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Profile and constraints faced by beneficiaries regarding kitchen gardening under FSN project in Chandrapur district

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Abstract

The present research was undertaken on topic "Perception of beneficiary about kitchen gardening under farming system for nutrition project" was conducted in Delanwadi, Dhumankheda and Nandgaon villages of Sindewahi taluka in Chandrapur districts of Maharashtra state with exploratory research design of social research was used for study. The data were collected, examined, classified, quantified and tabulated by personally interviewing the 120 randomly selected beneficiaries with the help of structured interview schedule. Frequencies, mean, standard deviation and coefficient of correlation was employed for interpreting the results. Kitchen Gardening is an important component for household food security contributes to household income and savings and improves the health and nutritional well-being of the family. An exploratory design of social research was used for the present investigation aims at assessing the beneficiaries. The findings of the research study revealed that majority of the beneficiaries (70%) possessed high level of perception about kitchen gardening followed by medium (17.50%) and low (12.50%) extent of perception about kitchen gardening.

Keywords: Perception, *Kitchen gardening*, pest and disease free vegetables (Organic)

Introduction

Kitchen gardening is an important component for household food security contributes to household income and savings and improves the health and nutritional well-being of the family. It is commonly a family activity including women, men, children and elderly persons and one of the world's most ancient agricultural practices. Planting and maintaining a kitchen garden brings families together and kids naturally gravitate to gardening. It is cost saving activity that can be enjoyed as a hobby. It acts as a source of relaxation during high stress period and reduction in illness and stress. Further, it is important to stay healthy to minimize healthcare expenses. Eating vegetables and fruits in sufficient quantity will boost one's immune system which helps to stay healthy. It gives dual benefits of providing food and healthy life. Therefore, kitchen garden is like a doctor/ clinic/ medicine cabin wrapped into one, expanding fresh vegetable intake, supplementing the diet with vegetables containing rich nutrient which increases immunity, cures illness and improves the quality of life. One way to offer a great potential for improving household food security and elevating micronutrient deficiencies is to grow vegetables in own kitchen garden at home and eat fresh vegetables and fruits. This will enhance food security by direct access to a diversity of fresh vegetable at fingertips. Kitchen garden plays a vital role in the lifestyle of people living in urban areas or small towns. The main point of

building up a Kitchen garden is to safeguard formal beliefs and social character of joint families. Potential benefits such as income and enhanced rural employment through additional or off season production, enhanced food security, increased availability of food and better nutrition through food diversity. Others factors like decreased risk though diversification and environmental benefits, food cycling, water nutrients, controlling shade, dust and erosion and maintaining or increasing local biodiversity also indulge the households to practice this method. One of the easiest ways of ensuring access to a healthy diet that contains adequate macro and micronutrients is to produce many different kinds of food in the Kitchen garden. This is especially important in rural and semi urban areas where people have limited income earning opportunities and poor access to markets. Kitchen gardens are becoming an increasingly important source of food and income for poor households in semi-urban and urban areas.

The World Health Organization (WHO) defines health as a state of complete physical, mental and social well-being and not merely an absence of diseases. Good health can be described as a condition where both body as well as mind is functioning properly. The main causes behind poor health condition are diseases, improper diet, injury, mental stress, lack of hygiene, unhealthy lifestyle etc. Over the past few years, our lifestyle has changed and we often tend to ignore the importance of healthy living in one day or the other.

Health is directly related to food consumed. To maintain good health taking nutritious diet in adequate amount is essential. Balanced nutrition is of fundamental importance for the growth and development of human body. Vegetables can play an important role in human nutrition. Intake of fresh vegetables is must in our daily diet as they provide essential nutrients for good health. All nutritionists encourage people to consume recommended vegetables, pulses and fruits per day. Kitchen garden plays an important role for rural families to provide diversified vegetables, fruits and pulses in their daily diet. India is the second largest producer of fruits and vegetables in the world (Tuteja 2011) but the intake of vegetables in our daily diet is low. According to World Health Organization (WHO) the daily per capita intake of vegetables in India is 400g whereas for a balanced diet, an adult should have a minimum daily intake of 300g of vegetables. In rural areas majority of the farmers failed to fulfil their family requirement of vegetables and pulses from their own farm and they have to purchase these from local market.

Farming System for Nutrition (FSN) is UNICEF funded project in collaboration with ATARI, Zone-VIII (Under NARI Project), MCAER, Pune and Technical support from M.S. Swaminathan Research Foundation, Chennai. Farming System for Nutrition (FSN) is a model that entails mainstreaming the nutrition dimension in the design of the farming system based on locally available crop and animal husbandry resources and farming practices. The central objective of FSN project was to study the feasibility of a location-specific FSN approach to improve household dietary diversity. Farmer System for Nutrition (FSN) project provides agricultural remedies to the major nutritional deficiencies including micronutrients like zinc, iron, iodine, vitamin A etc. FSN will help to not only improve the yield of crops but also mainstream the nutrition dimension in the choice of crops.

FSN Strategies to fine-tune the farming system to address nutritional concerns were:

1. Promoting vegetable cultivation through household and community level gardens with naturally biofortified fruits and vegetables, species and nutrient-dense varieties especially green leafy vegetables to address micronutrient malnutrition.
2. Widen the on-farm crop diversity to improve the dietary diversity.

To popularize the kitchen gardening among the farming community in rural areas, KVK Sindewahi conducted frontline demonstration (FLD) programmes for the farmers to aware them about the importance of kitchen gardening. As the part of this the beneficiaries selected were exposed to the training at KVK Sindewahi and were asked to implementing this demonstration at their own land. Accordingly, the present study was conducted to evaluate Perception about Kitchen gardening with the title "Perception of beneficiary about kitchen gardening under Farming System for Nutrition project".

Materials and Methods

Locale of the study

The present study was undertaken in Chandrapur district of Vidarbha region of Maharashtra state. The above district was selected purposively on the basis of major area under kitchen gardening where KVK Sindewahi conducted frontline demonstration (FLD) under FSN project.

Selection of respondents

The forty beneficiaries were selected randomly from each village with well-maintained kitchen gardens and who adopted the frontline demonstration (FLD) of KVK Thus, total 120 beneficiaries were the sample size for the study.

Sr. No.	District	Taluka	Name of village	No. of Beneficiaries
1	Chandrapur	Sindewahi	Delanwadi	40
			Dhumankheda	40
			Nandgaon	40
Total				120

The whole sample was considered as respondents and they were interviewed for collection of data.

Measurement of Profile and Constraints faced by beneficiaries regarding kitchen gardening under FSN project.

Operational definitions, Measurements and categorization Keeping in view the objectives of the study the relevant variables for the study were selected on the basis of past researches and on the opinion of the advisory committee. The variables studied and the measurements employed in this study were given below.

Sr. No	Variables	Measurement
A) Independent variables		
1.	Age	Age of beneficiaries was measured as reported by kitchen gardeners themselves in the form of number of years completed as on date of interview.
2.	Education	It was measured in terms of standard in formal school passed by the kitchen gardeners and considered the score
3.	Occupation	It is operationally defined as the profession of beneficiaries as the source of income.
4.	Family size	It were measured in terms of equal interval method.
5.	Family type	It is the composition of a family i.e. either nuclear or joint family. It was measured on two-point continuum i.e. 1 or 2.
6.	Land holding	It refers to total land possessed by the beneficiaries in terms of hectare at the time of investigation
7.	Area of Kitchen gardening	The actual area grown under kitchen gardening by the beneficiaries. The beneficiary were classified into following category on the basis of equal interval method.
8.	Experience in kitchen gardening	The total number of years possessed by the beneficiaries in farming, such experience in completed years was considered as his/her score.
9.	Annual Income	Income in rupees received by the beneficiaries and his family member derived from all sources in a year were considered as a score.
10.	Extension contact	Extension contact was measured on three-point continuum namely regular, occasionally and never by assigning score 3, 2 and 1 respectively.

Measurement of constraints faced by the beneficiaries regarding kitchen gardening under FSN project.

The Oxford dictionary meaning of the word constraints is confinement, restriction of liberty or compulsion of circumstances or compulsion put upon the behavior. Reading (1971) defined constraints as use of force to influence or prevent an action or quality or state of being compelled to do or not to do something. In this study the measuring constraints faced by beneficiaries regarding kitchen gardening under FSN project, a simple frequently system was applied. The beneficiaries regarding kitchen gardening under FSN project were asked to give the information about the constraints encountered by them in application in kitchen gardening crop was ascertained. The frequencies obtained were from highest to lowest and on that basis percentages were calculated. Considering the constraints faced by the beneficiaries regarding kitchen gardening under FSN project and to overcome the same in kitchen gardening application successfully in vegetable crop.

Results and Discussion

Profile of beneficiaries regarding kitchen gardening under FSN project

1. Age

Age of beneficiaries was measured as reported by beneficiaries themselves in the form of number of years

completed as on date of interview. The chronological age of beneficiaries was considered and then beneficiaries were categorized into three categories such as up to 35, 35-50 and above 50.

Table 1: Distribution of the beneficiaries according to their age

Sr. No.	Age	Beneficiaries (n=120)	
		Frequency	Percentage
1	Young (up to 35)	32	26.66
2	Middle (36-50)	65	54.17
3	Old (above 50)	23	19.17
Total		120	100.00

The data presented in the table 1 revealed that majority of the beneficiaries i.e. 54.17 per cent belonged to middle age followed by more than one fourth of the beneficiaries i.e. 26.67 per cent belonged to young age and Only 19.17 per cent of the beneficiaries belong to old age category.

These findings were in conformity with the findings of Karim *et al.* (2021)^[10].

2. Education

It was measured in terms of standard in formal school passed by the beneficiaries. In this study the education was categorized as Illiterate, Primary school, middle school, high school, junior college, College and above.

Table 2: Distribution of the beneficiaries according to their education

Sr. No.	Education	Beneficiaries (n=120)	
		Frequency	Percentage
1	Illiterate	11	9.17
2	Primary school	9	7.50
3	Middle school	22	18.33
4	High school	44	36.67
5	Higher Secondary school/Junior College	22	18.33
6	College and above	12	10.00
Total		120	100.00

The result shows that 9.17 percent had to illiterate followed by 7.50 percent of the beneficiaries had primary school education. 18.33 percent of the beneficiaries had middle school education. 36.67 percent of the beneficiaries had High school education. 18.33 percent of the beneficiaries had junior College and 10 percent of the beneficiaries had college and above.

These findings were in conformity with the findings of

Dubey (2020)^[6] and Arya *et al.* (2018)^[2].

3. Occupation

It is operationally defined as the profession of beneficiaries as the source of income. The beneficiaries were asked to give information about their occupation and they were categorized into five categories.

Table 3: Distribution of the beneficiaries according to their occupation

Sr. No.	Occupation	Beneficiaries (n=120)	
		Frequency	Percentage
1	Only agriculture	33	27.51
2	Agriculture + Labour	52	43.33
3	Agriculture + Allied occupation	13	10.83
4	Agriculture + business	13	10.83
5	Agriculture + Service	9	7.50
Total		120	100.00

Data revealed that more than half of the beneficiaries i.e. 43.33 per cent belong to agriculture + labour category. 27.51 per cent of the beneficiaries belong to only agriculture category followed by 10.83 per cent and 10.84 per cent of the beneficiaries belong to agriculture + allied occupation

and agriculture + business respectively. Very few of the beneficiaries i.e. 7.50 per cent belong to agriculture + service category. These findings were in conformity with the findings of Kaur *et al.* (2020)^[12] and Kaur (2016)^[11].

4. Family size

Family size refers to total members in the family i.e. male, female and children and the findings revealed that 64.17 per cent of the beneficiaries belong medium category followed by 20.83 per cent of the beneficiaries belong to small category and only 15 per cent belong to big family category. These findings were in conformity with the findings of Dubey (2020)^[6], Jangwad (2018)^[8] and Chayal *et al.* (2013)^[5].

Table 4: Distribution of the beneficiaries according to family size

Sr. No.	Family Size	Beneficiaries (n=120)	
		Frequency	Percentage
1	Small (up to 4)	25	20.83
2	Medium (5-8)	77	64.17
3	Big (above 8)	18	15.00
Total		120	100.00

5. Family type

Family type of the beneficiaries was studied in terms of nuclear and joint family. It was evident from the data that majority of the beneficiaries i.e. 70 per cent belonged to the nuclear family while 30 per cent of the beneficiaries belongs to joint family. Somewhat similar results are found with the above results are Chayal *et al.* (2013)^[5] and Arya *et al.* (2018)^[2].

Table 5: Distribution of the beneficiaries according to family type

Sr. No.	Family Type	Beneficiaries (n=120)	
		Frequency	Percentage
1	Nuclear	84	70.00
2	Joint	36	30.00
Total		120	100.00

6. Land holding

Land holding was defined as the number of hectares of land possessed by the beneficiaries. The beneficiaries were grouped in to five categories according to the standard category.

Table 6: Distribution of the beneficiaries according to land holding

Sr. No.	Land Holding	Beneficiaries (n=120)	
		Frequency	Percentage
1	Marginal (up to 1)	20	16.66
2	Small (1-2)	65	54.17
3	Semi-Medium (2-4)	30	25.00
4	Medium (4-10)	5	4.17
5	Large (above 10)	0	0.00
Total		120	100.00

Most of the beneficiaries i.e. 54.17 per cent from the selected villages have small land holdings. Data given in Table 6 revealed that 25 per cent of the beneficiaries cultivated were comes under semi- medium category of land followed by 16.66 per cent of the beneficiaries belong to marginal category. Remaining 4.17 per cent of the beneficiaries belong to medium category. These findings are in line with Chayal *et al.* (2013)^[5].

7. Area of kitchen gardening

It was actual area of land under kitchen garden during

sample year. Based on the area under kitchen garden, the beneficiaries were classified into three categories. All the beneficiaries belonged to medium category. These findings are in line with Pawar (2014) and Khandvi *et al.* (2013)^[9].

Table 7: Distribution of the beneficiaries according to area of kitchen gardening

Sr. No.	Area of kitchen gardening	Beneficiaries (n=120)	
		Frequency	Percentage
1	Small(up to 0.002)	0	0
2	Medium (0.0021-0.004)	120	100
3	Large (above 0.004)	0	0
Total		120	100.00

8. Experience in kitchen garden

It referred to how many years the beneficiaries have been cultivating vegetables in kitchen gardening. The beneficiaries were classified into three categories according to their experience in growing vegetables in kitchen gardening. experience has its influence on perception and adoption behaviour of the beneficiaries.

Table 8: Distribution of the beneficiaries according to experience in kitchen garden

Sr. No.	Experience in kitchen gardening	Beneficiaries (n=120)	
		Frequency	Percentage
1	Low(1)	20	16.67
2	Medium (2)	20	16.67
3	High (3)	80	66.66
Total		120	100.00

The data in Table 8 showed that more than half of the beneficiaries i.e. 66.67 per cent belong to high category followed by less than one third of the beneficiaries i.e. 16.67 per cent belong to low category. Remaining 16.67 per cent of the beneficiaries belong to medium category.

9. Annual Income

Annual income refers to the total income in a year of all the family members of the beneficiaries from all the sources. Annual income of the family helps to project the overall economic position of individual, hence it was considered in present study.

Table 9: Distribution of the beneficiaries according to their annual income

Sr. No.	Annual Income	Beneficiaries (n=120)	
		Frequency	Percentage
1	Low (up to 60000)	24	20.00
2	Medium (61000-198000)	75	62.50
3	High (above 198000)	21	17.50
Total		120	100.00

The result pertaining in this regard has been presented in Table 9 Findings revealed that more than half of the beneficiaries i.e. 62.50 per cent belong to medium income category followed by nearly one third of the beneficiaries i.e. 20.00 per cent belong to low income category and 17.50 per cent belong to high income category.

Somewhat similar results were found with the above results are Karim *et al.* (2021)^[10], Dubey (2020)^[6] and Arya *et al.*

(2018)^[2].

10. Extension Contacts

Extension contacts of the beneficiaries was studied according to number of contacts with different extension personnel for getting information regarding kitchen gardening. From the figures in Table 10 it was found that among all the extension personnel, from the last three years all the beneficiaries were seeking regular information from KVK scientist followed by all the beneficiaries were seeking occasional information from Krushi sevak and all the beneficiaries were never seeking any information from Agriculture assistant and Agriculture officer.

Table 10: Statement wise distribution of beneficiaries according to their extension contacts for seeking advice regarding kitchen gardening

Sr. No.	Extension personnel	Regular	Occasionally	Never
1	Krushi Sevak	0	120 (100)	0
2	Agriculture Assistant	0	0	120(100)
3	KVK Scientist	120 (100)	0	0
4	Agriculture officer	0	0	120 (100)

Table 12: Distribution of beneficiaries according to constraints faced by beneficiaries regarding kitchen gardening under FSN project (n=120)

Sr. No.	Constraints	Frequency	Percentage
1	Vegetables don't grow properly during high rainfall condition due to humidity.	90	75
2	Frequent inundation of kitchen garden during rainy season.	70	58.33
3	Lesser involvement of women's in adoption of kitchen gardening.	45	37.50
4	Lack of awareness about organic resources, use of fertilizers and nonuse of micronutrients.	15	12.50
5	Fruit and flower drop problem due to nutrient deficiency in soil.	35	29.17
6	Lack of proper storage facility for harvested vegetables.	50	41.67
7	Disease and insect-pest problem during humid condition.	60	50

(*Multiple response)

The scrutiny of the data in Table 12 show that Three fourth of the beneficiaries i.e. 75 per cent of the beneficiaries faced that vegetables don't grow properly during high rainfall condition due to humidity. 58.33 per cent of the beneficiaries faced the problem of frequent inundation of kitchen garden during rainy season followed by 37.50 per cent of the beneficiaries were lesser involvement of women's in adoption of kitchen gardening. More than one fourth beneficiaries i.e. 29.17 per cent of the beneficiaries faced fruit and flower drop problem due to nutrient deficiency in soil. 12.50 per cent of the beneficiaries faced problem of lack of awareness about organic resources, use of fertilizers and nonuse of micronutrients. 41.67 per cent of the beneficiaries faced problem of lack of proper storage facility for harvested vegetables. 50 per cent of the beneficiaries faced problem of disease and insect-pest problem during humid condition.

Conclusion

In rural areas majority of the farmers failed to fulfil their family requirement of vegetables and pulses from their own farm and they have to purchase these from local market. People should be encouraged to develop kitchen gardens for getting fresh produce, better health and to prevent malnutrition. To popularize kitchen gardening among the farming community in rural areas, KVK Sindewahi conducted frontline demonstration (FLD) under Farming

Table 11: Distribution of beneficiaries according to their extension contacts for seeking advice regarding kitchen gardening

Sr. No.	Extension contact	Beneficiaries (n=120)	
		Frequency	Percentage
1	Low (up to 10)	30	25.00
2	Medium (11-14)	90	75.00
3	High (above 14)	0	0.00
Total		120	100.00

The data indicated in Table 11 clearly showed that 75 per cent of the beneficiary's medium extension contacts. One fourth of the beneficiaries 25 per cent of the beneficiaries had low extension contacts. Similar finding was reported by Karim *et al.* (2021)^[10].

Constraints faced by beneficiaries regarding kitchen gardening under FSN project

There were various constraints faced during the implementation of kitchen gardening which decrease its production and pose a hindrance to achieve its objectives. When the beneficiaries were investigated about the constraints faced by them while practicing in kitchen gardening, it was found that they face several constraints.

System for Nutrition project for the farmers to aware them about the importance of kitchen gardening. After FLD programme many farmers established kitchen garden and started growing vegetables for their domestic requirement. The findings revealed that majority of the beneficiaries i.e. 54.17 per cent belonged to middle age category (35-50). It was found that majority of the beneficiaries i.e. 36.67 percent of the beneficiaries had High school education. More than half of the beneficiaries i.e. 43.33 per cent belong to agriculture + labour category. 64.17 per cent of the beneficiaries belong to medium size family followed by 20.83 per cent of the beneficiaries belong to small size family. It was found that majority of the beneficiaries i.e. 70 per cent belonged to the nuclear family. Majority of the beneficiaries i.e. 54.17 per cent from the selected villages have small land holdings. All the beneficiaries i.e. 100 per cent had an area of kitchen garden belong to medium category. More than half of the beneficiaries i.e. 66.66 per cent belonged to high experience category (3 years). More than half of the beneficiaries i.e. 62.50 per cent belong to medium income. It was observed that 75 per cent of the beneficiaries that belongs to medium extension contacts with extension personnel. The findings concluded that majority of beneficiaries belonged to middle age group, were educated up to high school level, belonged to small size land holding category, had done only agriculture as occupation, had category of medium family size and joint

family, had medium area of kitchen gardening, had medium level of experience in kitchen gardening, had medium level of annual income and had medium extension contact, high knowledge, adoption was less compare to knowledge of beneficiary and having high level perception about kitchen gardening. It may be concluded that establishment of kitchen gardens had immense role in tackling the problem of malnutrition and micronutrients deficiencies in rural areas. Summing up the profile and constraints analysis, On the basis of findings, It is concluded that frontline demonstrations are effective in increasing the knowledge level of beneficiaries and adoption of kitchen gardening practices. Many other social benefits have emerged from demonstrations on kitchen gardening practices as the demonstrated beneficiaries were aware about better health and nutrition, income saving by reducing expenses of vegetable from market. The FLDs on kitchen gardening established a belief that household and small communities can take advantage of vacant land and contribute to their household food needs. Therefore, it is suggested that kitchen gardening should be popularized for its wider adoption.

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