

Women and Vegetable Cultivation: A Grass Root Level Impact Evaluation Study

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Abstract

From the very beginning of sowing to the harvesting women form the veritable backbone of subsistence agriculture. It is a real fact that a silent revolution is going on from the grass root level in every panchayath of Kerala against the poisonous vegetables. Most of the panchayaths in Kerala are adopting schemes in association with Krishi Bhavans to grow organic vegetables in their courtyard or in the terrace. An in depth impact analysis of the scheme titled 'veetuvallappil pachakari krishi' incorporated in the women component plan (WCP) of the Karakulam panchayath in the Thiruvananthapuram district is to examine in detail how far has changed the life of the beneficiaries carried out. It has also been tried to examine how far being a beneficiary of this scheme improved the standard of living of women and how far they are able to face challenges of their life confidently.

Keywords: Organic farming; Vegetable cultivation; WCP; Women Empowerment.

Introduction

It is a known fact vegetables grown on an organic basis are free from poisonous chemical fertilizers and pesticides which otherwise can lead to serious diseases like cancer. It is therefore a necessity that every local body, by realizing the significance of the organic cultivation and its impact on health should incorporate such schemes in the grass root level plans and extended to almost all households in rural and urban areas. If the government and local bodies give more specialized training to the beneficiaries it is so sure that our dependence on poisonous vegetables will dramatically decrease.

A detail examination of the scheme "veettu valappil pachakkari krishi" under the WCP program of Karakulam panchayath is examined below. Implemented through the krishi bhavan and to find the beneficiaries they first conduct the grama sabha and invited applications. The applications are verified by a monitoring committee

and finalise the beneficiary list. Then this list is forwarded to krishi officer. As a part of this, krishi bhavan give the beneficiaries grow bags (10 for one unit), seed packet (consists of *Amaranthus* (Arun), bhindi (Arka-Anamika), brinjal (Co-2), bittergourd (Preethi), chilly (Anugraha), cow pea (Vellayani Jyothika), organic manure (neem cake). From a total of 85 beneficiaries during the year 2013-14 nearly fifty percent (40 beneficiaries) were selected as the sample and a detailed interview schedule was administrated among them.

A detailed look on the cost side of the scheme and how it is implemented are given in detail. From table 1 the total number of units that undertake veetu valappil pachakkari krishi as well as the total plan fund allotment and beneficiary contribution is explained. There are about 1150 units is functioning in the panchayath which mean that 1150 households are doing vegetable cultivation, such a trend is welcoming in today's world because people are giving more importance to their family's health and take initiative to grow vegetables they required within their premises.

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Table 1: Plan fund allocation and Beneficiary contribution of the scheme

Sl No:	Item Heads	
1	Total no. of units	1150
2	Total plan fund allotted	Rs. 143750
3	Beneficiary contribution	Rs. 63250

Source: Records of Karakulam krishibhavan 2015

A detailed subdivision of the plan fund on different sub segment of the vegetable cultivation like purchasing of vegetable seed, *Pseudomonas* and organic manure are given in Table 2. In the case with vegetable seed hundred per cent is given on subsidy to the selected beneficiaries. In the case with *Pseudomonas* fifty per cent is given as subsidy and the balance amount should be contributed by the beneficiaries, and in the case with organic manure the subsidy is seventy five per cent and the balance has to be met out by the beneficiaries. Further per head contribution in the case with the above mentioned three items is explained in table 3.

A detailed picture of the types of seed contain in one seed packet is given in Table 4. From the above tables a detailed picture about the scheme can be gained. This project was implemented by the Panchayath with the help of certain agencies like Karakulam krishi bhavan, State biocontrol lab Mannuthy, Karakulam Service co-operative bank etc. The beneficiary contribution is mainly collected by service co-operative bank. For the confirmation of beneficiaries they make use of tax receipt (for confirmation of space available for cultivation), ration card (to prove the nativity), bank account etc. The main intention of the panchayath along with women empowerment is to make Karakulam a 'jaiva panchayath' soon. For that purpose they mainly promote bio fertilizers rather than chemical

ones for pachakkari krishi. After gaining the detailed picture of the scheme it is essential to look into the details of women beneficiaries and how far the scheme is effective in their lives. The beneficiaries pointed out that they mainly came to know about the programme from the side of ward members and krishi officer and such a motivational talk inspired them to undertake vegetable cultivation on a wider scale and became self reliant.

When a detailed interview was conducted with the women respondents, they revealed that the main intention for them to start such a vegetable cultivation is to provide fresh and good vegetables mainly organic not only to their family but also to the neighboring areas and save them from the poisonous vegetables coming from other states. Even those with a minimum of 5 cents can start this type of cultivation they are much free and can like their other work with pachakkari krishi in a more efficient manner. Along with other benefits gained out of this cultivation 58 per cent of the respondents point out that it is profitable too. They point out that the cultivation is not much difficult and easy and can be linked with their daily routine in a much effective manner. Similarly one important finding revealed that three fourth of the people adopt it as their own livelihood and support their family from the income earned from this scheme.

Table 2: Plan fund allocation and Beneficiary contribution on different particulars associated with the scheme

Sl. No:	Particulars	Subsidy (%)	Beneficiary contribution (Rs)	Plan fund (Rs)
1	Vegetable seed	100	0	11500
2	<i>Pseudomonas</i>	50	28750	28750
3	Organic manure	75	34500	103500

Source: Records of Karakulam krishibhavan 2015

Table 3: Items, subsidy and beneficiary contribution per unit

Sl No:	Items	Beneficiary contribution (Rs)	Plan fund (Subsidy Rs)	Total
1	Vegetable seed (1 pack)	0	10	10
2	<i>Pseudomonas</i> - 1 kg	25	25	50
3	Organic manure-5 kg (Neem cake)	30	90	120

Source: Records of Karakulam krishibhavan 2015

Table 4: Crop and its variety allocated per unit

Sl No:	Crop	Variety
1	Amaranthus	Arun
2	Bhindi	Arka-Anamika
3	Bittergourd	Preethi
4	Brinjal	Co-2
5	Chilly	Anugraha
6	Cow pea	Vellayani jyothika

Source: Records of Karakulam krishibhavan 2015

Table 5: Utilisation of earnings from vegetable cultivation

SI No:	Type of Utilisation	Always	Frequently	Never
1	To buy clothes	22.5	57.5	20
2	To buy food items	40	50	10
3	Savings	57.5	32.5	10
4	Education of children	100	0	0
5	Health matters	50	50	0
6	Gold purchase	5	72.5	22.5
7	Repair or construction of home	7.5	65	27.5
8	Purchase of household equipments	17.5	37.5	45
9	Joining insurance policy	10	47.5	42.5
10	Joining new chitties	40	45	15

Source: Sample survey (Figures given in the table are in percentages)

Table 6: Percentage distribution of respondent on the basis of ownership of land

Area of land	No: of beneficiaries	Percentage
5-5.99 cent	11	27.5
6-9.99 cent	4	10
10-19.99 cent	12	30.5
20 cent and above	13	32
Total	40	100

Source: Sample survey

Table 7: Percentage distribution of respondent on the basis of terrace cultivation and area of land ownership

Area of land	Respondents having terrace cultivation
5-5.99 cent	2
6-9.99 cent	1
10-19.99 cent	5
20 cent and above	9
Total	17

Source: Sample survey

Regarding the utilisation of earnings from vegetable cultivation a much detailed explanation is given in table 5. The survey revealed that prior from engaging in vegetable cultivation the involvement of women in the below explained areas in the economic sense is very little. Even in the case of purchasing the basic and essential things they don't have their own voice. But things changed as a result of their involvement in the vegetable cultivation. Majority revealed that since they are generating income in such a work associated with their household premises, they can easily manage their domestic chores. And also this type of cultivation doesn't require full time attention and they can divert their labour time to many activities both social and economic. Such a time management helps them to make a more productive use of their labour power. Utilisation results revealed that their interference in the activities of household has considerably increased and it is a good sign which

improves the status of women in the family and it surely leads to empowerment in its real sense. It supports an important saying that put forward by Mahatma Gandhi that the future of our nation depends on the work performed by women in our society. From the table the utilisation of profits are mainly used for the education of the children. Cent per cent of the sample women revealed that they always give importance towards the education of their children as well as more and more importance to the strong future by saving and investing the profit they earned.

Association between profit gained from the vegetable cultivation and area of land cultivated

One of the main conditions required by the panchayath for the selecting of the beneficiaries is that they should have at least 5 cents of land. A detailed examination of the beneficiaries is undertaken to

find about the land availability of the beneficiaries and whether there exists any association between areas of land cultivated as well as the profit. Along with this number of persons undertaking terrace farming is also considered. As terrace cultivation is becoming more and more prominent in Kerala economy those with minimum cents can start terrace farming and collect the needed vegetables for their livelihood. And the survey revealed that 17 out of the 40 samples are doing terrace farming and the number is highest with those who have 20 cents and above (Table 6 and 7).

Chi-Square test is applied to find out whether there exists any association between area of land cultivated and profit obtained from vegetable cultivation.

H_0 : There is no association between area of land cultivated and profit obtained from vegetable cultivation

H_1 : There is an association between area of land cultivated and profit obtained from vegetable cultivation

To test the above hypothesis we make use of chi-square test statistic. On calculating we get $\chi^2 = 42.766$ and from tables we get $\chi^2_{(42)}(0.05) = 28.14405$. Since (0.05) , we reject H_0 .

The test results revealed that there exist association between area of land cultivated and profit obtained from vegetable cultivation.

To test the effectiveness of the scheme 'veettu valappil pachackkari krishi:

Whether the scheme Veetuvallappil pachackkari krishi in the Karakulam Panchayath improved the status of women in the panchayath.

Test based on Monthly Income

H_0 : Monthly income of respondent before and after joining the scheme is not different.

H_1 : Monthly income of respondent was increased after joining the scheme.

To test H_0 we make use of t-statistic, which is given by

$$t = \frac{(\bar{u} - 0) \times \sqrt{(n-1)}}{S_u} \sim t_{(n-1)}$$

Where $u_i = x_i - y_i, i = 1, 2, \dots, n, \bar{u}$ is the mean and S_u is the standard deviation of differences. Test reject H_0 at $\alpha\%$ level of significance if $t > t_{\alpha}(n-1)$

and $t_{(n-1)}$ obtained from student's t-table for $(n-1)$ degrees of freedom. By analysing the data we obtain $\bar{u} = 1930, \sqrt{(n-1)} = 6.2449, S_u = 746.726$ and the t-statistic as $t = 16.140$

From table we get, $t_{(39)}(0.05) = 2.022691$. Since $t > t_{\alpha}$ we reject H_0 .

That is monthly income of respondent before and after joining the scheme is different, which shows the scheme is effective.

Test based on Monthly Expenditure

H_0 : Monthly expenditure of respondent before and after joining the scheme is not different.

H_1 : Monthly expenditure of respondent was increased after joining the scheme.

To test H_0 we make use of t-statistic and by analysing the data we obtain and the t-statistic as $t = 14.382$. From table we get, $t_{(39)}(0.05) = 2.022691$. Since $t > t_{\alpha}$ we reject H_0 .

That is monthly expenditure of respondent before and after joining the scheme is different, which shows the scheme is effective. That is monthly expenditure of respondent *was increased after joining the scheme*, which shows that working of this particular scheme *veetuvallappil pachackkari krishi* is effective. It is quite natural that gaining more income by being the beneficiary under this scheme, the expenditure of the family too increases. It is a good sign that the standard of living of the members improved as a result of such programmes of the Panchayath. A sub divisional analysis of the total monthly expenditure of the family into the food and non food expenditure is also carried out in the next section to gain a clear picture.

Test based on Food expenditure

H_0 : Food expenditure of respondent before and after joining the scheme is not different.

H_1 : Food expenditure of respondent was increased after joining the scheme.

To test H_0 we make use of t-statistic and by analysing the data we obtain the t-statistic as $t = 13.8539$. From table we get, $t_{(39)}(0.05) = 2.022691$. Since $t > t_{\alpha}$ we reject H_0 .

That is food expenditure of respondent *was increased after joining the scheme*, which shows the scheme is effective.

Test based on Non- Food expenditure

H_0 : Non-Food expenditure of respondent before and after joining the scheme is not different.

H_1 : Non-Food expenditure of respondent was increased after joining the scheme.

To test H_0 we make use of t-statistic.

By analysing the data we obtain the t-statistic as $t=13.209$.

From table we get, $t_{(39)}(0.05) = 2.022691$ and since $t > t_{\alpha}$ we reject H_0 .

That is Non- Food expenditure of respondent was increased after joining the scheme, which shows the scheme is effective.

Test based on Monthly savings

H_0 : Monthly savings of respondent before and after joining the scheme is not different.

H_1 : Monthly savings of respondent was increased after joining the scheme.

Not only the variables like income and expenditure used to find out the efficiency of this scheme in the life of the respondents but also the monthly savings of the members before and after entering the group is also a relevant factor. To test H_0 we make use of t-statistic. And by analysing the data we obtain the t-statistic as $t=9.3223$ and the calculated value is greater than the table value the null hypothesis is rejected. Monthly savings of respondent before and after joining the JLGs are different, which shows that working of this scheme by the LG is effective. From the entire paired t test explained above it is quite clear that the scheme *veetuvalappil pachakkari krishi* by the *Karakuklam panchayath* had lead to empowerment of women in its real sense.

Conclusion

The impact analysis study revealed that if the panchayath authorities incorporate schemes related to sustainable agriculture, it will do benefit to the

society in two different ways: one through better livelihood enhancement and another through better agricultural development. If the panchayat or other local bodies select the programs which are more close to the existing environment and living conditions, it will surely produce a significant influence upon the women folk in the particular area.

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