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## IMPACT ASSESSMENT OF KITCHEN GARDENING ON NUTRITIONAL SECURITY AND EMPOWERMENT OF WOMEN IN WEST GODAVARI DISTRICT OF ANDHRA PRADESH

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**Abstract:** National Institute of Nutrition, Hyderabad has recommended 300g. Vegetables, including 120g. Green leafy vegetables, 90g. Root vegetables and 90g other vegetables/capita/day to combat malnutrition. Food Security and nutritional security and socio – economic status of the household can be improved by women empowerment. Vegetables and green leafy vegetables are rich sources of macro and micro – nutrients helps to control malnutrition in under developed and developing countries. Kitchen gardening is a technology which enables us to grow bacteria free vegetables at home providing a good use of empty tins, old utensils and clay flower pots. This activity, not only save our money and time but also can provide a healthy, useful and environment friendly hobby for whole family. Majority of them had agriculture as their occupation, followed by house wives. Above fifty percent of the family had 2 – 4 members' in their family. Recognizing the value and potential of kitchen gardens for enhancing food security and livelihoods, numerous initiatives have been launched by governmental organizations in India that are providing support and building local capacity to enhance the productivity and also for scaling up kitchen garden activities.

**Keywords:** Kitchen Gardening, Women, Nutritional Security, Empowerment, Vegetables, Impact, Diet.

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**Introduction:** In India, number of projects are designed without due considerations of women's life and other conditions such as productive and reproductive roles and as a consequences for women's work burdens, availability of time and local disparities, gender disparities and nutritional imbalances may intensify. Further, even project related to women empowerments in one area do not translate her capacity to take decisions, choices and power relations in other area of women's life. The protein-energy malnutrition is a major problem due to the limited availability of sources, and other socio – economic conditions.

National Institute of Nutrition, Hyderabad has recommended 300g. Vegetables, including 120g. Green leafy vegetables, 90g. Root vegetables and 90g other vegetables/capita/day to combat malnutrition. In rural India, women tend to have high rates of under nutrition, are more than twice as likely as men to be anemic, tend to eat least and last and absorb a disproportionate share of shocks. Studies that measure empowerment in different areas suggest that the linkage between economic empowerment and nutritional wellbeing are complex, particularly in rural contexts.

In total world population, 43.0 % of labour force comprises women only and globally gender disparity is the major problem. So there is a necessity to empower women to enhance the rights to minimize the problems and

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increase the self-confidence. Food Security and nutritional security and socio-economic status of the household can be improved by women empowerment. Vegetables and green leafy vegetables are rich sources of macro and micro-nutrients helps to control malnutrition in underdeveloped and developing countries. According to estimates, women can minimize the undernourished population by 95-100 million people globally by acting as food producers and caretakers to ensure household food security and nutrition. In spite of the involvement in managing and providing food security to households, women still fall into the group of people who are vulnerably disempowered from the economic and social perspectives in the society. In this context, Kitchen gardening is a technology which enables us to grow bacteria free vegetables at home providing a good use of empty tins, old utensils and clay flower pots. This activity can not only save our money and time but also can provide a healthy, useful and environment friendly hobby for whole family (Cheema, 2011). Research shows that gardening is a preferred form of exercise across age, gender, and ethnicity (Krems and Lehrmann, 2004). In order to preserve health and prevent malnutrition; we should develop a kitchen garden; grow fresh and clean vegetables and make them a part of our daily diet (Christensen, 2011).

Therefore, the present study was undertaken to empower the women for economic and nutritional security through the homestead kitchen gardening at household-level

**Methodology:** Front line Demonstrations (FLD) were conducted from 2010-11 to 2012-13 by Krishi Vigyan Kendra, Undi, West Godavari in small households of its adopted villages Adavikolanu village of Nidamarru Mandal, Turputalla of Narsapur Mandal, K P Palem and Mutyalapalli villages of Mogalturu mandal and Chilukuru of Undi Mandal of which are located in West Godavari district, Andhra Pradesh. Ten households were randomly selected for evaluation of benefits of homestead Kitchen gardening. Collected socio demographic variables of families, vegetable consumption and income of families before and after establishment of kitchen gardening, vegetables and green leafy vegetables used in kitchen gardening, effect of the kitchen gardening on the economic and health aspects of farm families.

**Results and Discussion:**

**Profile of Respondents:** The socio demographic variables selected for the research study were age, educational qualifications, income of the family, family size, occupation, marital status and the data was presented in table 1. Table - 1 depicted that majority were middle aged had primary education, with annual income ranging from Rs. 10000-15000, and most of them were married. Majority of them had agriculture as their occupation followed by house wives. Above fifty percent of the respondents had 2 - 4 members family members in their family. The respondents expressed that due to the reasons of low income, gender disparities, lack of educational qualifications, lack of knowledge, lack of self-confidence, lack of sources, lack of accessibility and availability of foods for the households. The recent research studies revealed that the households' socio demographic variables greatly affect the socioeconomic status, nutritional security and economic empowerment of households.

**Table 1: Socio Demographic Variables of Families  
(n=30)**

S. No	Variables	Frequency	Percentage
<b>1</b>	<b>Age (yrs)</b>		
	21-35	11	36.67
	35-45	14	46.67
	45-55	5	16.67
<b>2</b>	<b>Educational qualifications</b>		
	Illiterate	5	16.67
	Can read and write	6	20
	Primary	12	40
	Secondary	7	23.33
<b>3</b>	<b>Income (Rs/Month)</b>		
	Below 5000	5	16.67
	5000-10000	14	46.67
	10000-15000	11	36.67
<b>4</b>	<b>Marital status</b>		
	Married	28	93.33
	widow	2	6.67
<b>5</b>	<b>Occupation</b>		
	House wives	12	40
	Farmers	14	46.67
	Business	4	13.33
<b>6</b>	<b>Family members</b>		
	2-4 members	16	53.33
	Above 4 members	14	46.67

**Table 2: List of Green Leafy Vegetables and Vegetables used in Kitchen Gardening**

S. No	Name of the vegetables	Before established kitchen gardening				After established kitchen gardening			
		Daily	Weekly	Fortnight	Monthly	Daily	Weekly	Fortnight	Monthly
1.	Amaranthus		Once				Thrice		
2.	Palak						Thrice		
3.	Chukka koorra			Once			Thrice		
4.	Menthi				Once		Thrice		
5.	Bachali						Thrice		
6.	Kothimeera			Twice		Twice			
7.	Tomato	Once				Once			
8.	Brinjal		Once				Twice		
9.	Bottle gourd				Once		Twice		
10.	Bitter gourd						Twice		
11.	Ridge gourd			Twice			Twice		
12.	Chilli	Once				Once			

According to FAO and WHO the average per capita consumption of vegetables was about 400 mg per day/person. It is very difficult to meet these

requirements for low income households. The vegetables and green leafy vegetables used in the kitchen gardening were presented in table 2. These results showed that the nutritional security was attained with increased availability of vegetables and green leafy vegetables in households with reasonable price rates. Before the experiment there were number of barriers for availability and price of the vegetables for households. Low fruit and vegetable consumption is Low fruit and vegetable consumption is a key contributor to all forms of malnutrition. Health and food quality were primarily seen through a food safety lens and negative aspects were frequently attributed to increased pesticide use. Availability, reasonable price and affordability of fresh fruit and vegetables were important drivers of their acquisition and consumption.

**Table 3: Economics of Vegetables and Leafy Vegetables Under Kitchen Gardening**

S. No	Name of the crop	Average qty (kg)	Rate / Kg (Rs.)	Total amount (Rupees)
1.	Amaranthus	25	15	375
2.	Palak	31	15	465
3.	Chukka koorra	30	30	900
4.	Menthi	24	20	480
5.	Bachali	28	25	700
6.	Kothimeera	30	20	600
7.	Tomato	25	50	1250
8.	Brinjal	24	40	960
9.	Bottle gourd	22	20	440
10.	Bitter gourd	27	30	810
11.	Ridge gourd	29	50	1450
12.	Chilli	23	30	690

Table 3 depicted that after consumption of vegetables and leafy vegetables by the households remaining quantity could be sold at market prices for economic empowerment of the women in their home. Majority of the respondents expressed that they sold their produce at their local market and getting around 2000 rupees from all the vegetables which were grown in their home after household consumption.

**Table 4: Effect of the Kitchen Gardening on the Economic and Health Aspects of Farm Families**

S. No	Parameters	Very good	Good	Moderate	Low
1.	Influence on the savings	√	-	-	-
2.	Influence on variety availability	-	√	-	-
3.	Influence on good health of family	√	-	-	-
4.	Influence on labour availability	-	√	-	-
5.	Influence on soil health	-	-	√	-
6.	Purposeful utilization of spare time	√	-	-	-
7.	Taste of food prepared	√	-	-	-

Table 4 is based on the questionnaire filled up from the selected farm families covered under the kitchen gardening study. Influence on the savings, influence on the good health of the family, purposeful utilization of spare time of the family and taste of the prepared food of integrated nutrition garden showed very good response. While, influence on the availability of variety food and on the labour availability in general showed good trends. As, per the selected farm families the migrated labour required for agriculture operations is happy with the variety of food available with the selected farm families. The influence on the soil health is moderate.

**Conclusion:** Promotion of kitchen gardens as an eco-friendly sustainable agricultural practice to improve Nutritional security and enhance economic growth. Kitchen gardens fulfill social, cultural and economic needs, while providing a number of ecosystem services. In the wake of a global food crisis and the soaring food prices, there has been increased emphasis on enhancing and building local food systems. Household women face many obstacles that spoil their welfare. Insurances that seek to empower them, for example, by amending livelihood opportunities, often do not transform into meliorations in other areas, notably in their nutritional status. Indeed, many existing measures of women's empowerment have equivocal associations with indices of nutritional status. This is likely because existing Operationalization of empowerment often focus on aspects that are somewhat lateral from factors that influence nutrition. In this context, there is renewed attention to food production and livelihood enhancement through kitchen gardens. Recognizing the value and potential of kitchen gardens for enhancing food security and livelihoods, numerous initiatives have been launched by governmental organizations in India that are providing support and building local capacity to enhance the productivity and also for scaling up kitchen garden activities.

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