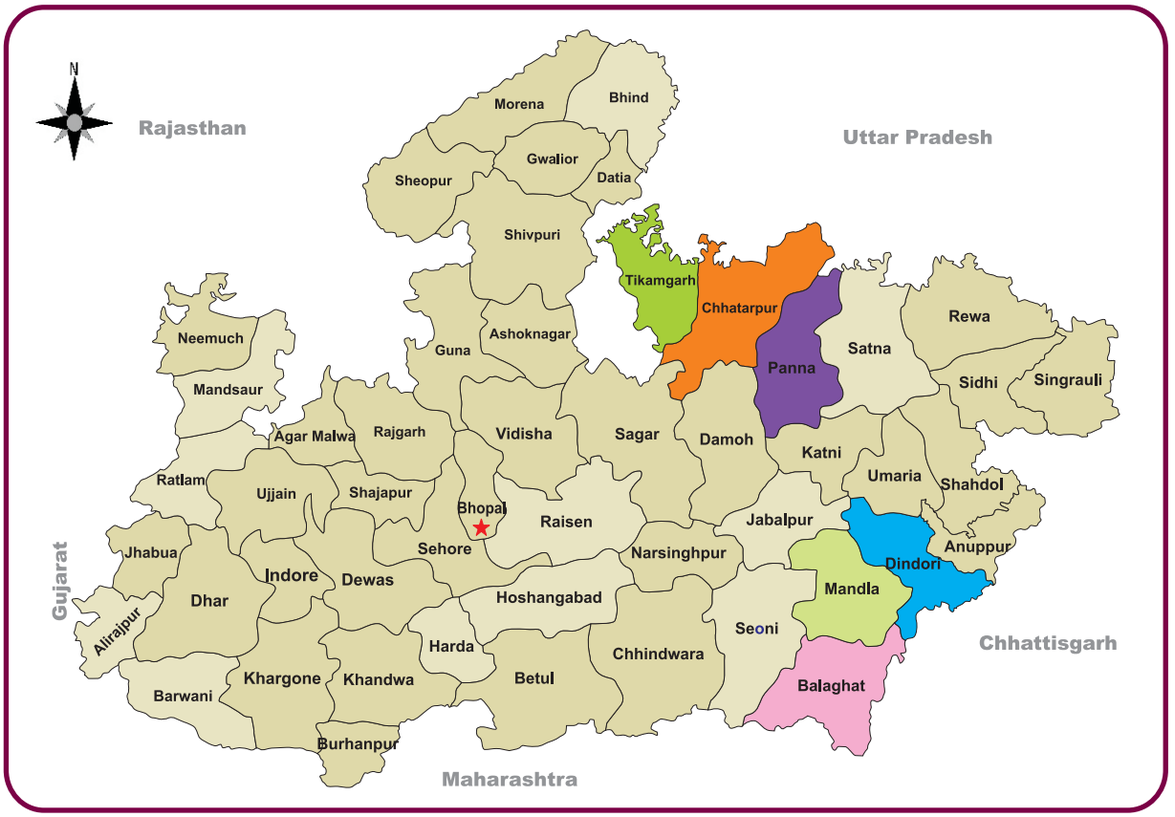

Fig. 1.1 : Selected district in Madhya Pradesh under Tejaswini Programme

Tejaswini means radiance or one who gives light, and reflects the objective of the project in moving women to a higher level through their collective efforts and mutual assistance. Empowerment is a multi-faceted, multi-dimensional and multi-layered concept. Women's empowerment is a process in which women gain greater share of control over resources - material, human and intellectual like knowledge, information, ideas and financial resources like money - and access to money and control over decision-making in the home, community, society and nation, and to gain `power'. According to the Country Report of Government of India, "Empowerment means moving from a position of enforced powerlessness to one of power".

The process by which people, organizations or groups who are powerless a) become aware of the power dynamics at work in their life context, b) develop the skills and capacity for gaining some reasonable control over their lives and c) exercise this control without infringing on the rights of others and d) support the empowerment of others in the community (Kumar, 2014). Looking to the above facts in mind the present study has been under taken to evaluate impact of Tejaswini Rural Woman Empowerment Programme on Empowerment of Rural Women through Vegetable Production in Dindori and Chhatrpur district of Madhya Pradesh with following special objectives:

1.2 Objectives of the Study

1. To analyze the key features of the initiative and role of different institutions/partners' in dissemination of technology.
2. To determine the socio-economic profile of the selected beneficiaries and non beneficiaries.
3. To analyze the impact of vegetable production in Madhya Pradesh.
4. To identify bottlenecks in adoption of the technologies in the area under study and suggests way and means to overcome these constraints.

1.3 Data and Methodology

A list of all the beneficiaries (19365) under different locations viz. Dindori (8425), Mandla (2680), Balaghat (1059), Chattarpur (2041), Panna (2340), Tikamgarh (2829) has been provided by the office of the Madhya Pradesh Viita Vikas Nigam (MVVN), Bhopal. These 6 districts have been further classified in to two as per their locations (Fig.1.1) in the State i.e. Southern area (Dindori, Mandla, Balaghat) and Northern area (Chhatarpur, Panna, Tikamgarh) In these 2 locations, 1 district in each location viz. Dindori and Chhatarpur have been selected purposively from Sothern and Northern locations respectively for the study. (Fig.1.2)

Further, 1 percent of beneficiaries' viz. 85 in Dindori and 20 in Chhatarpur districts have been selected for the study. Thus, 105

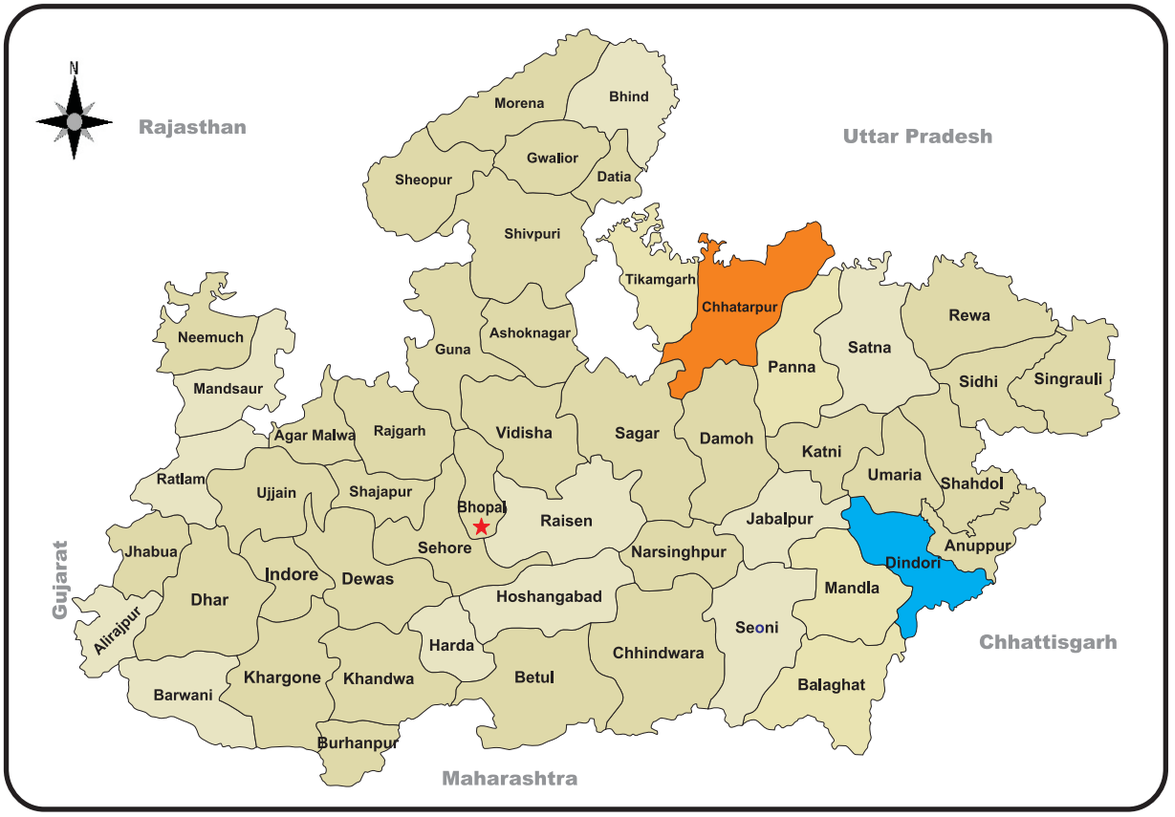

Fig. 1.2 : Selected district for vegetables cultivation under the study

beneficiaries along with the same number of non beneficiaries (105) were also be selected from the same villages having same size of holding and socio economic status for the study, constituting total size of sample of 210 respondents. These beneficiaries were further classified as per the cultivation of vegetables grown by them in the area under study. Beneficiary were found to grow several vegetables viz. Tomato, Okra, Potato, Cucurbits, Brinjal, Chili, Cowpea, Beans, Cabbage, Radish and Leafy vegetables, out of which on the basis of percentage of vegetables grown by the maximum numbers of viz. Tomato, Brinjal, Chili, Cowpea and Leafy vegetables have been considered for the study. (Table 1.1)

The primary data were collected from the selected respondents on various parameters

Fig.1. 3: Collection of primary data from Chhatarpur District

Fig.1.4: Collection of primary data from Dindori District

Fig.1.5 Collection of secondary data from Dindori District

Table 1.1 : Vegetables grown by beneficiaries (%)

Vegetable Crops	No. of respondents		
	Dindori (85)	Chhatarpur (20)	Total (105)
Tomato	44 (51.76)	11 (55)	55 (52.38)
Brinjal	33 (38.82)	8 (40)	41 (39.05)
Chili	36 (42.35)	5 (25)	41 (39.05)
Barbati/Cowpea	52 (61.18)	0 (0)	52 (49.52)
Leafy Veg.	32 (37.65)	3 (15)	35 (33.33)
Others (Okra, Turnip, corienders ect.)	13 (15.29)	4 (20)	17 (16.19)

n= Numbers of Respondents

viz. socio economic conditions, land use pattern, cropping pattern, cost of cultivation of vegetables and local practices, family consumption etc. Control Vs Treated techniques was used to analyze the impact of vegetable production vis-a-vis local practices.

The suitable analytical tools were used to draw conclusions including compared means techniques. The study was conducted during the year 2018-19.

Following concepts were used to draw conclusion.

1. **Percentage Change over Non-Beneficiaries**

$$\text{Percentage Change} = \frac{Yn-Yo}{Yo} \times 100$$

Where

Yn=Beneficiaries

Yo=Non-Beneficiaries)

2. **Mean :**

The average of the variables used for the study.

$$\text{Mean} \quad \overline{X} = \frac{\Sigma x}{n}$$

Where,

X = Mean of the variables

Σx = Sum of scores (observation) of variables

n = Total number of respondents

3. **Interest of working Capital :** @10 per cent of variable inputs

4. **Rental Value of owned land :** @1/6 of gross income

5. **Interest on Fixed Capital :** @10 per cent of total capital assets (excluding land).
6. **Managerial Cost :** @10 per cent of total cost to account for managerial input.
7. **Cost of Cultivation (per acre)** = Operational Cost+Input Cost+Fixed Cost+Managerial Cost
8. **Net income** = Gross income -Total cost of cultivation
9. **Cost of production (per q)** = (Total cost of cultivation –value of by product)/ yield
10. **Cost Benefit Ratio** = Gross Income /Total Cost
11. **Cropping intensity**

It is the percentage of the total cropped area to net area sown or

$$\text{Cropping intensity (\%)} = \frac{\text{Gross Cropped Area}}{\text{Net Area Sown}} \text{X } 100$$

1.4 Limitations of the Study

The present study is purely based on primary data. The study pertains to the primary data collected for the agriculture year 2018-19. Moreover, respondents provided information based on their recall memory. Thus, there is a possibility of certain memory bias to enter in the presentation of the data. The considerable care is taken while generalizing the acceptability of the results of this study.

1.5 Organization of the Study

The study is organised into 4 chapters. Chapter I cover the introductory part of the study and Key features of the Programme is given in Chapter II, Impact of cultivation of vegetables is presented in chapter III and conclusions and policy implications are given in chapter IV.

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CHAPTER-II

KEY FEATURES OF THE PROGRAMME

This Chapter deals with intervention and outreach in terms of number of beneficiaries of vegetable production i.e. tomato, brinjal, chilli, cowpea, leafy vegetables etc., development/implementation process adopted, role of different institutions in implementing the interventions and key features of the intervention with strength and weakness. The contributing factors for the success and failure of the programm were also dealt in this chapter.

2.1 Intervention: Vegetable production confined to all the districts comes under the Tejaswini Prigramme i.e Dindori (8425), Mandla (2680), Balaghat (1059), Chattarpur (2041), Panna (2340), Tikamgarh (2829). In Dindori 8425 members were found to be engaged in production of tomato, brinjal, cowpea, amaranthus, spinach, radish, bottle gourd, bitter gourd, green chilli vegetables etc. while in Chattarpur 2041 members were found to be engaged in production of viz. tomato, radish, spinach, bottle gourd, pumpkin, cucumber etc. vegetables. Tejaswini provide Rs.3000 to the beneficiaries for seed, fertilizer, plant protection measures and crop management at once in the first year of vegetable production. Although, most of the beneficiaries grow vegetables in small scale for domestic consumption and remaining quantity was found to be sold out in the local market. While beneficiaries who cultivated vegetables on large scale used to sell it in tribal hostels (18) and schools (55) in the district for Mid Day Meal programme.

2.2 Development/Implementation Process: Tejaswini program was assessed by the staff for the promotion of the target groups. The most of the women under the area are basically engaged in vegetable production activity. The feasibility of the vegetable production activities by the beneficiaries by also evaluated and found that vegetable production can be an easy choice, in which women can diversify their income on regular basis. This also secure additional source of income generation. Tejaswini program on vegetable production was prepared to connect women for enhancement of their social, economic and political development. Above all it was designed on demand and supply module. The implementation of Tejaswini programme for empowering women and focused to enhance their savings and promote mutual help among members and help them to opened saving account in nationalized banks.

2.3 Role of Different Institutions: The association of following institutions was found to carry out various activities for cultivation of vegetables from production to marketing of products.

2.3.1 Department of Agriculture: The district office of Departments of Farmers Welfare and Agriculture Development have been provided technical training on Package and Practices of vegetables and machinery use to the members of SHGs time to time. The farmers were found to be provided all the facilities and input, which were the path of various developmental programmes of the State.

2.3.2 Krishi Vigyan Kendra: The scientists of Krishi Vigyan Kendra were found to be involved in providing improved vegetable production technology i.e. sowing, seed treatment, nursery, management, irrigation, spacing, plant protection measure, weeding, fertilizer dose, harvesting, marketing etc.

2.3.3 District Administration: The district administration was also found to be involved in formulating various strategies for production and marketing of vegetables to insure them remunerative price to their products. The savings of beneficiaries used to be deposited in Nationalized bank viz. State Bank of India (Dindori & Maharajpur, Chattarpur). The members of SHGs also got financial assistance for economic activities.

2.3.4 Schools and Hostels: Schools and their Hostels also played an important role in marketing of vegetables grown by SHGs. The vegetables grown by the members of SHGs were found to be consumed by the students in Mid Day Meal Programme and in the Hostel Mess.

2.4 Key Features of the Intervention: Vegetable growers were found to be satisfied with the quality and quantity of the vegetables grown by them. Women are able to produce vegetables in small pockets and they successfully produce the vegetables. Vegetable producers have achieved self-reliance in the use of nutrients as vegetables were found to be producing with Vermi-compost, Vermi-wash in their fields. Beneficiaries' were found to used High Yielding Varieties (HYVs) for seed production. Farmer women sold nearly 30-40 percent of their production in rural hats or cities directly to the ultimate consumer and got higher share in Consumer's rupee than the local market.

2.5 Contributing Factors: Family members of beneficiaries used to consume more vegetables hence their nutrient requirements was found to be fulfilled to some extent. Cropping intensity of beneficiaries was also found to be increased due to introduction of vegetables' in their cropping pattern. Saving of beneficiaries has been increased manifold due to production of vegetables. Some of women got additional income as they produced of vegetables at commercial scale.

2.6 **Problems:** Soil of both the locations were found to be degraded, low soil depth and undulated topography as well as small size of the fields hamper the use of machinery in the field. It is very difficult to grow vegetable in Rabi and Zaid season due lack of irrigation facilities. Attack of wild animals also a problem in reduction of production. Due to sloppy topography of land, manure and fertilizer flow away from the field with rain water resulting into less productivity of vegetables. Some of the beneficiaries found to practice it as a kitchen garden.

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CHAPTER-III

IMPACT OF VEGETABLES CULTIVATION

Socio-economic profile, operational area, irrigated area, cropping pattern, cost and return and its impact on SHGs across different parameters on sample holdings are covered under this chapter. This helps in understanding the existing situation of SHGs, income received from production of different vegetables.

3.1 Socio-Economic Profile

Socio-economic characteristics of selected beneficiaries and non beneficiary's households (HHs) of the study area is presented in Table 3.1.

It is observed from the data that the

Table 3. 1: General characteristics of respondents (% of respondents)

Particulars	Beneficiaries	Non- Beneficiaries
Number of respondents	105	105
Average Age of respondents (Years)	31	33
Caste		
Other Backward Caste	38.10	43.81
Schedule Caste	11.43	7.62
Schedule Tribe	50.48	48.57
Education status of respondent		
Illiterate	24.76	35.24
Primary	42.86	39.05
Middle	21.90	19.05
High School	7.62	5.71
Higher Secondary	2.86	0.95
Religion- Hindu	100.00	100.00
Agriculture as main occupation (%)	100	100
Secondary Agri Labour	62.48	73.81
Self employment	37.52	26.19
Family size (Number)		
Male	3	4
Female	2	2
Children (<16 Years)	1	1
Persons engaged in farming (Number)	3	4
Experience in farming (Years)	15	11
Average annual income/member (Rs.)	62800	55500
On Farm	51500	40800
Off Farm	11300	14700

average age of beneficiary HH was found to be 31 years with 15 years of experience in farming and had a family of 6 members includes 3 male, 2 female and 1 child. The main occupation of the beneficiaries was found to be farming, they were also found to be engaged in secondary occupation. In secondary occupation the majority of them were found to be worked as agricultural labours followed by self employment. In case of non-beneficiaries 73.81 per cent were found to be engaged as agricultural labour and 26.19 per cent were self employed while in case of beneficiaries, it was found to be 62.48 and 37.52 per cent, respectively. The average income per member/year was found to be more than 13.15 per cent in case of beneficiaries (Rs.62800/-) as compared to non-beneficiaries (Rs. 55500/-), which shows that beneficiaries are comparatively in better position as compared to non-beneficiaries as far as their socio-economic condition is concerned. As regards to their educational status, the beneficiaries were found to be educated up-to middle (42.86%) followed by illiterate (24.76%), high school (21.9%) and higher secondary (2.86%). On an average beneficiary HH had an annual income of Rs. 62800/- in which farming (Rs.51500 /year) was main source of income.

It is also observed from the data that the average age of non beneficiaries HHs was 33 years with 11 years of experience in farming and had a family of 7 members includes 4 male, 2 female and 1 children. All the non beneficiaries HHs choose farming as a main occupation and all of them also found to be engaged themselves in a secondary occupation. In secondary occupation the majority of them used to work as agricultural labours (73.81%) followed by self employment (26.19%). As regards to their educational status the majority of them were literate up to primary school (39.05%) followed by Illiterate (35.24%), Middle (19.05 %), High School (5.71) and higher secondary (0.95%). On an average a beneficiary HH had an annual income of Rs. 55500/- in which farming (Rs.40800/year) was main source of income.

Hence it is concluded from the above that beneficiary HHs were found to be more literate, more self capable and earning more income than non-beneficiary HHs while other things remain almost same in both the cases.

3. 2 Present Value of Farm & Home Assets

The present value of farm as well as home assets of beneficiary and non-beneficiary households (HHs) have been analysed and presented in Table 3.2.

It is observed from the data that an average beneficiary HH (Rs. 8317.09) owned 12.08 per cent more farm and home assets as compared to non beneficiary (Rs. 7420.8). In total value of farm assets of beneficiary HH (Rs. 1733.62), the present value of bullock cart (42.63%) was found to be more as compared to other farm assets i.e. bakkhar (28.16%), wooden plough (17.15%) and tifan (12.06%).

In total value of farm assets of non-beneficiary HH (Rs. 1716.12), the present value of bullock cart (45.63%) was also found to be more as compared to other farm assets i.e. bakkhar (25.63%), wooden plough (15.83%) and tifan (12.91%).

Out of total home assets of an average beneficiary HH's farm (Rs. 6583.47), the present value of TV (54.27%) was found to be more as compared to mobile (23.10%), cycle (16.73%) and fan (5.89%). Out of total home assets of an average non beneficiary HH's farm (Rs. 5704.68), the present value of TV (57.94%)

Table 3.2 : Present value of assets of respondents (Rs/HH)

Particulars	Beneficiaries	Non- Beneficiaries	% Change over Non- Beneficiaries
Farm Assets			
Bakkhar	488.12 (28.16)	439.87 (25.63)	10.97
Tifan/Khurpi	209.16 (12.06)	221.55 (12.91)	-5.59
Wood Plough	297.23 (17.15)	271.66 (15.83)	9.41
Bullock Cart	739.11 (42.63)	783.04 (45.63)	-5.61
Total	1733.62 (100)/20.84/	1716.12 (100)/23.13/	1.02
Home Assets			
Television	3572.99 (54.27)	3305.55 (57.94)	8.09
Fan	388.08 (5.89)	336.42 (5.9)	15.36
Mobile	1520.73 (23.1)	1215.5 (21.31)	25.11
Cycle	1101.67 (16.73)	847.21 (14.85)	30.04
Total	6583.47 (100)/79.16/	5704.68 (100)/76.87/	15.40
Grand Total	8317.09 /100/	7420.8 /100/	12.08

Figure in parenthesis show percentage to respective total, while in slashes show percentage to grand total

was also found to be more as compared to mobile (21.31%), cycle (14.85%) and fan (5.9%).

Thus, average beneficiary HH has only 1.02 and 15.40 per cent more farm and home assets respectively as compared to non-beneficiary HH indicating the well being of beneficiaries over non- beneficiaries.

3.3 Monthly Expenditure

The monthly expenditure pattern of an average beneficiary and non beneficiary HH was also observed and presented in table 3.3. It is observed from the data that an average beneficiary HH (Rs. 2865/month) spend 22.07 per cent more in his monthly expenditure than that of non-beneficiary HH (Rs. 2347/ month). Amongst the different item of monthly expenses, he was found to spend maximum amount on food (23.73%) followed by clothes (11.24%), education of children (8.38%), medicines (6.6%), expenses on social and religious programmes (5.93%) and animal (3.32%). Amongst the different item of monthly expenses an average non-beneficiary was found to spent maximum on food (23.01%) followed by clothes (13.34%), education of children (8.99%), medicines (6.69%), expenses

Table 3.3 : Monthly expenditure pattern of respondents (Rs./HH)

Particulars	Beneficiaries	Non- Beneficiaries	% Change over Non- Beneficiaries
Food material (vegetable pulses fruits etc)	680 (23.73)	540 (23.01)	25.93
Cloth	322 (11.24)	313 (13.34)	2.88
Education (Books & School fees)	240 (8.38)	211 (8.99)	13.74
Health (Medical) Exp.	189 (6.6)	157 (6.69)	20.38
Animal (Grass, Grain & Medicine)	95 (3.32)	53 (2.26)	79.25
Social program	170 (5.93)	126 (5.37)	34.92
Other	1169 (40.8)	947 (40.35)	23.44
Total	2865	2347	

Figure in parenthesis show percentage to respective total

on social and religious programmes (5.37%) and animal (2.26%).

Thus, it can be concluded that in all the items of monthly expenditure an average beneficiary HH was found to spend 22.07 per cent more as compared to non-beneficiary HH. The maximum amount of monthly expenditure was found to be spend on food material followed by clothing and other expenditure in both the categories.

3.4 Land Use Pattern

Land use pattern of an average beneficiary and non beneficiary HH was analyzed and presented in table 3.4. It is observed from the data that an average beneficiary HH and non-beneficiary households owned 3.42 and 3.51 acres of land respectively, out of which 0.06 and 0.14 acres land was found to be uncultivated & grazing land. It is also found that he used to keep 0.05 and 0.11 acre of land fallow in current Rabi season due to lack of irrigation. The 35.57 and 38.21 per cent of net cultivated area of an average beneficiary and non beneficiary HH respectively was found to be under irrigation. Leased in land was also found in the practice, an average beneficiary & non beneficiary HH used to occupy 0.12 and 0.09 acres leased in land respectively during the year under study. The area under cultivation with an average beneficiary was found to be 3.31 & 3.26 acres and operational area 3.43 & 3.35 in case of beneficiary and non- beneficiary, respectively. An average beneficiary household used to have

Table 3.4 : Land use pattern of respondents (Acre/HH)

Particulars	Beneficiaries	Non- Beneficiaries	% Change over Non- Beneficiaries
Total Size of Holding	3.42 (100)	3.51 (100)	2.56
Un-cultivated Land Un-Cultivated & other grassing land	0.06 (1.75)	0.14 (3.99)	57.14
Current Fallow	0.05 (1.46)	0.11 (3.13)	54.55
Cultivated Land	3.31 (96.78)	3.26 (92.88)	1.53
Leased in Land	0.12	0.09	33.33
Net Cultivated Area (3+4)	3.43	3.35	2.39
Irrigated Area (% to NCA)	1.32 (38.48)	1.19 (35.52)	9.09

Figure in parenthesis show percentage total size of Holding

33.33 per cent more leased in land than non beneficiary HH. His net cultivated area was also found to be 2.39 per cent more than non beneficiary HH, while the area under uncultivated and grazing land and current fallow was found to be 57.14 and 54.55 per cent less as compared to an average non beneficiary HH.

Thus, it can be concluded that the un-cultivated and fallow land was found to be low in case of beneficiaries as compared to non-beneficiaries farm resulted in higher percentage of cultivated land owned by beneficiary HH as compared to non- beneficiary HH. The irrigated area was found to be 9.09 per cent more in beneficiary farm as compared to non-beneficiary farm.

3.5 Cropping Pattern

An average beneficiary HH (184%) was found to cultivate his land 17.91 per cent more intensively than an average non beneficiary HH (160%) during the year under study. An average beneficiary and non-beneficiary HH used to cultivate crops in both the seasons of a year, although Kharif was found to be main season for cultivation of crops in which an beneficiary HH (54.27%) and non beneficiary HH (62.5%) devoted their maximum net cultivated land, while in Rabi he was found to be devote his 45.73 and 37.5 per cent of net cultivated land respectively.

All the beneficiary HHs used to cultivate improved high yielding varieties of crops i.e. Tomato (Luxmi, US-2535, KTH-355, HY), Brinjal (Pusa purple long an HABR-21), Okra (Kranti), Cowpea (Ruchi, Local , CP-4) while majority of the non beneficiaries HHs were found to be use local varieties of seed.

In Kharif season, Tomato, Brinjal, Chilli, Bhindi, Cowpea and Leafy Vegetables were found to be major vegetables grown by an average beneficiary and non-beneficiary HHs, in which they used to allocate their 11.37 & 3.58, 6.12 & 5.37, 7.87 & 2.99, 5.83 & 4.78, 5.25 & 3.28 and 11.95 & 4.48 per cent of total Kharif area, while Tomato, Brinjal and Leafy Vegetables were found to be major Rabi vegetables cultivated by them and allocate 4.84 & 7.96, 6.57 & 7.46 and 23.18 & 13.93 per cent of total rabi area, respectively. An average beneficiary HH also found to allocate 2.39 and 43.78 per cent more in Kharif and Rabi season, respectively than an average non- beneficiary HH.

Hence, it can be concluded that due to efficient training and demonstrations to beneficiary HHs and varietal adoption of major vegetables grown during Kharif season, an average beneficiaries HH used to allocate 225, 173, 170, 63, 25 and 17 per cent more area than the non-beneficiaries HH under Tomato, Leafy Vegetables, Chilli, Cowpea, Bhindi and Brinjal, while in Rabi season the area under Leafy vegetables and Brinjal was found to be 139 and 27 per cent more in case of beneficiaries than non-beneficiaries HH, in tomato it was found to be 12.50 per cent less, which resulted in 24 per

Table 3.5 : Cropping Pattern of respondents (Acre/HH)

Crops	Beneficiaries	Non- Beneficiaries	% Change over Non- Beneficiaries
Kharif Season			
Tomato	0.39 (11.37)	0.12 (3.58)	225.00
Brinjal	0.21 (6.12)	0.18 (5.37)	16.67
Chili	0.27 (7.87)	0.1 (2.99)	170.00
Bhindi	0.2 (5.83)	0.16 (4.78)	25.00
Cowpea (Barbati)	0.18 (5.25)	0.11 (3.28)	63.64
Leafy Vegetables	0.41 (11.95)	0.15 (4.48)	173.33
Paddy	1.04 (30.32)	1.31 (39.1)	-20.61
Kodo/Kutki	0.61 (17.78)	1.06 (31.64)	-42.45
Maize	0.07 (2.04)	0.13 (3.88)	-46.15
Others	0.05 (1.46)	0.03 (0.9)	66.67
Total Kharif	3.43 (100)/54.27/	3.35 (100)/62.5/	2.39
Rabi Season			
Tomato	0.14 (4.84)	0.16 (7.96)	-12.50
Brijal	0.19 (6.57)	0.15 (7.46)	26.67
Leafy Vegetables	0.67 (23.18)	0.28 (13.93)	139.29
Wheat	1.02 (35.29)	0.96 (47.76)	6.25
Gram	0.41 (14.19)	0.37 (18.41)	10.81
Ramtil	1.09 (37.72)	0.49 (24.38)	122.45
Others	0.37 (12.8)	0.19 (9.45)	94.74
Total Rabi	2.89 (100)/45.73/	2.01 (100)/37.5/	43.78
Gross Cropped Area (GCA)	6.32 /100/	5.36 /100/	17.91
Cropping Intensity (%)	184	160	24

Figure in parenthesis show percentage to respective total Rabi & Kharif, while in slashes show percentage to total GCA

cent more cropping intensity on beneficiaries farm (184%) as compared to non-beneficiaries farm (160%).

3.6 Cost of Cultivation and Return

The cost incurred and returns obtained from the production of the major vegetables cultivated by the respondents viz. tomato, brinjal, chilli, cowpea and leafy vegetables have been analysed both for beneficiaries and non beneficiaries HHs.

3.6.1 Tomato

Tomato was found to be a major vegetable grown by sample respondents both in kharif and rabi season.

3.6.1.1 Cost of Cultivation of Tomato

The cost of cultivation of tomato for an average beneficiary and non beneficiary HH's farm presented in table 3.6. It is observed from the data that an average total cost in cultivation of tomato under beneficiary HH (Rs. 16706.78/acre) was found to be 3.61 per cent more than an average non beneficiary HH (Rs. 16124.89). An average beneficiary HH found to engage less hired human labour (31.78%), machinery power (13.91), bullock labour (8.25%) and family human labour (85.95%) as compared to non-beneficiary HH. Beneficiary HH was found to invest less on seed treatment (100.00%), irrigation (7.46%), Insecticide (4.86%), depreciation (3.49%) and manures & fertilizer (1.82%) while used to expense more on hybrid seeds (22.97%) as compared to non beneficiary HH in cultivation of tomato. The indirect cost (fixed cost) was found to be 20.16 per cent higher in case of an average beneficiary HH (Rs. 7187.00/acre) as compared to an average non beneficiary HH (Rs. 5981.00/acre).

In total cost of cultivation of tomato the share of total fixed cost was found to be 6 per cent higher on an average beneficiary HH farm (43%) than non-beneficiary HH farm (37%), while share of total operational cost and total material cost in total cost of cultivation were found to be 5 & 1 per cent less on an average

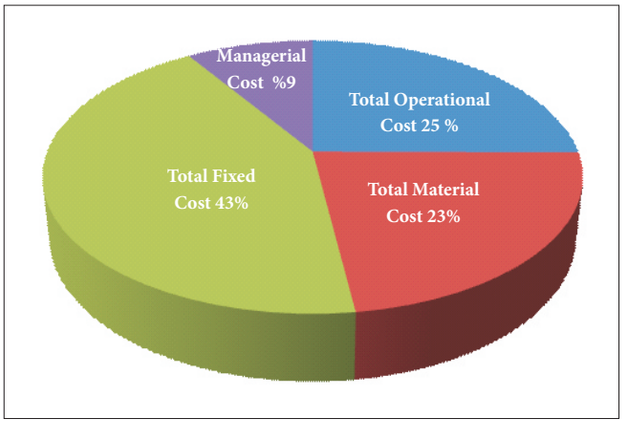

Fig. 3. 1: Contribution of different cost in cost of cultivation of tomato (Beneficiaries)

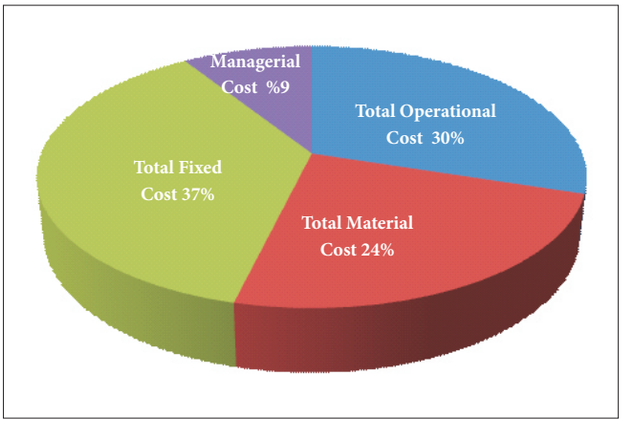

Fig. 3. 2: Contribution of different cost in cost of cultivation of tomato (non-Beneficiaries)

Table 3. 6 : Cost of cultivation of Tomato (Rs/Acre)

Particu;ars		Beneficiaries	Non- Beneficiaries	% Change over Non- Beneficiaries
Operational Cost				
A. Human labour	Family	1740.00 (41.53)	1850.00 (38.39)	-5.95
	Hired	784.85 (18.73)	1150.46 (23.88)	-31.78
B. Machinery Power		119.2 (2.84)	133.11 (2.76)	-13.91
C. Bullock labour		1546 (36.90)	1685 (34.97)	-8.25
Total Operational Cost		4190.05 (100)	4818.57 (100)	-13.04
Material Cost				
A. Seed		455 (11.94)	370 (9.59)	22.97
B. Seed Treatment		0* (0.00)	25 (0.65)	-100.00
C. Manure & Fertilizers		2430 (63.76)	2475 (64.13)	-1.82
D. Insecticide		274 (7.19)	288 (7.46)	-4.86
E. Irrigation		583 (15.30)	630 (16.32)	-7.46
F. Depreciation		68.93 (1.81)	71.42 (1.85)	-3.49
Total Material cost		3810.93 (100)	3859.42 (100)	-1.26
Total Variable cost		8000.98	8677.99	-7.80
Fixed Cost				
A. Rental Value of own land		7150.00 (99.49)	5940.00 (99.31)	20.37
B. Revenue /tax		12 (0.17)	12 (0.20)	0.00
C. Interest on Fixed capital		25 (0.35)	29 (0.48)	-13.79
Total Fixed Cost		7187.00 (100)	5981.00 (100)	20.16
Managerial Cost		1518.80	1465.90	3.61
Total Cost of Cultivation		16706.78	16124.89	3.61

Figures in Parenthesis show the percentage to respective total * Treated Seed was supplied to Beneficiaries

beneficiary HH (25 & 23%) farm than an average non-beneficiary HH farm (30 & 24%). The managerial cost was found to be identical in case of an average beneficiary (9%) and non- beneficiary HH farm (9%) in cultivation of tomato (Fig. 3.1 & 3.2).

3.6.1.2 Profitability of Tomato

The cost of production to produce a quintal of Tomato was also found to be 21.99 & 12.33 per cent less at total variable cost and total cost of cultivation of tomato on an average beneficiary's as compared to non-beneficiary's HH farm, while net income received from production of tomato was found to be 29.44 & 34.22 per cent more at total variable cost and total cost of cultivation respectively, resulted in

Table 3.7 : Profitability in cultivation of Tomato (Rs./Acre)

Particulars		Beneficiaries	Non-Beneficiaries	% Change over Non- Beneficiaries
Yield (q/acre)		52	44	18.18
Rate/quintal (Rs.)		825	810	1.85
Gross Return(Rs./acre)		42900	35640.00	20.37
Net Income	Over Variable Cost	34899.02	26962.01	29.44
	Over Total Cost	26193.22	19515.11	34.22
Cost of production (Rs/q)	Over Variable Cost	153.87	197.23	-21.99
	Over Total Cost	321.28	366.47	-12.33
Return/Rs. investment	Over Variable Cost	5.36	4.11	30.56
	Over Total Cost	2.57	2.21	15.99

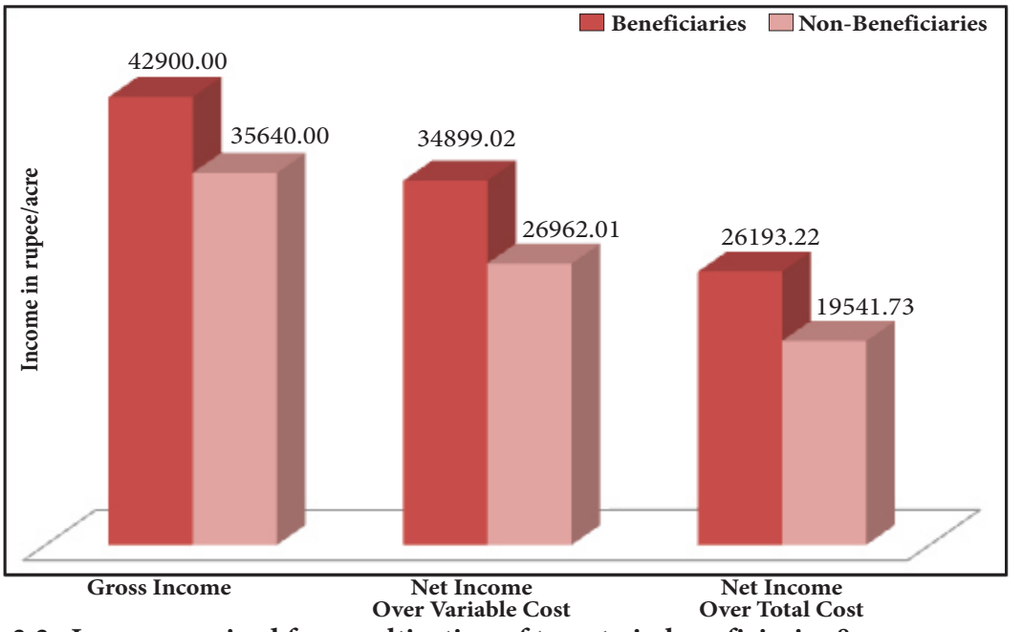

Fig. 3.3 : Income received from cultivation of tomato in beneficiaries & non-beneficiaries farms

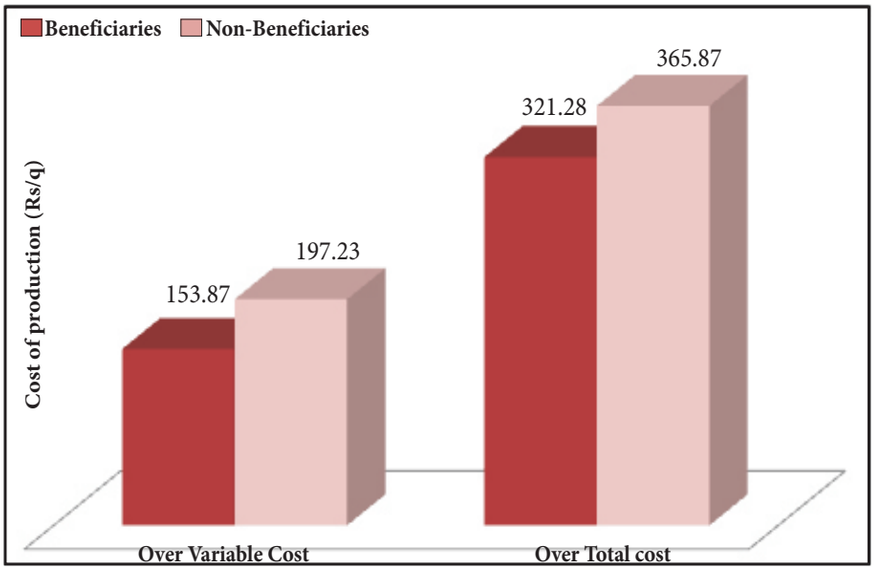

Fig. 3.4 : Cost of production of tomato in beneficiaries & non-beneficiaries farms

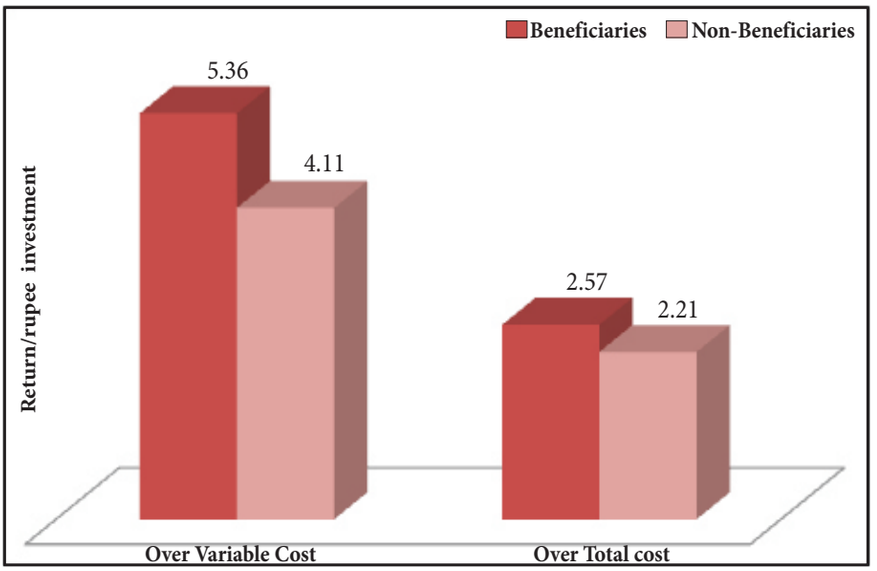

Fig. 3.5 : Return/rupee investment of tomato in beneficiaries & non- beneficiaries farms

increase of return per rupee investment by 30.56 & 15.99 per cent more at total variable cost ant total cost of cultivation, on an average beneficiary's as compared to non-beneficiary's HH farms respectively (Table 3.7).

3.6.2 Brinjal

Brinjal was found to be an other major vegetable grown by sample respondents both in kharif and rabi season by the respondents of the study area.

3.6.2.1 Cost of Cultivation of Brinjal

The cost of cultivation of Brinjal for an average beneficiary and non beneficiary HH's farm is presented in table 3.8.

It is observed from the data that an average total cost in cultivation of Brinjal under

beneficiary HH (Rs.25492.38/acre) was found to be 0.20 per cent less than an average non-beneficiary HH (Rs. 25544.71/acre). An average beneficiary HH was found to used less expenditure on bullock labour (16.70%), hired human labour (16.10%), machine labour (10.12%), family human labour (7.85%), seed (5.56%), irrigation (7.09%), seed treatment

Table 3.8 : Cost of cultivation of Brinjal (Rs/Acre)

Particulars	Beneficiaries	Non- Beneficiaries	% Change over Non- Beneficiaries
Operational Cost			
A. Human labour- Family	1680.00 (40.34)	1823.12 (38.05)	-7.85
Hired	793.12 (19.04)	945.3 (19.73)	-16.10
B. Machinery Power	93.66 (2.25)	104.21 (2.18)	-10.12
C. Bullock labour	1598 (38.37)	1918.44 (40.04)	-16.70
Total Operational Cost	4164.78 (100)	4791.07 (100)	-13.07
Material Cost			
A. Seed	850 (23.91)	900 (23.31)	-5.56
B. Seed Treatment	0* (0.00)	20 (0.52)	-100.00
C. Manure & Fertilizers	1723 (48.47)	1789 (46.34)	95.39
D. Insecticide	324 (9.11)	445 (11.53)	72.81
E. Irrigation	590 (16.60)	635 (16.45)	-7.09
F. Depreciation	68.03 (1.91)	71.42 (1.85)	-4.75
Total Material cost	3555.03 (100)	3860.42 (100)	-7.91
Total Variable cost	7719.81	8651.49	-10.77
Fixed Cost			
A. Rental Value of own land	11250.00 (99.64)	9737.50 (99.56)	15.53
B. Revenue /tax	12 (0.11)	12 (0.12)	0.00
C. Interest on Fixed capital	28.3 (0.25)	30.4 (0.31)	-6.91
Total Fixed Cost	11290.30 (100)	9779.90 (100)	15.44
Managerial Cost	2317.49	2322.25	-0.20
Total Cost of Cultivation	25492.38	25544.71	-0.20

Figures in Parenthesis show the percentage to respective total *Treated seed was supplied to beneficiaries

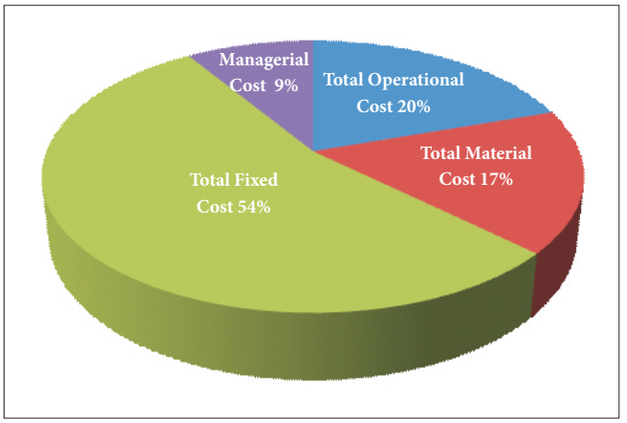

Fig. 3. 6: Contribution of different cost in cost of cultivation of brinjal (Beneficiaries)

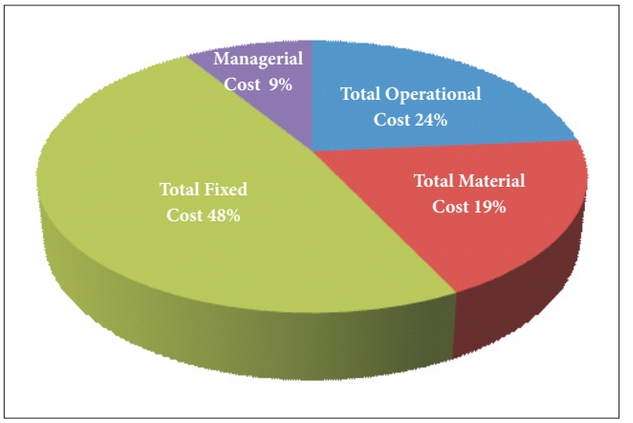

Fig. 3. 7: Contribution of different cost in cost of cultivation of brinjal (non-Beneficiaries)

(100.00%) , while invested more on manures & fertilizer (95.39%) & insecticide (72.81) in cultivation of Brinjal as compared to non beneficiary HH.

In total cost of cultivation of brinjal the share of total fixed cost was found to be 6 per cent higher on an average beneficiary HH farm (54%) than non-beneficiary HH farm (48%), while share of total operational cost and total material cost in total cost of cultivation were found to be 4 & 2 per cent less on an average beneficiary HH (20 & 17%) farm than an average non-beneficiary HH farm (24 & 19%). The managerial cost was found to be identical in case of an average beneficiary (9%) and non- beneficiary HH farm (9%) in cultivation of tomato (Fig. 3.6 & 3.7).

3.6.2.2 Profitability of Brinjal

The cost of production to produce a quintal of brinjal was also found to be 18.70 & 9.08 per cent less at total variable cost and total cost of cultivation of Brinjal on an average

Table 3.9 : Profitability in cultivation of Brinjal (Rs./Acre)

Particulars		Beneficiaries	Non-Beneficiaries	% Change over Non- Beneficiaries
Yield (q/acre)		45	41	9.76
Rate/quintal (Rs.)		1500	1425	5.26
Gross Return(Rs./acre)		67500	58425	15.53
Net Income	Over Variable Cost	59780.19	49773.51	20.10
	Over Total Cost	42007.62	58425.00	-28.10
Cost of production (Rs/q)	Over Variable Cost	171.55	211.01	-18.70
	Over Total Cost	566.50	623.04	-9.08
Return/Rs. investment	Over Variable Cost	8.74	6.75	29.48
	Over Total Cost	2.65	2.29	15.77

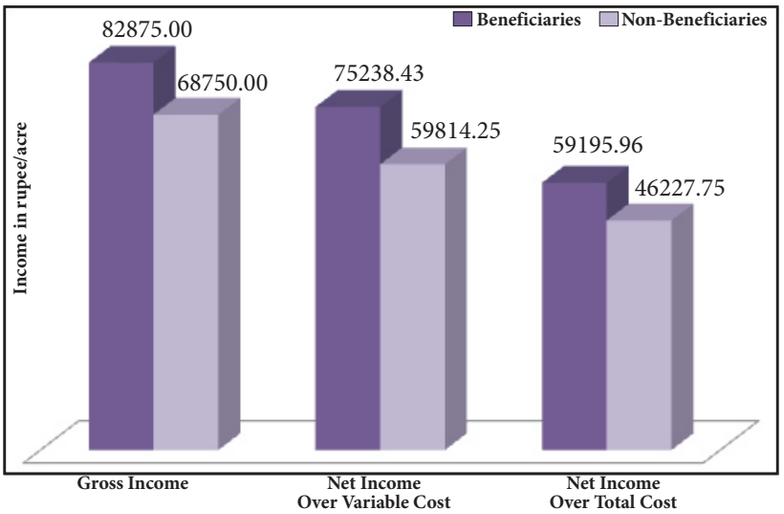

Fig. 3.8 : Income received from cultivation of brinjal in beneficiaries & non-beneficiaries farms

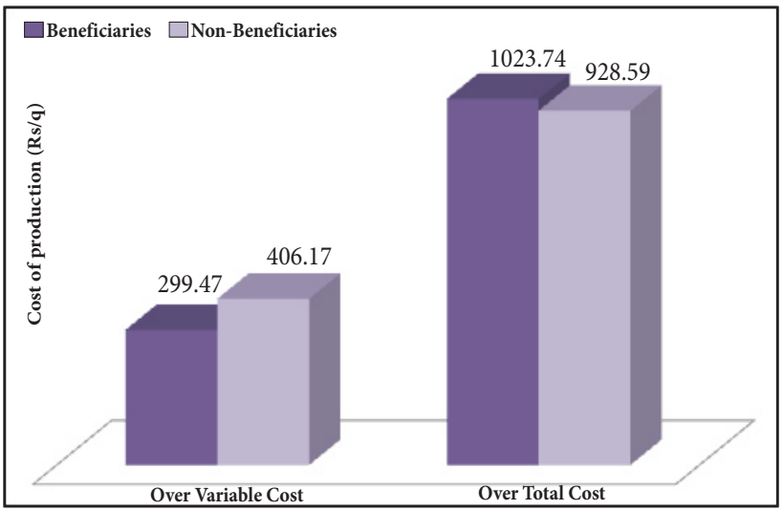

Fig. 3.9 : Cost of production of brinjal in beneficiaries & non-beneficiaries farms

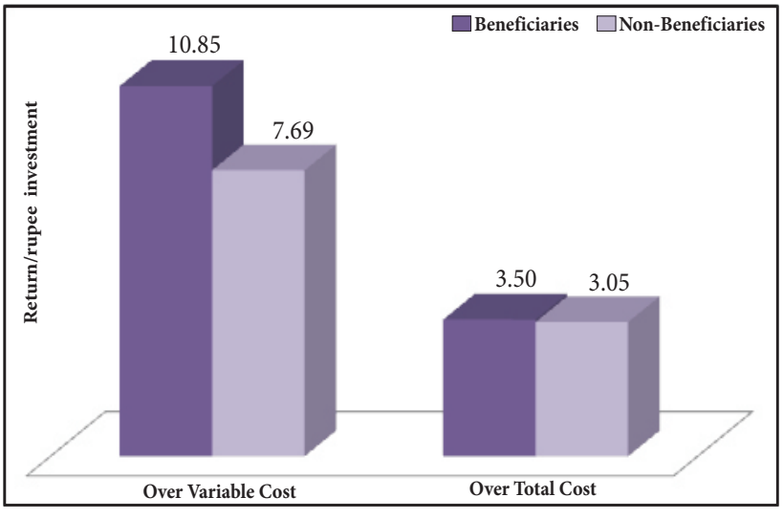

Fig. 3.10 : Return/rupee investment of brinjal in beneficiaries & non- beneficiaries farms

beneficiary's as compared to non-beneficiary's HH farm, while net income received from production of Brinjal was found to be 20.10 per cent more & 28.10 per cent less at variable cost and total cost of cultivation respectively, resulted in increase of return per rupee investment by 29.48 & Rs. 15.77 per cent more at variable cost ant total cost of cultivation, on an average beneficiary's as compared to an average non- beneficiary's HHs farm respectively (Table 3.9).

3.6.3 Chilli

Chilli was found to be a major vegetable grown by sample respondents both in Kharif and Rabi season by the majority of respondents of the study area.

3.6.3.1 Cost of Cultivation of Chilli

The cost of cultivation of Chilli for an average beneficiary and non-beneficiary HH's farm presented in table 3.10. It is observed from the data that an average total cost in cultivation of Chilli under beneficiary HH farm (Rs.23679.04/acre) was found to be 5.14 per cent more than an average non beneficiary HH (Rs. 22522.25/acre). An average beneficiary HH was found to use less seed treatment (100.00%), seed (47.83%), insecticide (18.54%), hired human labour (16.96%), family human labour (16.96%), manures & fertilizer (15.90%), depreciation (7.10%), machinery power (4.70%) while expense more on bullock labour (2.74%) in cultivation of Chilli as compared to non beneficiary HH.

The indirect cost (fixed cost) was found 20.37 per cent higher in case of an average beneficiary's HH farm (Rs. 13889.83/acre) as compared to an average non beneficiary's HH farm (Rs. 11539.02/acre). In total cost of cultivation of Chilli, the share of total fixed cost was found to be 8 per cent higher on an average beneficiary HH farm (59%) than non-beneficiary HH farm (51%), while share of total operational cost and total material cost in total cost of cultivation were found to be 4 & 4 per cent less on an average beneficiary HH (20 &

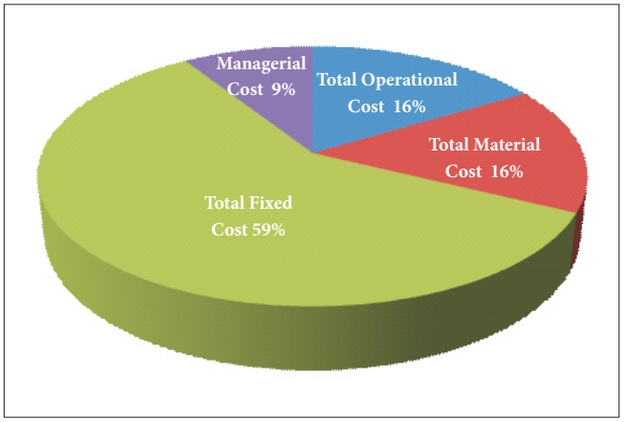

Fig. 3. 11: Contribution of different cost in cost of cultivation of chilli (Beneficiaries)

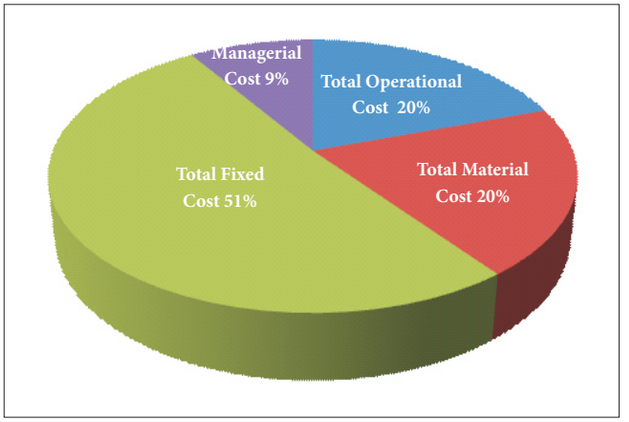

Fig. 3. 12: Contribution of different cost in cost of cultivation of chilli (non-Beneficiaries)

Table 3.10 : Cost of cultivation of Chilly (Rs/Acre)

Particulars		Beneficiaries	Non- Beneficiaries	% Change over Non- Beneficiaries
Operational Cost				
A. Human labour	Family	1910.00 (49.22)	2300.00 (51.73)	-16.96
	Hired	955.00 (24.61)	1150.00 (25.87)	-16.96
B. Machinery Power (Hired)		95.67 (2.47)	100.39 (2.26)	-4.70
C. Bullock labour (Owned)		920 (23.71)	895.5 (20.14)	2.74
Total Operational Cost		3880.67 (100)	4445.89 (100)	-12.71
Material Cost				
A. Seed		120 (3.19)	230 (5.12)	-47.83
B. Seed Treatment		0* (0.00)	15 (0.33)	-100.00
C. Manure & Fertilizers		2750 (73.22)	3270 (72.83)	-15.90
D. Insecticide		368.2 (9.80)	452 (10.07)	-18.54
E. Irrigation		450.2 (11.99)	450.2 (10.03)	00.00
B. Depreciation		67.5 (1.80)	72.66 (1.62)	-7.10
Total Material cost		3755.9 (100)	4489.86 (100)	-16.35
Total Variable cost		7636.57	8935.75	-14.54
Fixed Cost				
A. Rental Value of own land		13812.50 (99.44)	11458.33 (99.30)	20.55
C. Revenue /tax		12 (0.09)	12 (0.10)	0.00
D. Interest on Fixed capital		65.33 (0.47)	68.69 (0.60)	-4.89.
Total Fixed Cost		13889.83 (100)	11539.02 (100)	20.37
Managerial Cost		2152.64	2047.48	5.14
Cost of Cultivation(Cost C3)		23679.04	22522.25	5.14

Figures in Parenthesis show the percentage to respective total * Treated seed was supplied to beneficiaries

20%) farm than an average non-beneficiary HH farm (16 & 16%). The managerial cost was found to be identical in case of an average beneficiary (9%) and non- beneficiary HH farm (9%) in cultivation of chilli (Fig. 3.11 & 3.12).

3.6.3.2 Profitability of Chilli

The cost of production to produce a quintal of chilli was also found to be 26.27 & 9.29 per cent less at total variable cost and total cost of cultivation of Chilli on an average beneficiary's HH farm as compared to non-beneficiary's HHs farm, while net income received from production of Chilli was found to be 25.79 & 28.05 per cent more at variable cost

Table 3.11 : Profitability in cultivation of Chilli(Rs./Acre)

Particulars		Beneficiaries	Non-Beneficiaries	% Change over Non- Beneficiaries
Yield (q/acre)		25.50	22	15.91
Rate/quintal (Rs.)		3250	3125	4.00
Gross Return(Rs./acre)		82875.00	68750.00	20.55
Net Income	Over Variable Cost	75238.43	59814.25	25.79
	Over Total Cost	59195.96	46227.75	28.05
Cost of production (Rs/q)	Over Variable Cost	299.47	406.17	-26.27
	Over Total Cost	928.59	1023.74	-9.29
Return/Rs. investment	Over Variable Cost	10.85	7.69	41.05
	Over Total Cost	3.50	3.05	14.66

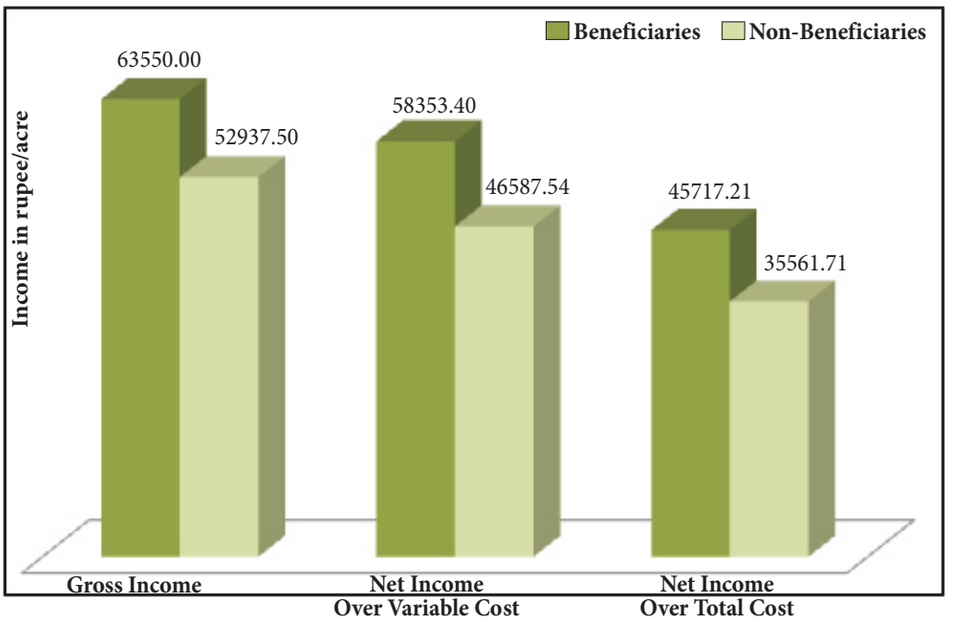

Fig. 3.13 : Income received from cultivation of chilli in beneficiaries & non-beneficiaries farms

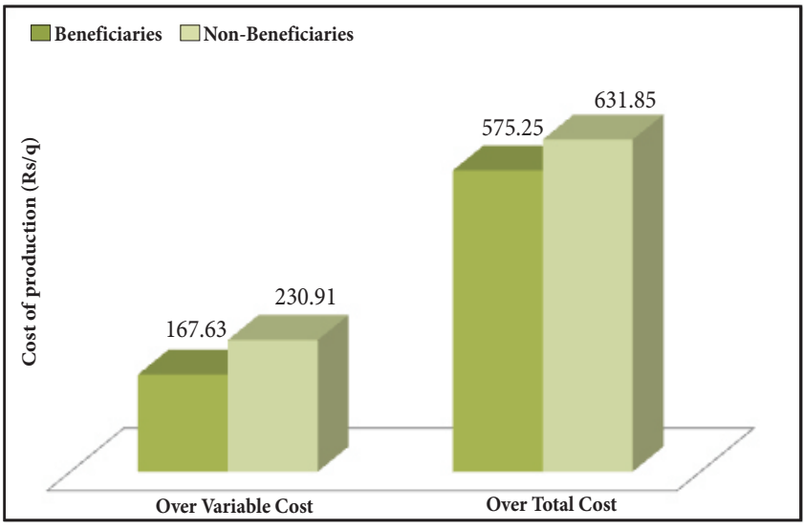

Fig. 3.14 : Cost of production of chilli in beneficiaries & non-beneficiaries farms

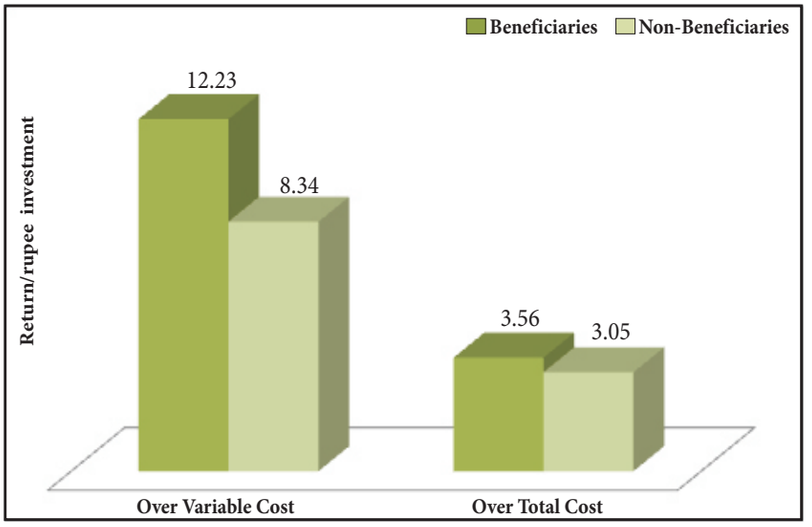

Fig. 3.15 : Return/rupee investment of chilli in beneficiaries & non- beneficiaries farms

and total cost of cultivation respectively, resulted in increase of return per rupee investment by 41.05 & Rs. 14.66 per cent more at total variable cost ant total cost of cultivation, on an average beneficiary's as compared to non-beneficiary's HHs farm respectively (Table 3.11).

3.6.4 Cowpea

Cowpea (Barbati) was found to be an other major vegetable grown by sample respondents both in kharif season .

3.6.4.1 Cost of Cultivation of Cowpea (Barbati)

The cost of cultivation of cowpea for beneficiary and non beneficiary HHs presented in table 3.12. It is observed from the data that an average total cost in cultivation of cowpea/barbati under beneficiary HH (Rs.17013.96/acre) was found to be 3.83 per cent greater than an average non beneficiary

Table 3.12 : Cost of cultivation of Cowpea (Barbati) (Rs/Acre)

Particulars		Beneficiaries	Non- Beneficiaries	% Change over Non- Beneficiaries
Operational Cost				
A. Human labour-	Family	1645.66 (46.58)	1780.00 (47.42)	-7.55
	Hired	945.6 (26.76)	1045.3 (27.85)	-9.54
B. Machinery Power		166.33 (4.71)	213.45 (5.69)	-22.08
C. Bullock labour		775.60 (21.95)	928.50 (24.73)	-16.47
Total Operational Cost		3533.19 (100)	3753.80 (100)	-5.88
Material Cost				
A. Seed		354.21 (12.18)	450.11 (11.91)	-21.31
B. Seed Treatment		0* (0.00)	20.2 (0.53)	-100.00
C. Manure & Fertilizers		1650 (56.73)	2356.2 (62.36)	-29.97
D. Insecticide		378.2 (13.00)	422.56 (11.18)	-10.5
E. Irrigation		458.04 (15.75)	458.04 (12.12)	-0.00
F. Depreciation		68.03 (2.34)	71.42 (1.89)	-4.75
Total Material cost		2908.48 (100)	3778.53 (100)	-23.03
Total Variable cost		6441.67	7532.33	-14.48
Fixed Cost				
A. Rental Value of own land		8533.33 (94.55)	6662.51 (90.47)	28.08
B. Revenue /tax		12 (0.13)	12 (0.16)	0.00
C. Interest on Fixed capital		480.23 (5.32)	690.22 (9.37)	-30.42
Total Fixed Cost		9025.56 (100)	7364.72 (100)	22.55
Managerial Cost		1546.72	1489.71	3.83
Total Cost of Cultivation		17013.96	16386.76	3.83

Figures in Parenthesis show the percentage to respective total * Treated seed was supplied to Beneficiaries

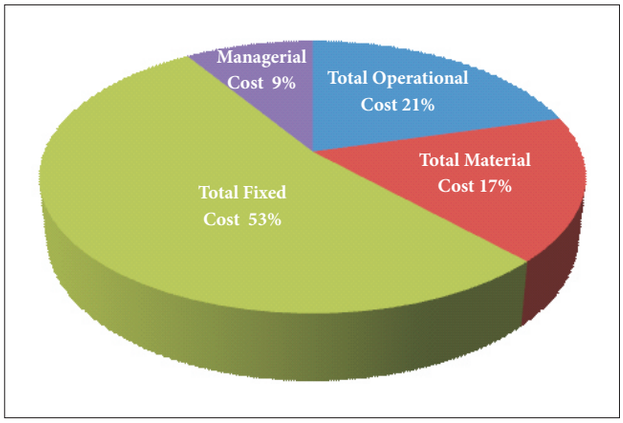

Fig. 3. 16: Contribution of different cost in cost of cultivation of cowpea (barbati) (Beneficiaries)

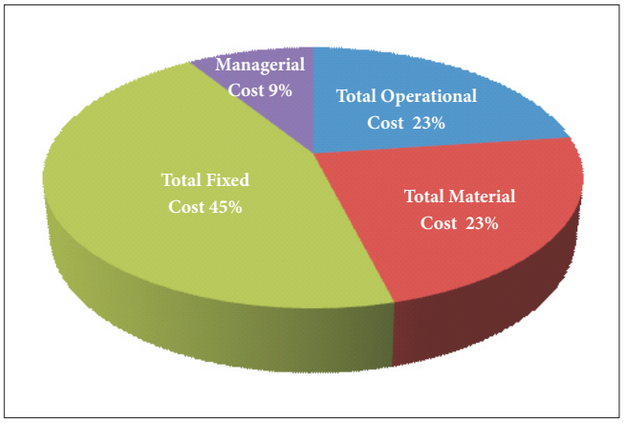

Fig. 3. 17: Contribution of different cost in cost of cultivation of cowpea (barbati) (non-Beneficiaries)

HH (Rs. 16386.76). An average beneficiary HH found to less seed treatment (100.00%), manures & fertilizer (29.97%), machinery power (22.08%), seed (21.31%), bullock labour (16.47%), insecticide (10.50%), hired human labour (9.54%), family human labour (7.55%), depreciation (4.75%) as compared to non-beneficiary HH.

The indirect cost (fixed cost) was found 22.55 per cent higher in case of an average beneficiary HH (Rs. 9025.56/acre) as compared to an average non-beneficiary HH (Rs. 7364.72/acre). In total cost of cultivation of cowpea the share of total fixed cost was found to be 8 per cent higher on an average beneficiary HH farm (53%) than non-beneficiary HH farm (45%), while share of total operational cost and total material cost in total cost of cultivation were found to be 2 & 6 per cent less on an average beneficiary HH (21 & 17%) farm than an average non-beneficiary HH farm (23 & 23%). The managerial cost was found to be

Table 3.13 : Profitability in cultivation of Cowpea (Barbati) (Rs./Acre)

Particulars		Beneficiaries	Non-Beneficiaries	% Change over Non- Beneficiaries
Yield (q/acre)		16	13	23.08
Rate/quintal (Rs.)		3200	3075	4.07
Gross Return(Rs./acre)		51200	39975.00	28.08
Net Income	Over Variable Cost	44758.33	32442.67	37.96
	Over Total Cost	34186.04	23588.24	44.93
Cost of production (Rs/q)	Over Variable Cost	402.60	579.41	-30.51
	Over Total Cost	1063.37	1260.52	-15.64
Return/Rs. investment	Over Variable Cost	7.95	5.31	49.77
	Over Total Cost	3.01	2.44	23.36

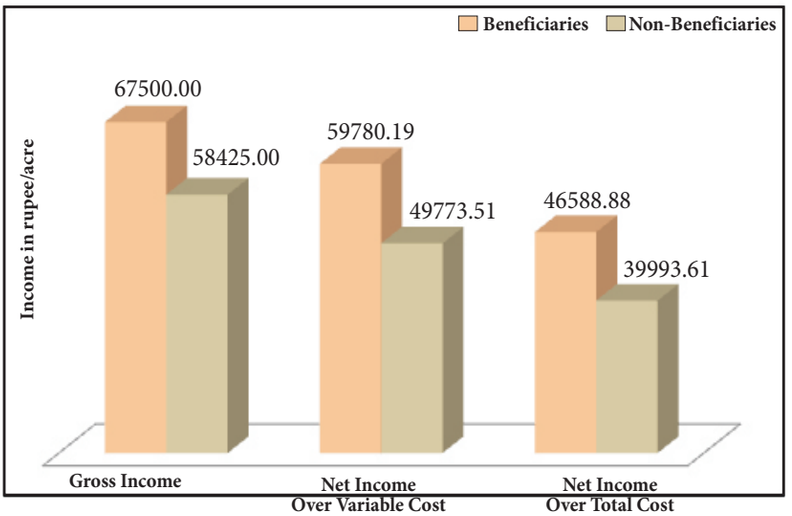

Fig. 3.18 : Income received from cultivation of cowpea (barbati) in beneficiaries & non-beneficiaries farms

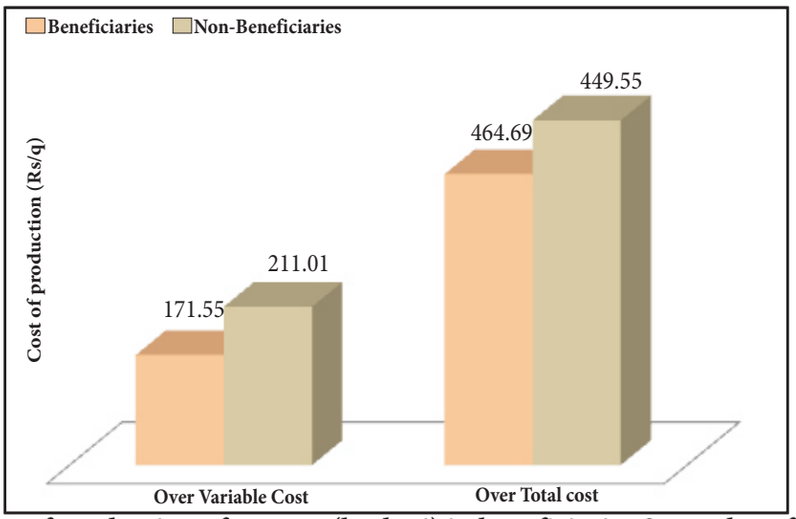

Fig. 3.19 : Cost of production of cowpea (barbati) in beneficiaries & non-beneficiaries farms

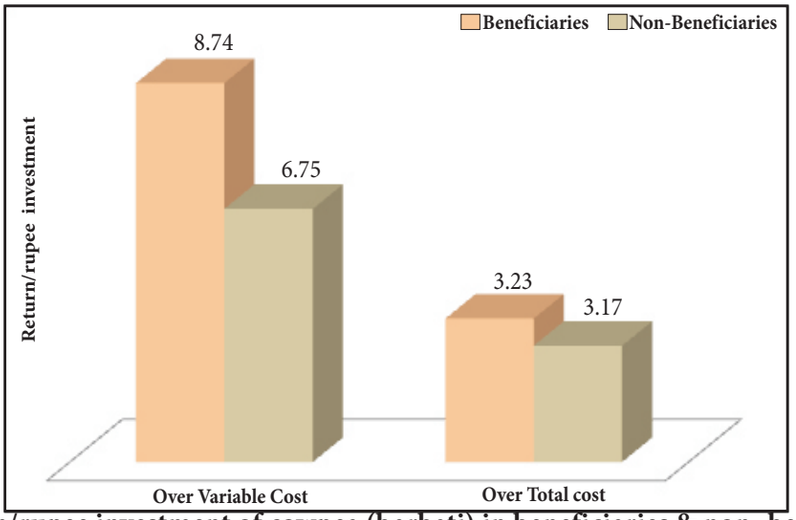

Fig. 3.20 : Return/rupee investment of cowpea (barbati) in beneficiaries & non- beneficiaries farms

identical in case of an average beneficiary (9%) and non- beneficiary HH farm (9%) in cultivation of tomato (Fig. 3.16 & 3.17).

3.6.4.2 Profitability of Cowpea (Barbati)

The cost of production to produce a quintal of cowpea was found to be -30.51 & -15.64 per cent less at total variable cost and total cost of cultivation of cowpea on an average beneficiary's as compared to non- beneficiary's HHs farm, while net income received from production of cowpea was found to be 37.96 & 44.93 per cent more at total variable cost and total cost of cultivation respectively, resulted in increase of return per rupee investment by 49.77 & 23.36 per cent more at total variable cost and total cost of cultivation, on an average beneficiary's as compared to non- beneficiary's HH farm respectively (Table 3.13).

3.6.5 Leafy Vegetables

Leafy vegetables viz. palak, medhi, lalbhaji etc. were also found to be grown by sample respondents both in kharif and rabi season.

3.6.5.1 Cost of Cultivation of Leafy Vegetables

The cost of cultivation of leafy vegetables for an average beneficiary and non beneficiary HH presented in table 3.14. It is observed from the data that an average total cost in cultivation of leafy vegetables under beneficiary HH farm (Rs.17832.79/acre) was found to be 2.63 per cent greater than an average non-beneficiary HH farm (Rs. 17375.79). An average beneficiary HH found to invested less on seed treatment material (100.00%), insecticide (45.13%), manures & fertilizer (37.05%), seed (32.22%), bullock labour (23.96%), irrigation (20.88%), hired human labour (12.93%), machinery power (11.56%), while expenses more expenditure one family human labour (6.81%) in cultivation of leafy vegetables as compared to non-beneficiary HH.

The indirect cost (fixed cost) was found 16.61 per cent higher in case of an average beneficiary HH (Rs.11015.03/acre) as

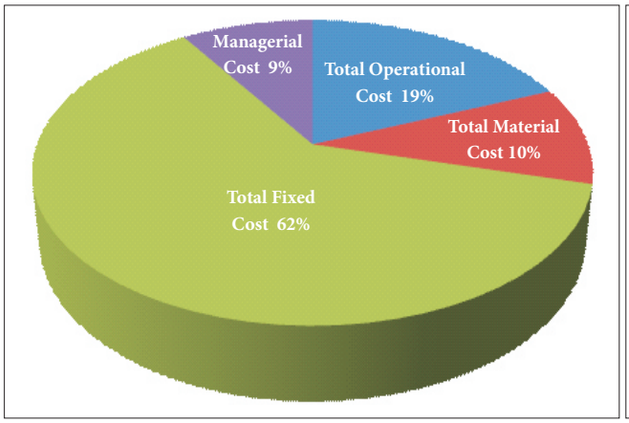

Fig. 3. 21: Contribution of different cost in cost of cultivation of leafy vegetables (Beneficiaries)

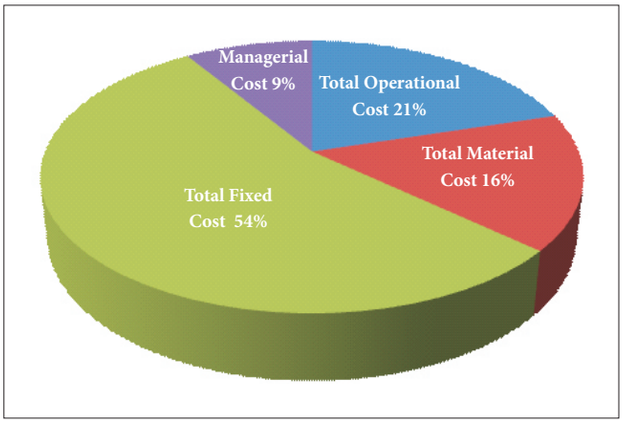

Fig. 3. 22: Contribution of different cost in cost of cultivation of leafy vegetables (non-Beneficiaries)

Table 3.14 : Cost of cultivation of Leafy Vegetables (Rs/Acre)

Particulars		Beneficiaries	Non- Beneficiaries	% Change over Non- Beneficiaries
Operational Cost				
A. Human labour-	Family	1880.20 (56.35)	1760.30 (49.69)	6.81
	Hired	654.88 (19.63)	752.18 (21.23)	-12.93
B. Machinery Power		130 (3.90)	147 (4.15)	-11.56
C. Bullock labour		671.40 (20.12)	882.92 (24.92)	-23.96
Total Operational Cost		3336.48 (100)	3542.34 (100)	-5.81
Material Cost				
A. Seed		645.3 (34.69)	952.11 (33.91)	-32.22
B. Seed Treatment		0* (0.00)	20 (0.71)	-100.00
C. Manure & Fertilizers		560.3 (30.12)	890.11 (31.70)	-37.05
D. Insecticide		230.80 (12.41)	420.66 (14.98)	-45.13
E. Irrigation		360.22 (19.37)	455.3 (16.22)	-20.88
F. Depreciation		63.5 (3.41)	69.44 (2.47)	-8.55
Total Material cost		1860.12 (100)	2807.62 (100)	-33.75
Total Variable cost		5196.60	6349.96	-18.16
Fixed Cost				
A. Rental Value of own land		10591.67 (96.16)	8822.917 (93.40)	20.05
B. Revenue /tax		12 (0.11)	12 (0.13)	0.00
C. Interest on Fixed capital		411.36 (3.73)	611.3 (6.47)	-32.71
Total Fixed Cost		11015.03 (100)	9446.22 (100)	16.61
Managerial Cost		1621.16	1579.62	2.63
Total Cost of Cultivation		17832.79	17375.73	2.63

Figures in Parenthesis show the percentage to respective total Treated seed was supplied to Beneficiaries

compared to an average non-beneficiary HH (Rs. 9446.22/acre). In total cost of cultivation of leafy vegetable the share of total fixed cost was found to be 8 per cent higher on an average beneficiary HH farm (62%) than non-beneficiary HH farm (54%), while share of total operational cost and total material cost in total cost of cultivation were found to be 2 & 6 per cent less on an average beneficiary HH (19 & 10%) farm than an average non-beneficiary HH

Table 3. 15: Profitability in cultivation of Leafy Vegetables (Rs./Acre)

Particulars		Beneficiaries	Non-Beneficiaries	% Change over Non- Beneficiaries
Yield (q/acre)		31	27.5	12.73
Rate/quintal (Rs.)		2050	1925	6.49
Gross Return(Rs./acre)		63550	52937.50	20.05
Net Income	Over Variable Cost	58353.40	46587.54	25.26
	Over Total Cost	45717.21	35561.71	28.56
Cost of production (Rs/q)	Over Variable Cost	167.63	230.91	-27.40
	Over Total Cost	575.25	631.85	-8.96
Return/Rs. investment	Over Variable Cost	12.23	8.34	46.69
	Over Total Cost	3.56	3.05	16.97

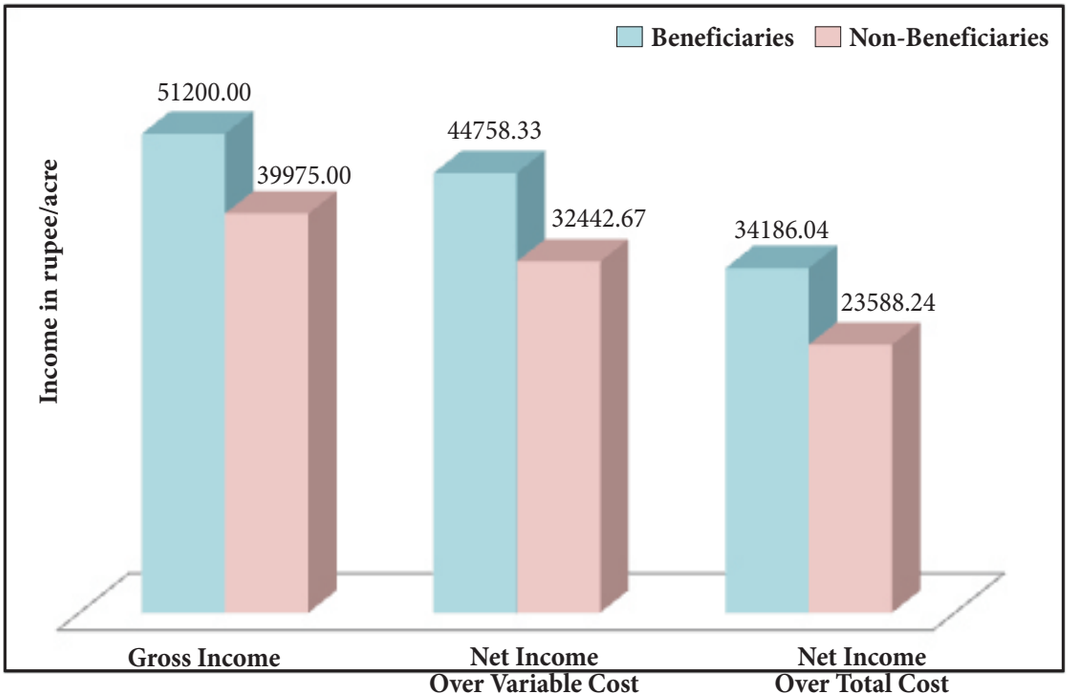

Fig. 3.23 : Income received from cultivation of leafy vegetables in beneficiaries & non-beneficiaries farms

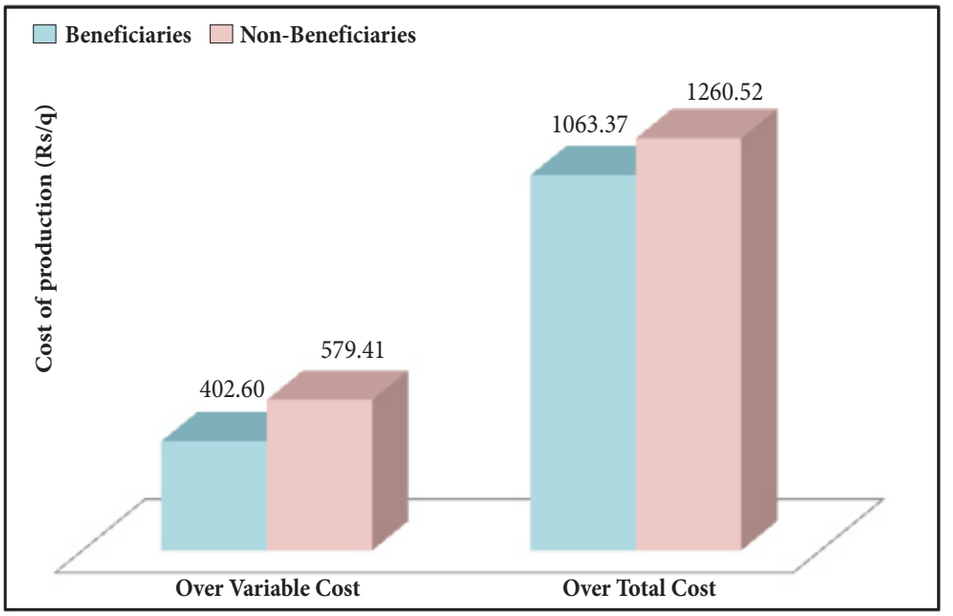

Fig. 3.24 : Cost of production of leafy vegetables in beneficiaries & non-beneficiaries farms

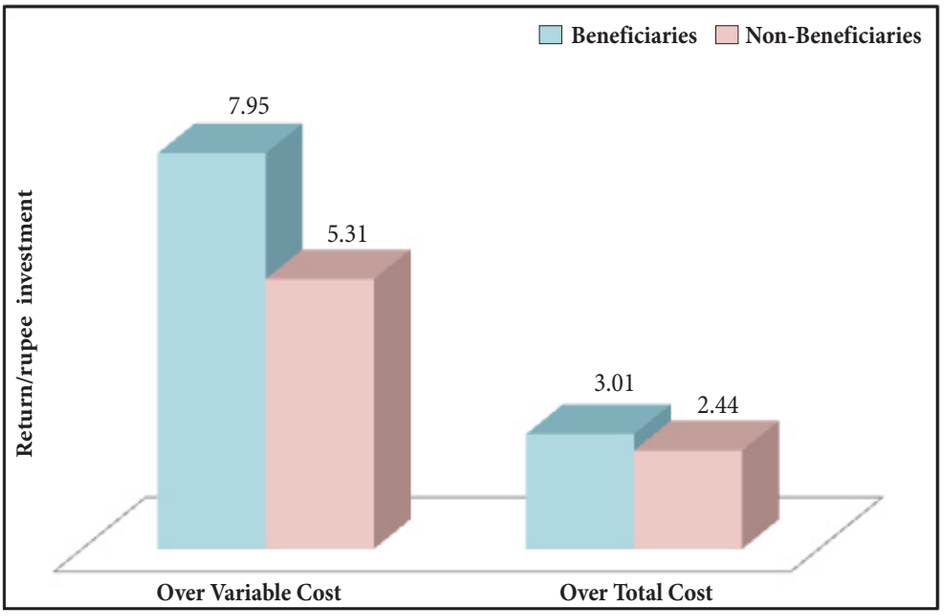

Fig. 3.25 : Return/rupee investment of leafy vegetables in beneficiaries & non- beneficiaries farms

farm (21 & 16%). The managerial cost was found to be identical in case of an average beneficiary (9%) and non- beneficiary HH farm (9%) in cultivation of tomato (Fig. 3.21 & 3.22).

3.6.5.2 Profitability of Leafy Vegetables

The cost of production to produce a quintal of was also found to be 27.40 & 8.96 per cent less at variable cost and total cost of cultivation of Leafy vegetables on an average beneficiary's farm as compared to non-beneficiary's HH farm, while net income received from production of cowpea was found

to be 25.26 & 28.56 per cent more at variable cost and total cost of cultivation respectively, resulted in increase of return per rupee investment by 16.97 & Rs.46.69 per cent more at variable cost and total cost of cultivation, on an average beneficiary's as compared to non-beneficiary's HH farms respectively (Table 3.15).

3.6.6 Vegetables

An attempt is also made to analyze the economics of all the vegetables grown by an average beneficiary and non beneficiary HH to understand the overall picture of production of vegetables in the area under study.

3.6.6.1 Cost of Cultivation of Vegetables

The cost of cultivation of all the vegetables grown by an average beneficiary and non-beneficiary HH presented in table 3.16. It is observed from the data that an average total cost incurred in cultivation of all vegetables under beneficiary HH (Rs.11529.70/acre) was found to be 18.81 per cent greater than an average non beneficiary HH (Rs. 9704.40). An average beneficiary HH found to expense less expenditure on seed treatment (100%), insecticide (22.34%) hired human labour (18.04%), seed (16.46%), manures & fertilizer (15.46%), machinery power (13.36%), bullock labour (12.67%), irrigation (7.12%) and family human labour (6.91%) in cultivation of vegetables as compared to an average non beneficiary HH.

The indirect cost (fixed cost) was found 18.81 per cent higher in case of an average beneficiary HH (Rs.10481.54/acre) as compared to an average non-beneficiary HH (Rs. 8822.17/acre). In total cost of cultivation of overall vegetable the share of total fixed cost was found to be 6 per cent higher on an average beneficiary HH farm (56%) than non-beneficiary HH farm (50%), while share of total operational cost and total material cost in total cost of cultivation were found to be 3 & 4 per cent less on an average beneficiary HH (21 &

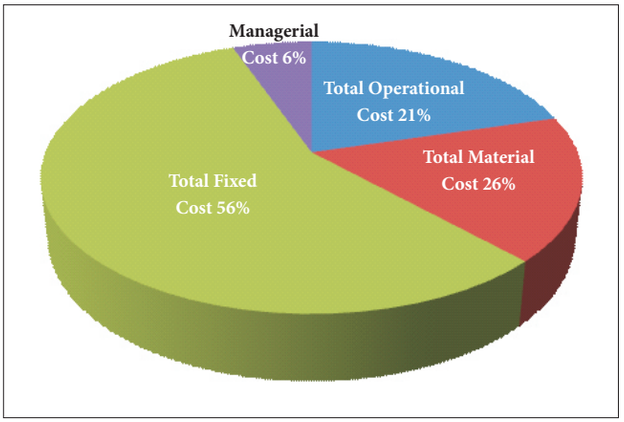

Fig. 3. 26: Contribution of different cost in cost of cultivation of vegetables (Beneficiaries)

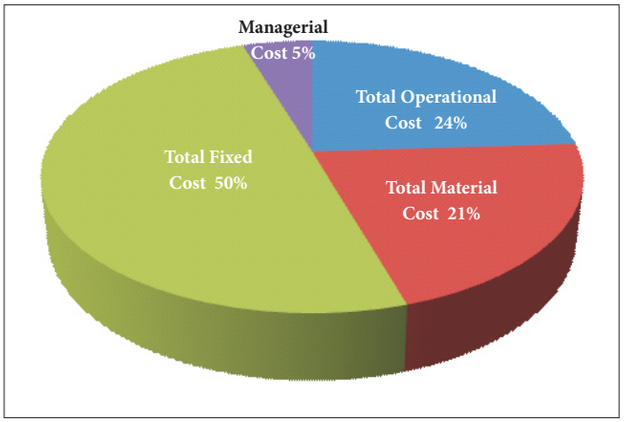

Fig. 3. 27: Contribution of different cost in cost of cultivation of vegetables (non-Beneficiaries)

Table 3.16 : Cost of cultivation of Vegetables (Rs/Acre)

Particulars	Beneficiaries	Non- Beneficiaries	% Change over Non- Beneficiaries
Operational Cost			
A. Human labour- Family	1771.17 (46.35)	1902.68 (44.56)	-6.91
Hired	826.69 (21.64)	1008.64 (23.62)	-18.04
B. Machinery Power	120.97 (3.17)	139.63 (3.27)	-13.36
C. Bullock labour	1102.2 (28.85)	1262.072 (29.55)	-12.67
Total Operational Cost	3821.034 (100)	4270.334 (100)	-10.52
Material Cost			
A. Seed	484.902 (15.26)	580.444 (15.44)	-16.46
B. Seed Treatment	0* (0.00)	20.04 (0.53)	-100.00
C. Manure & Fertilizers	1822.66 (57.35)	2156.062 (57.35)	15.46
D. Insecticide	315.04 (9.91)	405.644 (10.79)	22.34
E. Irrigation	488.292 (15.36)	525.708 (13.98)	-7.12
F. Depreciation	67.198 (2.11)	71.272 (1.90)	-5.72
Total Material cost	3178.92 (100)	3759.17 (100)	-15.46
Total Variable cost	6999.13	8029.50	-12.83
Fixed Cost			
A. Rental Value of own land	10267.50 (97.96)	8524.25 (96.62)	20.45
B. Revenue /tax	12 (0.11)	12 (0.14)	0.00
C. Interest on Fixed capital	202.044 (1.93)	285.922 (3.24)	-29.34
Total Fixed Cost	10481.54 (100)	8822.17 (100)	18.81
Managerial Cost	1748.07	1685.17	3.73
Total Cost of Cultivation	19228.74	18536.84	3.73

Figures in Parenthesis show the percentage to respective total *Treated seed was supplied to Beneficiaries

17%) farm than an average non-beneficiary HH farm (24 & 21%). The managerial cost was found to be identical in case of an average beneficiary (9%) and non- beneficiary HH farm (9%) in cultivation of tomato (Fig. 3.26 & 3.27).

3.6.6.2 Profitability of Vegetables

The cost of production to produce a quintal of vegetables was also found to be 26.44 & 11.54 per cent less at variable cost and total cost of cultivation of all the vegetables on an

Table 3.17 : Profitability in cultivation of Vegetables (Rs./Acre)

Particulars		Beneficiaries	Non-Beneficiaries	% Change over Non- Beneficiaries
Yield (q/acre)		33.90	29.50	14.92
Rate/quintal (Rs.)		21.65	2070.00	4.49
Gross Return(Rs./acre)		61605.00	51145.50	20.45
Net Income	Over Variable Cost	54605.87	43116.00	26.65
	Over Total Cost	41460.01	36663.56	13.08
Cost of production (Rs/q)	Over Variable Cost	239.03	324.95	-26.44
	Over Total Cost	691.00	781.12	-11.54
Return/Rs. investment	Over Variable Cost	9.03	6.44	40.18
	Over Total Cost	3.06	2.61	17.28

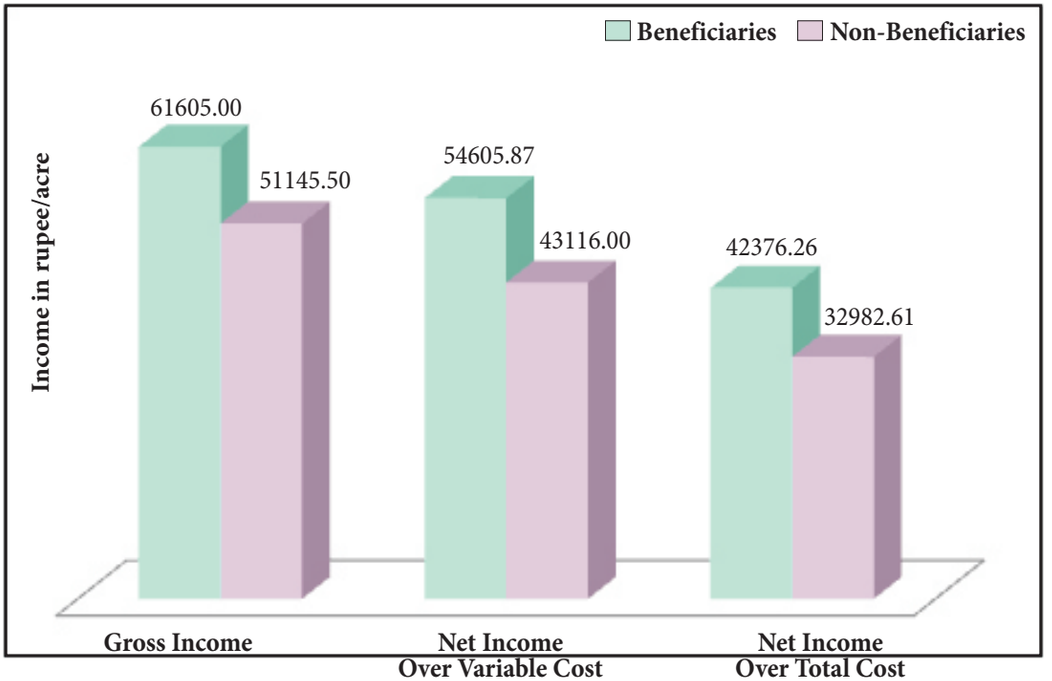

Fig. 3.28 : Income received from cultivation of vegetables in beneficiaries & non-beneficiaries farms

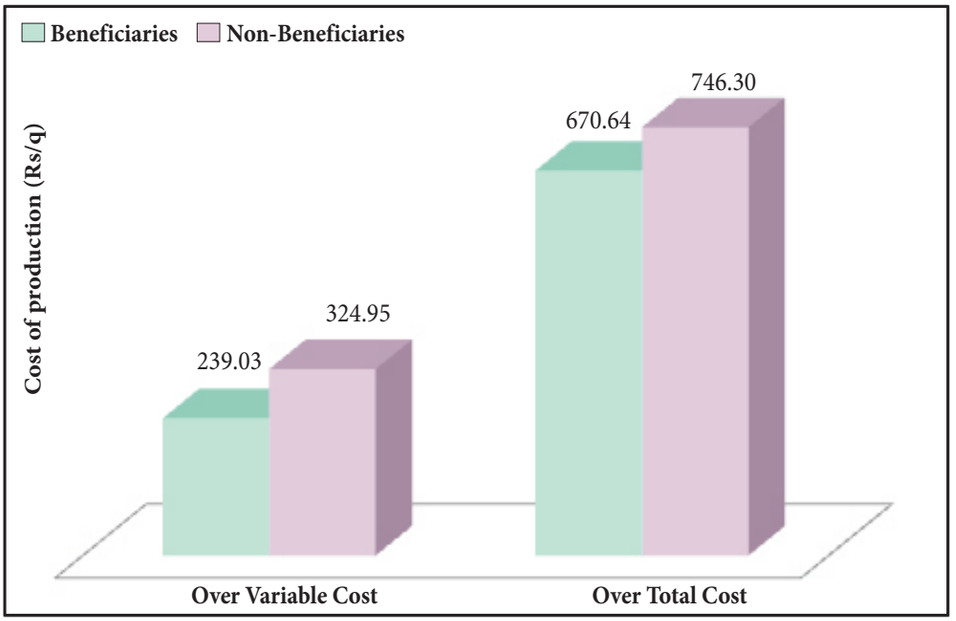

Fig. 3.29 : Cost of production of vegetables in beneficiaries & non-beneficiaries farms

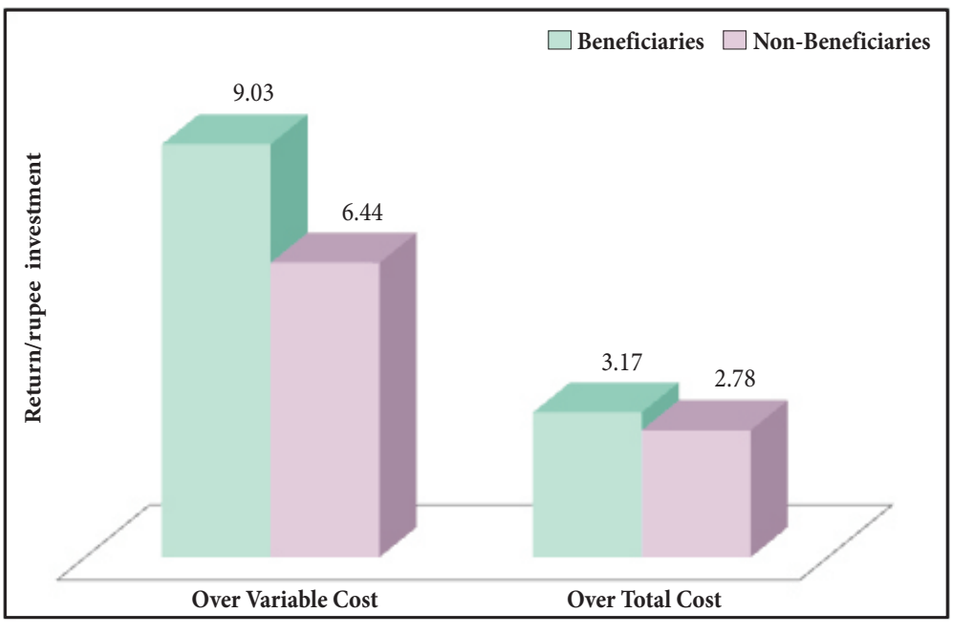

Fig. 3.30 : Return/rupee investment of vegetables in beneficiaries & non- beneficiaries farms

average beneficiary's as compared to non-beneficiary's HH farm, while net income received from production of vegetables was found to be 26.65 & 13.08 per cent more at variable cost and total cost of cultivation respectively, resulted in increase of return per rupee investment by 40.18 & 17.28 per cent more at variable cost and total cost of cultivation, on an average beneficiary's as compared to non- beneficiary's HH farm respectively (Table 3.17).

Hence, it can be concluded that the cost of cultivation of Tomato, Brinjan, Chilli, Cowpea, Leafy vegetable and at overall level in case of an average beneficiary and non-beneficiar farm shows that the share of total fixed cost is higher as compared to material cost and operational cost, while managerial cost was found to be identical. The fixed cost was found to be higher in case of beneficiaries over non-beneficiaries because of the increase in gross income of the beneficiaries which is used to calculate the rental value of owned land (1/6 of gross income). The operational cost and material cost was found to be less due to optimization of resource use for cultivation of vegetables by the beneficiary as compared to non-beneficiaries farms. At overall level, expenditure on family labour is higher as compared to hired human labour (18.04%)) and the total operational cost per acre is low (10.52%) on beneficiary's HH farm as compared to non- beneficiary's HH farm. (This reflects that due to awareness, efficiency of human and bullock labour increases which lead to lower down the cost of operation). In case of material cost it is less in case of beneficiary's HH farm as compared to non beneficiary's HH farm mainly due to adoption of recommended doses of Seed (16.46%), manures & fertilizers (15.46%) and insecticide (22.34%).

Thus, it can be concluded that the adoption of technology of cost of cultivation on beneficiary's HHsfarm is higher by 3.73 per cent as compared to non- beneficiary's HH farm at overall level of vegetable cultivation which reflects in increase in productivity (14.92%) as well as net income (13.08%) and return per rupee investment (17.28%) with reduction of cost of production (11.54%) in case of beneficiaries as compared to non-beneficiaries.

3.7 Impact of Activity on Living Status of Members

The overall impact of activity over standard of living was found to be positive on beneficiaries life as the majority of beneficiaries reported that their decision making capacity (65.71%), level of self assessment (53.33%) and level of living status (44.76%) is very much improved and educational standard of children (64.76%), participation in social activities (50.48%), health status (45.71%) and maintenance of animal (44.76%) have also been improved after taking of this activity by the beneficiaries (Table 3.18). The majority of them also reported that the freedom from capitalist (84.76%) has been very much improved and earning income capacity (60.00%), saving capacity (53.33%), improvement in saving (50.48%), control on financial expenditure (43.81%) have been improved.

The ownership and morden instruments was also judged and found that their ability to adopt morden technology in farming (53.33%) has been very much improved and purchasing power to purchase

Table 3.18 : Impact of SHGs activity on living status of beneficiaries (%)

S. No.	Particulars	Neutral	Improved Improved	Very much
Overall Benefit				
1	Level of Self Assessment	12.38	34.29	53.33
2	Level of Living Status	16.19	39.05	44.76
3	Education of Children	23.81	64.76	11.43
4	Social Activities18.10	50.48	31.43	
5	Health Status 37.14	45.71	17.14	
6	Decision Making Capacity	12.38	21.90	65.71
7	Maintenance of Animal	39.05	44.76	16.19
Saving Habits				
1	Improvement in Saving	10.48	50.48	39.05
2	Saving Capacity 9.52	53.33	37.14	
3	Control on financial Expenditure	30.48	43.81	25.71
4	Earning Income Capacity	15.24	60.00	24.76
5	Freedom from Capitalist	1.90	13.33	84.76
Assets Ownership and Modern Instruments				
1	Purchase of Land	75.24	14.29	10.48
2	Purchase of Animal	65.71	21.90	12.38
3	Adoption of Technology in Farming	12.38	34.29	53.33
4	Ability of technology utilize in Capital Services	44.76	32.38	22.86
5	Purchase of T.V., Mobile & Motorcycle etc)	7.62	50.48	41.9

HH assets viz. TV, mobile and motor cycle (50.48%) has been improved after taking-up the activity of vegetable production. But majority of them also reported that there were no improvement in purchase of new land (75.24%), animal (65.71%) and ability of technology utilize in Capital Services (44.76%).

3.8 Constraints Related to Vegetables Cultivation

The constraints which were identified by the respondents for effective cultivation of vegetables in the area under study are presented in table 3.19.

Table 3. 19: Constraints related to Vegetables cultivation (%)

S. No.	Technological Constraints	Percentage
1.	Lack of transport and storage facilities	92
2.	Lack of irrigation facilities	80
3.	Distant market	78
4.	Scattered and small size land holding	72
5.	Lack of awareness regarding fungicide application	70
6.	Lack of improved vegetables processing technology at village level	64
7.	Higher cost of hybrid seeds	62
8.	Lack of knowledge of IPM technologies	60
9.	Lack of knowledge about nursery management	42
10.	Lack of supervision by extension personal	40
11.	Lack of extension services	25

The major constraints in effective cultivation of vegetables as reported by majority of respondents were found to be lack of transport and storage facilities (92%), lack of awareness about fungicide application (70%), lack of irrigation facilities (80%), distant market (78%), scattered and small size land holding (72%), improved vegetables processing technology at village level (62%), high cost of hybrid seeds of vegetables (62%), lack of knowledge of IPM technologies (60%), lack of knowledge about proper nursery management (42%) and lack of supervision by extension personal (40%)

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CHAPTER-IV

CONCLUSIONS AND POLICY RECOMMMONDATION

This chapter deals with the conclusions and recommendations drawn from the results of the study

4.1 Conclusions:

The following conclusions are emerged from the study:-

- In case of non-beneficiaries 73.81 per cent were found to be engaged as agricultural labour and 26.19 per cent were self employed while in case of beneficiaries, it was found to be 62.48 and 37.52 per cent, respectively. The average income per member/year was found to be more than 13.15 per cent in case of beneficiaries (Rs.62800/-) as compared to non-beneficiaries (Rs. 55500/-), which shows that beneficiaries are comparatively in better position as compared to non-beneficiaries as far as their socio-economic condition is concerned.
- The beneficiary HHs were found to be more literate, more self capable and earning more income than non-beneficiary HHs while other things remain almost same in both the cases.
- An average beneficiary HH has only 1.02 and 15.40 per cent more farm and home assets respectively as compared to non-beneficiary HH indicating the well being of beneficiaries HH over non- beneficiaries.
- All the items of monthly expenditure an average beneficiary HH was found to spend 22.07 per cent more as compared to non-beneficiary HH. The maximum amount of monthly expenditure was found to be spend on food material 25.93 per cent followed by clothing and other expenditure in both the categories.
- The un-cultivated and fallow land was found to be low in case of beneficiaries as compared to non-beneficiaries farm resulted in higher percentage of cultivated land owned by beneficiary HH as compared to non- beneficiary HH. The irrigated area was found to be 9.09 per cent more in beneficiary farm as compared to non- beneficiary farm.
- Due to efficient training and demonstrations to beneficiary HHs and varietal adoption of major vegetables grown during Kharif season, an average beneficiaries HH used to allocate 225, 173, 170, 63, 25 and 17 per cent more area than the non-beneficiaries HH under Tomato, Leafy vegetables, Chilli, Cowpea, Bhindi and Brinjal, while in Rabi season the area under Leafy vegetables and Brinjal was found to be 139 and 27 per cent more in case of beneficiaries than non-beneficiaries HH, in tomato it was found to be 12.50

per cent less, which resulted in higher cropping intensity on beneficiaries farm (184%) as compared to non-beneficiaries farm (160%).

- The cost of cultivation of Tomato, Brinjan, Chilli, Cowpea, Leafy Vegetables and at overall level in case of an average beneficiary and non-beneficiar farm shows that the share of total fixed cost is higher as compared to material cost and operational cost, while managerial cost was found to be identical. The fixed cost was found to be higher in case of beneficiaries over non-beneficiaries because of the increase in gross income of the beneficiaries which is used to calculate the rental value of owned land (1/6 of gross income). The operational cost and material cost was found to be less due to optimization of resource use for cultivation of vegetables by the beneficiary as compared to non-beneficiaries farms. At overall level, expenditure on family labour is higher as compared to hired human labour (18.04%)) and the total operational cost per acre is low (10.52%) on beneficiary's HHs farms as compared to non- beneficiary's HHs farms. (This reflects that due to awareness, efficiency of human and bullock labour increases which lead to lower down the cost of operation). In case of material cost it is less in case of beneficiary's HHs farms as compared to non beneficiary's HHs farms mainly due to adoption of recommended doses of Seed (16.46%), manures & fertilizers (15.46%) and insecticide (22.34%).
- The adoption of technology of cost of cultivation on beneficiary's HHs farms is higher by 3.73 per cent as compared to non- beneficiary's HHs farms at overall level of vegetables cultivation which reflects in increase in productivity (14.92%) as well as net income (13.08%) and return per rupee investment (17.28%) with reduction of cost of production (11.54%) in case of beneficiaries as compared to non-beneficiaries.
- The overall impact of activity over standard of living was found to be positive on beneficiaries life as the majority of beneficiaries HHs reported that their decision making capacity (65.71%), level of self assessment (53.33%) and level of living status (44.76%) is very much improved and educational standard of children (64.76%), participation in social activities (50.48%), health status (45.71%) and maintenance of animal (44.76%) have been improved after taking of this activity by the beneficiaries (Table 3.18). The majority

of them also reported that the freedom from capitalist (84.76%) has been very much improved and earning income capacity (60.00%), saving capacity (53.33%), improvement in saving (50.48%), control on financial expenditure (43.81%) have been improved.

- The ownership and morden instruments was also judged and found that the majority of them reported that ability to adopt morden technology in farming (53.33%) has been very much improved and purchasing power to purchase HH assets viz. TV, mobile and motor cycle (50.48%) has been improved after taking-up the activity of vegetable production. But majority of them also reported that there were no improvement in purchase of new land (75.24%), animal (65.71%) and ability of technology utilize in Capital Services (44.76%).
- The major constraints in effective cultivation of vegetables as reported by majority of respondents were found to be lack of awareness about fungicide application (70%), require introduction of improved vegetables processing technology at village level (62%), lack of knowledge of IPM technologies (60%), scattered and small size land holding (72%), lack of knowledge about proper nursery management (42%), high cost of hybrid seeds of vegetables (62%), lack of supervision by extension personal (40%), unavailable of transport and storage facilities (92%) and distant market (78%)

4.2 Policy Recommendations:

The following policy implication can be drawn from the above conclusions:-

4.2.1 Creation of Storage Facility:

- Although vegetables production is found to be profitable in beneficiaries arms, but due to lack of storage they were found to be sold their products on non- remunerative prices. Hence, adequate storage facilities should be developed in the area under study.

4.2.2 Establishment of Processing Units:

- Establishment of vegetables processing units can improve the profitability of vegetable growers manifold by reducing the losses in picking, grading and packing etc. This will also solve the problem of packing material and transportation up to some extent. Research and extension efforts should be made to increase the range of products (from tomato sauce and Chlii pickle) that could be prepared from vegetables.

4.2.3 Market Awareness

- Arrangements should be made to provide latest information regarding prices and arrivals of the vegetables in the markets. The emphasis should be given to expand the market and develop infrastructure by improving packing and transportation facilities.

4.2.4 Cooperative Farming

- Collective vegetable farming through SHGs should be introduced to minimize per unit cost of production and higher income.

4.2.5 Formation of Vegetable Farmer Produce Organization (FPO)

- The cropping practices of vegetables production followed by beneficiaries' were found to be remarkable than that of non beneficiaries farmers. Hence, efforts should be made to integrate all efforts for linking farmers with backward and forward linkage by forming the vegetables production Farmer Produce Organization (FPO) to ensure profitability in a sustainable manner.

4.2.6 Technology Management

- The vegetable growers should be given proper training related to improved cultivation practices i.e., raising nursery and crops, system of irrigation viz. sprinkler and drip irrigation along with marketing techniques matching with most appropriate sowing and harvesting time to fetch remunerative prices.

4.2.7 Modern Vegetable Cultivation Practices

- The concept of off season production of vegetables in green/net houses should also be introduced amongst vegetable growers to fetch higher price. These green and net houses should be prepared using local materials like bamboo at the time of construction.

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APPENDIX

''मध्य प्रदेश में सब्जी उत्पादन के द्वारा ग्रामीण महिला सशक्तिकरण
पर तेजस्विनी महिला सशक्तिकरण कार्यक्रम का प्रभाव''

साक्षात्कार अनुसूची

साक्षात्कार दिनांक..... साक्षात्कार कर्त्ता का नाम.....

स्व सहायता समूह का नाम : .....

गाँव का नाम		तहसील	
जिला			

1. सामान्य जानकारी

1. प्रतिवादी का नाम	
2. पिता / पति का नाम	
3. मोबाइल न.	
4. उम्र (वर्ष में)	
5. शैक्षणिक योग्यता	अशिक्षित-1, प्राइमरी-2, हाईस्कूल-3, हायरसेकण्ड्री-4, स्नातक-5, स्नातकोत्तर-6
6. वर्ग (अ)	सामान्य-1, अ.पि.व.-2, अ.जाति-3. अनु.जनजाति-4
7. फार्म (अ)	हिन्दू-1, मुस्लिम-2, सिख-3, इसाई-4, जैन-5, अन्य-6
8. कृषक का व्यवसाय *	मुख्य :---------- सहायक :----------
9. परिवार के कुल सदस्यों की संख्या ----	पुरुष :------ महिला:----बच्चें (<16 वर्ष):-----
10. खेती में लगे परिवार के सदस्यों की संख्या	
11. कृषि कार्य का अनुभव (वर्षों में)	
12. वार्षिक आय (रु.)	कृषि एवं संबद्ध :---------- गैर-कृषि स्त्रोतों से आय :----------

* कोड: कृषि एवं संबद्ध-1, कृषि श्रम-2, स्व-घरेलू उद्योग में कार्यरत-3, स्व सेवाओं में कार्यरत -4, गैर-कृषि आकस्मिक श्रम-5, वेतन भोगी श्रम-6, घर का कार्य -7, पेंशनभोगी-8, अन्य -9 (विशिष्ठ)

2. फार्म मशीनरी (Farm Assets)

विवरण	संख्या	वर्तमान कीमत (रुपये में)	रखरखाव
ट्रेक्टर			
ट्राली			
कल्टीवेटर			
सीडड्रिल			
बखर			
त्रिफन			
हल			
बैल गाड़ी			
अन्य			

3. घरेलू उपभोगी वस्तुऐं (Home Assets) :

विवरण	मात्रा/संख्या	वर्तमान कीमत (रुपये में)	मासिक खर्च
टेलीविजन			
पंखा			
मोबाइल			
मोटर साइकिल			
साइकिल			
अन्य पदार्थ(यदि कोई)			

4. घरेलु मासिक खर्चे (Monthly Household Expenditure Patterns)

विवरण	कीमत (रुपये में)
खाद्य सामग्री (फल,सब्जी एवं दालों आदि सहित)	
कपडे	
शिक्षा (स्कूल फीस एवं पुस्तकों सहित)	
स्वास्थ्य खर्चे	
पशुपालन (चारा दाना एवं दवाओं सहित)	
सामाजिक कार्यक्रम	
अन्य कोई (विशिष्ट)	

5. भू- उपयोग पद्धति (Land use pattern)

विवरण	सिंचित	असिंचित	कुल	सिंचाई के स्त्रोत*	सिंचाई किराया रु./एकड़
स्वयं का रकबा					
कास्तकारी भूमि					
किराये पर ली गयी भूमि					
किराये पर दी गयी भूमि					
गैर कृषि योग्य भूमि स्थायी व अन्य चारागाह					
वर्तमान पडत भूमि					
पुरानी पड़त भूमि					
किराये पर ली गयी भूमि का किराया रू/ एकड़					
किराये पर दी गयी भूमि का किराया रू/ एकड़					

* कोड: कुआं -1, ट्यूब बेल -2, नहर-3, नदी-4, तालाब,अन्य (विशिष्ट)-5

6. फसल पद्धति (Cropping pattern)

मौसम	फसल / सब्जी	किस्म	रकबा (एकड़ में)	
			सिंचित	असिंचित
खरीफ				
रबी				
जायद				

7. सब्जी उत्पादन में आदान लागत

विवरण	फसल-1		फसल-2		फसल-3	
	मात्रा	दर (रु.)	मात्रा	दर (रु.)	मात्रा	दर (रु.)
बीज / पौध खरीद (कि.ग्रा.)						
बीज उपचार (ग्रा.)						
जैव उर्वरक/शहरी कम्पोस्ट/नीम की खली इत्यादि						
रासायनिक उर्वरक एवं अन्य सूक्ष्म तत्व (कि.ग्रा.)						
यूरिया						
डी.ए.पी.						
एस.एस.पी.						
पोटाश						
सूक्ष्म तत्व (जिंक/जिप्सम/बोरान/अन्य)						
सिंचाई (संख्या)						
कीटनाशक (मि.ग्रा.)						
खरपतवारनाशी (मि.ग्रा.)						
अन्य						

8. सब्जी उत्पादन में श्रम एवं मशीनरी लागत

विवरण	पुरुष श्रम		महिला श्रम		बक्खर		ट्रेक्टर	
	संख्या	लागत	संख्या	लागत	दिन	लागत	घंटे	लागत
फसल -1								
गोबर खाद (कु.)								
गहरी जुताई								
नर्सरी तैयार करना								
पौघ रोपण								
बीजोपचार								
उर्वरक छिडकाव								
पौध संरक्षण								
सिंचाई								
निंदाई								
कटाई / तुडाई								
परिवहन								
फाई/ग्रेडिंग/पैकिंग								
फसल -2								
गोबर खाद (कु.)								
गहरी जुताई								
नर्सरी तैयार करना								
पौघ रोपण								
बीजोपचार								
उर्वरक छिडकाव								
पौध संरक्षण								
सिंचाई								
निंदाई								
कटाई / तुडाई								
परिवहन								
फाई/ग्रेडिंग/पैकिंग								
फसल -3								
गोबर खाद (कु.)								
गहरी जुताई								
नर्सरी तैयार करना								
पौघ रोपण								
बीजोपचार								
उर्वरक छिडकाव								
पौध संरक्षण								
सिंचाई								
निंदाई								
कटाई / तुडाई								
परिवहन								
फाई/ग्रेडिंग/पैकिंग								

9. उत्पाद से आय

विवरण	मुख्य उत्पादन (कु.)		बेची गई मात्रा (कु.)		कीमत (रुपये / कु.)	
फसल –						
फसल –						
फसल –						
फसल –						
फसल –						

10. स्व-सहायता समूह का जीवन स्तर पर प्रभाव

(Impact of Self Help Group on Living Status)

विवरण		1	2	3	4	5
. स्वसहायता समूह का सम्पूर्ण प्रभाव (Over all benefit of SHGs)						
1	आत्म विश्वास का स्तर					
2	रहन–सहन का स्तर					
3	बच्चों कि शिक्षा					
4	सामाजिक गति विधियां					
5	स्वास्थ्य स्तर					
6	निर्णय लेने कि क्षमता					
7	पशुपालन का रखरखाव					
B. बचत आदतन (Saving Habit)						
1	बचत में सुधार					
2	बचत क्षमता					
3	वित्त/पूँजी/खर्चो पर नियंत्रण					
4	आय बढाने/कमाने की क्षमता					
5	पूँजी पतियों से स्वतंत्रता					
C-सम्पति स्वामित्त एवं आधुनिक साधन (Assets Ownership and Modern Instruments)						
1	भूमि खरीद					
2	पशु खरीद					
3	खेती में तकनीक के अंगीकरण में					
4	पूँजी सेवा में तकनीक के उपयोग की योग्यता					
5	मोबाइल, टी.वी., मोटर साइकिल की खरीद					

* code : 1= Not at all improved, 2= No improvement, 3=Neutral, 4= Improved, 5= Very much Improved

11. स्व-सहायता समूह से आपके जीवन में क्या परिवर्तन आया ।

1----------

2----------

3----------

4----------

5----------

12. सब्जी उत्पादन एवं तकनीक अंगीकरण में आने वाली समस्याएं ।

1----------

2----------

3----------

4----------

5----------

13. सब्जी उत्पादन से सम्बंधित सुझाव ।

1----------

2----------

3----------

4----------

5----------

14. सब्जी उत्पादन से संबंधित प्रशिक्षण की आवश्यकता ।

1----------

2----------

3----------

4----------

5----------

15. सब्जी उत्पादन की जानकारी का स्त्रोत -

1----------

2----------

3----------

16. सदस्य की टीप (यदि कोई) ।

1----------

2----------

3----------

4----------

5----------

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