



# Women Empowerment through Additional Crop Cultivation – A Climate Resilient Practice of Namakkal District

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## ABSTRACT

National Innovations on Climate Resilient Agriculture (NICRA) was implemented in Vadavathur and Jambumadai villages of Namakkal district. Cultivation of sole cropping is predominant in the district leads to poor market returns due to huge arrival of single crop. To alleviate such problems additional crop cultivation in small area with other annual vegetables in an area to minimize market risk and ensure reasonable returns for small and marginal farm women. After the cropping season in many fields the excess water of bore and open wells during the normal year, which has not been effectively utilized for the cultivation of additional crops may enhance the farm women income during the summer season. KVK provided technical guidance for cultivation of annual vegetables as additional crop to the 350 women farmers and thus now vegetables are being cultivated in an area of 44.8 ha during rabi season by 132 farm women and 11 farmers adopted *Panthal* system of vegetable cultivation, at their own cost and contribution of NADP scheme. KVK also facilitated to get *Uzhavar santhai* card to vegetable growers of NICRA village in convergence mode with Department of Agriculture Marketing. Hence, the farm women became empowered through direct sale of their products in *Uzhavar santhai* and getting an appreciable income of Rs.800 to Rs.1500/- day through growing of an additional crop.

**Key Words:** Additional crop - Vegetables – cultivation –NICRA

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## INTRODUCTION

National Innovation on Climate Resilient Agriculture (NICRA) project implemented by Krishi Vigyan Kendra, Namakkal in Vadavathur and Jambumadai villages of Erumapatti block, which recorded an average rainfall of only 400 mm for the past 20 yr. In Vadavathur village, 829 families with a population of 2850 are directly or indirectly involved in agriculture, of which 600 families were benefited under the NICRA scheme. In Vadavathur and Jambumadai villages, small onion is cultivated as an annual crop in more than 120 ha and the only source of income in two seasons. Practice of sole cropping is predominant in Namakkal District lead to poor market returns due to huge arrival of single crop. To alleviate such problems an additional crop cultivation in small area with other annual

vegetables was a feasible option to minimize market risk and ensure reasonable returns for small and marginal women farmers.

Women empowerment is a process in which women gain greater share of control over resources material, human and intellectual and financial resources and control over decision making in the home, community, society, nation and to gain power (Govindasamy and Minna, 2012; Tiwari *et al*, 2015). Annual vegetable cultivation is a profitable venture for the small and marginal farm women, as the traditional crops are becoming less remunerative. In NICRA village, after the cropping season in many fields the excess water of bore and open wells during the normal year, which has not been effectively utilized for the cultivation of additional crops which may enhance the farm

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women income during the summer season. The present study was undertaken to assess the benefits of cultivating annual vegetables as an additional crop during surplus rainfall and boosting the income of farm women exclusively for which they were imparted practical training on the package of practices and marketing strategy.

## MATERIALS AND METHODS

The present study was undertaken in villages Vadavathur and Jambumadai of Namakkal district. Small onion cultivation is predominant in this village and after the harvesting, farmers kept the land as barren. The farm women not cultivating any crop even they got excess rainfall. KVK,

**Table 1. Personal profile of selected farm women. (N=30)**

Sr. No.	Parameter	Number of respondents	Percent (%)
1.	Age (yr.)		
	25-30 (Young women)	12	40
	31- 40 (Middle age group)	15	50
	Above 41 (Old)	3	10
2.	Education		
	Illiterate	0	0
	Up to Primary	23	76.6
	Middle School	5	16.7
	High School	2	6.7
	College	0	0
3.	Family type		
	Nuclear	27	90
	Joint	3	10
4.	No. of members		
	1-3	6	20
	3- 5	21	70
	> 5	3	10
5.	Land holding (ha)		
	1 ha	3	10
	1.0 –2.0	23	76.7
	More than 2 ha	4	13.3
6.	Income of the family (lakh)		
	< 1.5	9	30
	1.5 -2.5	18	60
	> 2.5	3	10

## Women Empowerment through Additional Crop Cultivation

Namakkal took initiative along with Department of Horticulture for getting NADP schemes in turn helped to improve farm facilities like drip irrigation, Pandhal system, Vermi-composting unit for vegetable cultivation and economic upliftment of farm women in NICRA village. KVK provided technical backstopping through training and critical inputs such as vegetable seed viz., Tomato, Brinjal, Okra, Cluster bean, Annual Moringa, *Lablab* and Cucurbits for cultivation as additional crop to the farmers. KVK also facilitated to get *Uzhavar santhai* card to vegetable growers of NICRA village in convergence mode with Department of Agriculture Marketing also arranged transport facility with the help of District Administration to reach Uzhavar santhai.

Complete package of practices for vegetable crops were adopted by the target group. Fifteen small and marginal farm women were selected from each village thus making a total sample size of 30 participants. Data were collected through schedule questionnaire, group discussion, observation during field visit and personal interview.

## RESULTS AND DISCUSSION

### Profile of farm women

Personal characteristics and profile of the selected farm women gave a clear indication that the age of the farm women varied between 25-30 yr at the lower level and 46 yr at the upper age limit. Among the farm women (50 %) belonged to middle age group (31- 40 yr) whereas 40 per cent were young age group between 25 -30 yr and only 3 women under the age group of above 41 yr. In case of literacy level, it was evident that in rural areas, still education of women's was neglected phenomenon as in the other part of the country and the same was reflected in the interview. None of the farm women had even passed college education. All the farm women were educated and 76.6 per cent were educated up to primary school. Only 5 women (16.7 %) and 2 women (6.7%) had passed middle school and high school examination respectively.

An important fact which came to the notice was that nuclear family system was growing faster in the rural areas also and not a phenomenon limited to the urban areas exclusively. The data revealed that 27 families (90 %) lived in the nuclear family whereas only 3 farm women (10 %) belonged to the joint family system. This means that due to certain socio-economic and personal reasons craze of nuclear family pattern was increasing in rural area very drastically. Seventy per cent families had 3-5 family members and only 10 per cent had more than 5 members at home.

### Land holding

Land holding in the village varied between 1 to more than 2 ha/family. Maximum number (76.7%) of the families had small land holding i.e., 1 to 2 ha, 13.3 per cent of the families had more than 2 ha and minimum (10 %) owned 1 ha / family. Hence, the economic condition of the village was also not very satisfactory. The annual income of the family ranged between < 1.5 - > 2.5 lakh. Maximum number of the family fell in the income range of 1.5 – 2.5 lakh (60 %) while 30 per cent families earned < 1.5 lakh per annum. Hence, it was clear that the land holding of the villagers was less and hence could be designated under the marginal category. So, in order to boost the economic viability through additional cropping during excess rainfall and introduction of the annual vegetable crop and variety with reasonable market opportunity was essential keeping in view about the age group and literacy level.

Depending upon the availability of water, the farm women were able to cultivate 2-3 types of vegetables in an area of 50 cent to 0.4 ha as additional crop after the harvest of small onion cultivated during *rabi*. Based on the types of vegetable growing, the farm women categorized in to five group's viz., 1.Fruit vegetable grower – 2 crops, 2.Fruit vegetable grower – 3 crops 3. Legume type of vegetables grower along with annual moringa 4. Cucurbits grower and 5. Cucurbits along with

**Table 2. Economics of additional crop cultivation during excess rainfall.**

Farm women category	Crops grown	No. of farm women involved	Total Yield (kg)	Average Sale price (Rs/kg)	Expenditure (Rs)	Gross income (Rs)	Net income (Rs)	C:B ratio
I	<b>Fruit vegetables 2 crops</b> 1. Tomato – 25 cent 2. Brinjal – 25 cent	6	3000 1200	10 40	27800	78000	50200	2.8
II	<b>Fruit vegetables 3 crops</b> Tomato-20cent      Brinjal- 20 cent Bhendi- 10 cent	5	2400 940 410	10 40 20	22600	69800	47200	3.0
III	Leguminous vegetable along with Annual moringa Lab lab – 15 cent + Cowpea / cluster bean – 10 cent Moringa – 25 cent	8	480 800 3000	40 20 15	22100	80200	58100	3.6
IV	<b>Cucurbits</b> Bitter gourd- 20 + Snake gourd-15 + Ribbed gourd - 15)	6	3050	30	26680	91500	64820	3.4
V	Cucurbits (40 cent) + Tomato (10 cent)	5	2440 1200	30 10	25300	85200	59900	3.4

Tomato. Most of the vegetables *viz.*, lablab, beans, okra, cluster bean, ribbed gourd the first harvests was made by farm women on 45 -50 d after sowing, whereas snake gourd, bitter gourd, brinjal, tomato were harvested on 50 - 60 d after sowing / planting. The farm women harvest the lab lab, vegetable cowpea in 3 d / week. Other vegetables harvested daily. Moringa leaves also harvested in addition to pod & sold @ Rs 5 / small bundles & Rs.10/ big bundles. The farm women sold brinjal and lab lab @ Rs.40/ kg, cucurbits @ Rs.30/kg, vegetable cowpea, okra and cluster bean @ Rs.20/kg and Tomato & Moringa @ Rs.10/kg at Uzhavar santhai, Namakkal.

The economic analysis (Table 2) revealed that the category I farm women spent highest expenditure (Rs.27,800/-) for their additional crop cultivation, which was followed by category IV (Rs.26,680/-). This may be due to high cost involved towards purchase of seed, intercultural operations like staking and training to tomato hybrids & cucurbits. Category III farm women spent minimum expenditure (Rs.22100/-) for leguminous vegetable cultivation along with annual moringa. This could be achieved by means of low cost involved for cultivation. Category IV farm women obtained the maximum net return (Rs. 64820/-) which was followed by category V (Rs.59,900/-) and category

## Women Empowerment through Additional Crop Cultivation

**Table 3. Extent of economic empowerment & social achievement of farm women**

Sr. No	Economic / social parameter	Rank
1	Self confidence / Education to the children	I
2	Food habit / Health care	II
3	Decision on expenditure	III
4	Family standard	IV

III (Rs.58100/-). This may be due to higher yield and good sale price of selected vegetables prevailed in the market than the other vegetables. The cost: benefit ratio was also highest (1:3.6) in case of Category III and Category IV and V gave a benefit of 1:3.4 and the least was from Category I (1:2.8). Hence, the farm women involved for more than 2 crops cultivation in an area of 50 cent got appreciable net income during the *rabi* season having surplus rainfall (Singh *et al*, 2006). Therefore, farm women got good amount towards the cultivation of annual vegetables as an additional income during the excess rainfall received in the year 2013 (639 mm), 2014 (823 mm), 2015 (640.5 mm), 2017 (638 mm) and 2018 (549.8 mm) (Fig.1). Hence, it was proved that the excess water of bore and open wells during the normal year in NICRA villages has been effectively utilized for the cultivation of additional crops which may enhance the farm women income during the summer season.

The data (Table 3) revealed that after adopting additional cropping the farm women got self confidence which is highly essential for any development or empowerment and secured rank I. Food habit secured rank II, because their attitude changed from food quantity to its quality. Decision making regarding spending of money secured rank III. Likewise, increases in family standard were in order of rank. In case of social parameter, Farm women were more concerned about their child education as they thought that education changes the behaviour, attitude and knowledge of a child.

The results of the study on additional cropping with seasonal vegetables for the sustainable crop production in NICRA villages were found to be

encouraging. The performance of these crops with different hybrid varieties proved that there is an ample scope to grow these crops due to prevailing suitable agro climatic condition of the village as well as the gaining (Dasgupta and Bhoumik, 2014). Because of the efforts made by KVK, now 10 types of vegetables are being cultivated in an area of 44.8 ha during *rabi* season by 132 farmers and 11 farmers adopted *Panthal* system of vegetable cultivation under NICRA scheme, on their own cost and contribution of NADP scheme (Fig.1)

Hence the farm women became empowered through direct sell of their vegetables in *Uzhavar santhai* without middle man interference and getting an appreciable income of Rs.800 to Rs.1500/ day through additional cropping. Farmers practiced vegetable cultivation opined that additional cropping during excess rainfall facilitated effective utilization of water with good yield and better returns in a shorter period of time. Not only this money helped to improve the quality of life, education especially the farm women were more concerned about their children education and health of the farm family but also helped them build their asset base by repairing of their house / vehicles.

### CONCLUSION

Income generating activities are the important tool for empowerment of rural women. The additional crop cultivation during surplus rainfall provides economically viable intervention for the farm women. Farm women involved in more than two vegetables cultivation got good income for 2-4 m period. Besides, raising the income level the intervention provides livelihood security to

vegetable growers of the area. Considering the productivity and profitability, the farmers expressed satisfaction with the performance of additional vegetable crop. The farmers of adjoining areas were also convinced and interested to adopt such type of crop cultivation during excess rainfall.

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