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Editorial

Historically, extension education research has focused on topics more often associated with work responsibilities of an extension agent, such as program planning and evaluation. These, along with media presentation development, were found to be the most important instructional skills needed for success as an extension agent. The ability of Extension to be successful relies on the professional abilities of extension agents to interact with clientele. Extension strives to achieve its mission of advancing knowledge for agriculture, the environment, human health and well-being and communities. While the previous studies effectively identified professional competencies, further research was needed to examine current extension education programs and their effectiveness in preparing graduates for extension service work. Additional research was also needed to examine the preparedness of graduates and new hires, explore the current curriculum as it relates to these competencies, and describe what these competencies mean within the context of entry level Extension positions to develop recommendations for curriculum and professional development opportunities.

I am glad to dedicate the fresh volume of Journal of Extension Education to the community. I sincerely hope the publication will be of good use for the scholars of Extension Field.

Dr. Rabindra K.Raj

Chief Editor

JOURNAL OF EXTENSION EDUCATION

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I am happy to introduce our society "ORISSA SOCIETY OF EXTENSION EDUCATION" which committed itself to the farmers. The society is also publishing a biannual journal 'Journal of Extension Education' which published only research articles about research conducted at farmer's field, farmer's reaction, acceptance of new product/ innovation and all other aspects reflecting views of the farmers. We are interested to carry your advertisement in our esteemed journal which has circulation to all Agril. Institutes of India, Agril. Universities and leading farm entrepreneurs. We are confident that not only your advertisement will reach the scientists of the agril, but also widely to extension workers who subscribe to the journal maximum. Our rate of advertisement is enclosed for reference.

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Managerial Ability of Rural Women: A Ground Level Study

S.Panda and Dr.C.Satapathy

Abstract

A study on "Managerial ability of rural women: A ground level study" conducted in Odisha with randomly selected 50 sample reveal about the managerial ability of women. The areas in which managerial ability of women is required are household activities, child care and education, resource management and socio-community activities. As per major functions of management like planning, organizing, co-organizing, supervising, controlling and communicating the abilities of women was measured and substantial gap was observed. The study also reveals that a variety of variables affect the managerial ability of rural women in performing their day to day activities.

Key words: *Managerial ability, resource management, management function, socio community activities.*

Introduction:

Women are the managers of individual families. They play important role in family management. The good management of family depends upon managerial ability of the housewives and supported by the family members. The good and smooth management leads to development and prosperity of family as a whole. Measurement of managerial ability could provide a clear picture about efficiency of family managers and deficiencies if any. A series of studies reveal that management ability of women leads to progressiveness of the family. The managerial ability of women depends upon a variety of factors like, situational, personal, social and economic factors. An attempt was made to examine the type and level of managerial abilities residing of women in rural areas with following specific objectives.

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Objectives:

The study was designed to investigate into the level of managerial ability of the rural housewives belonging to farm families in general and the following objectives in particular

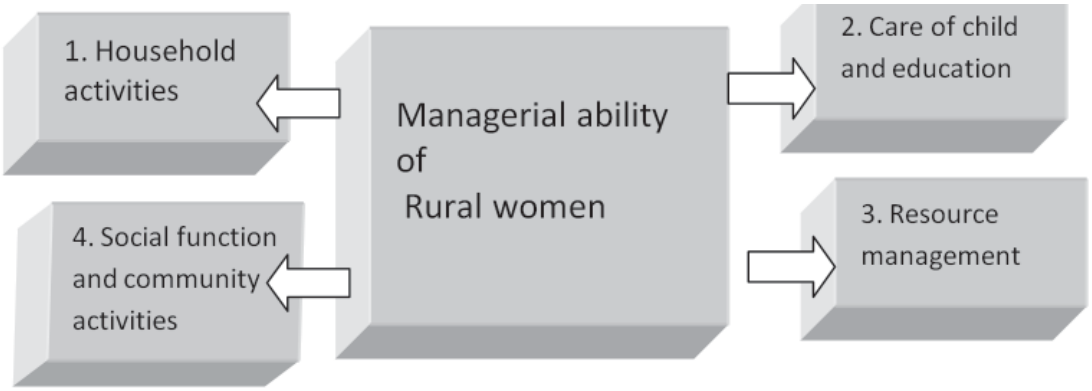
1. To find out managerial abilities of sample women with respect to household activities like kitchen management, food, nutrition, health care, sanitation, drinking water

2. To examine efficiency of sample women in relation to care of children and their educational development

3. To determine the capacity of rural women with respect to resource management in terms of components of livelihood system, crop, livestock, land improvement, non-farm activities, investment/expenditure etc.

4. To ascertain the degree to which the rural women are capable to manage social functions and community activities in terms of social festivals, village committee, development work, Self Help Group, common property management.

The conceptual outline of the study,



Review of Literature:

Bastia & Saraswati (2011) in their study, Financial inclusion of rural households Rajasthan reveal that women efficiency was found to be in opening of bank account as 63% of the sample had such savings. Out of total bank account, two - third belonged to men and remaining one - third to women.

Shivamurthy (2011) reported from his study "Paramagnetic methodology for enhancing income and employment of rural poor women" in Karnataka reported that poor women through SHG had developed entrepreneurship and achievement as evidenced by practice of production technology in trichoderma to an extent of 1200 Kg in first year of programme.

Rampal & Ladhar (2011) in a study "women empowerment through micro finance" have found out Ways and means to link the unreached poor. Micro finance with respect to poverty alleviation and social economic empowerment followed by managerial skill of women. According to them empowerment implies expansion of assets and capability of women to influence control and hold accountable institutions that affect their lives.

Sukla & Chakravorty (2011) reported that women need training on value added food products to increase their efficiency to increase household income and management of food items.

World bank (2012) reported that to increase efficiency of women, the priority areas are closing gender gap in human development, promoting women's access to economic opportunities, closing gender gap in voice and agency, preventing inter personal gaps and supporting evidence based public action.

Methodology:

The study was conducted in Jatni block of Khurda district taking 50 housewives of rural areas with criteria of being mothers and managing household activities not less than for 10 years. The data were collected on a structured and pretested scheduled covering the objectives. The collected qualitative response was measured in a three-point scale to reveal the relevant information.

Result and Discussion

The result of the study is presented objective wise with required interpretation.

1. Household activities:

A simple observation of families on the parameter of smooth functioning and presence of happiness reveals the managerial ability of housewives. The household activities like , kitchen management, food, nutrition, health care, sanitation and drinking water were examined in the context of managerial capacity of sample women covering management functions like planning, organizing, supervising, communicating, coordinating and controlling. The scoring pattern adopted was 3, 2, and 1 for very much, much and little respectively in managing the household activities.

Table 1. Managerial ability of rural women in household activities.(n=50)

Management Functions	Average Score	Gap (%)
1. Planning	1.86	38.00
2. Organizing	1.61	46.33
3. Supervising	1.58	47.33
4. Communication	1.42	52.66
5. Coordination	1.46	51.33
6. Controlling	1.63	45.66

The results reveal that gap varies from 38% to as high as 52% in the scale of recommendation of the home scientists. The rural women need more of awareness in the matter of planning, organizing household activities and making continuous supervision to achieve desired results

2. Care of children and their education: Universally mothers play a very important role in child care and their education. Now there is remarkable change in rural areas concerning to the education of children. The mothers are now more conscious than earlier days. The managerial ability of rural women is reflected in educational attainment of their children. To examine efficiency of sample women in relation to care of children and their education in terms of child care, schooling, progress result, dress and personality development a three point scale was used with assigned score of 3, 2 and 1 for always, sometimes and never respectively in managing child health and education.

Table 2. Managerial efficiency in child care and education

Management Functions	Child care	Education	Personality Development	Mean Average	Gap (%)
1. Planning	1.84	1.56	1.28	1.56	48.00
2.Organizing	1.60	1.60	1.32	1.51	49.67
3.Supervising	1.52	1.48	1.20	1.40	53.33
4.Communicating with children	1.48	1.68	1.40	1.52	49.33
5.Coordinating	1.68	1.71	1.45	1.61	46.33
6. Controlling	1.58	1.46	1.25	1.43	52.33
Mean Average	**1.62**	**1.58**	**1.32**	**1.51**	**49.67**

Data in table reveal that on an average there is gap of 49.67% in managerial efficiency of women in management of child care and their education. Out of three components of child care, education and personality development of children, sample need more training on personality development of children.

3. Resource Management: Resource management at rural areas is a multidimensional work. It needs group approach. Resources in family are mostly

farm based and non-farm based. The components of livelihood system are, crop, livestock, land improvement, non-farm activity, labor force, investment/ expenditure etc. Both male and female manage these resources. The management ability of either sex counts much for success. The measurement of managerial ability of women in managing the resources was done applying basic rules of management. The measurement of ability in managing resources was done by assigning 3, 2 and 1 for full, partial and little respectively.

Table 3. Managerial ability in management of resources.

Managerial ability	Full extent	Partially	Not at all	Mean Score	Gap (%)	Av.gap (%)
1. Planning						
a. Advance planning	21	13	16	2.10	30.00	38.00
b. Consideration of past experience	17	12	21	1.92	36.00	
c. Discussion with others	8	12	30	1.56	48.00	
2.Organizing						
a. Fixing priority	15	13	22	1.86	38.00	38.66
b. Action on priority	15	18	17	1.96	34.66	
C . Organization of materials before start	9	17	24	1.70	43.33	
3.Supervising						
a. Supervise work	8	11	31	1.54	48.66	47.33
b. Stress on completion in time	10	11	29	1.62	46.00	
4.Communication						
a. Tell about task in time	6	9	35	1.42	52.66	52.50
b. Discuss about work	7	12	31	1.52	49.33	
c. Listen to others	7	8	35	1.44	52.00	
d. Gather more information	4	8	38	1.32	56.00	
5.Coordinating						
a. Procurement of materials before starting	13	12	25	1.76	41.33	48.00
b. Understanding with all about resources	3	6	41	1.24	58.66	
c. Looking for cooperation	5	8	38	1.38	54.00	
6.Controlling						
a. Taking remedial step	10	12	28	1.64	45.33	45.55
b. Pointing out deviations	5	4	41	1.28	57.33	
c. Control over expenditure	16	17	17	1.98	34.00	
Average	-	-	-	1.53	49.00	

The gap analysis reveals that maximum gap is observed in case of communication followed co-ordination, supervision and control in order. However the gap in respect of planning and organizing is found to be 38% and 38.66% respectively.

4. Management of Social functions and community activities.

At present rural women is gaining momentum in rural development activities. Their participation in social functions and community activities is increasing day by day. These are, social functions like marriage, death ceremonies, village cultural functions,, village committee, development work, Self Help Group, common property management. To manage all these activities, management efficiency is a must. To what extent our rural women are capable of performing these activities depend on their managerial abilities.

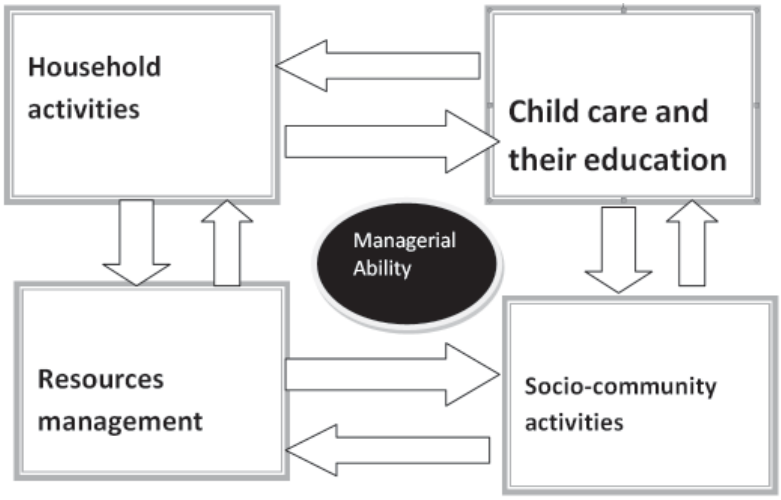
5. Variables and managerial ability:

There are a number of variables which influence managerial ability of women directly or indirectly. The relation between variables and managerial ability of sample is presented in table below.

Table 4. Correlation between personal traits and managerial ability

	Factors	'r' value
1.	Education of self	0.782
2.	Education of her parent	0.552
3.	Environment of past and present	0.470
4.	Amount of freedom availed	0.512
5.	Exposure to outside world	0.615
6.	Cooperation of partner and family member	0.321
7.	Community influence	0.285
8.	Exposure to media	0.372
9.	Socio-economic status of the family	0.563
10.	Age and experience	0.519

The variables mentioned in table have significant relationship with managerial ability of rural women. These factors directly or indirectly influence the managerial ability of women living in rural areas.



Conclusions:

The study with a randomized sample size of 50 rural women selected from Jatni block reveal managerial ability of women. There is considerable gap in management skill of the rural women with respect to house hold activities, care of children and their education, resource management and socio community activities. The study suggest for capacity building program for the rural women in a planned way.

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Entrepreneurial Behaviour of Rural Women Involved in Income Generation Activities Generated by SHGs

Meti. S. K., Jagrati B. D. and Sidram B. Y.

ABSTRACT

The study was conducted in Gulbarga and Yadgir Districts of Karnataka, India to know the entrepreneurial behaviour of the rural women who involved in the income generation activities. The ex-post-facto research design was used for the study. This design was considered appropriate because the phenomenon has already occurred. Total 120 respondents were selected by following the simple random sampling procedure. The interview schedule was prepared to ascertain the information from the respondents. The study revealed that, more than half of the respondents (50.83%) had medium level of innovativeness and majority of the respondent were had medium level of achievement motivation, information seeking ability, leadership ability and scientific orientation whereas, low decision making ability and risk orientation were observed. This study will help the planner, Government, Private agencies, SHGs, NGOs and developmental departments for formulation of programmes or schemes for the empowerment of rural area poor women.

Key words: Rural women, entrepreneurship, SHGs, income, behaviour

INTRODUCTION

The sustainable development of the country is incomplete without the women development or gender equality. Women are the half of the population of nation and are the major work force in agriculture and allied activities. Home is the fundamental unit of any civilization (Adavi Reddy, 2006) and the women are the important constituent of the home, society and the nation, women in the rural area had the burden of reducing

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nation poverty. The involvement/ participation of women in entrepreneurial or income generation activities is very important not only for social justice but also for poverty elevation of the country.

Women who participated in the income generation activities are to support the families economic condition are considered as the new engines for the growth and development of the country

The growth in the developing country due to the women participation in entrepreneurial or income generation activities has drawn the attention of world towards the empowerment of women by involving her in the income generation activities. The planers, development sectors, donors, policy makers, national and local governments, NGOs, SHGs, etc. Proving promoting and supporting to the rural women entrepreneur to start the income generation activities suitable to their local condition by providing training, information, technical support, input supply, market facility and even the credit facility to the interested rural women. Considering all the factors, the study was conducted in Gulbarga and Yadgir districts of Karnataka, India to know the "Entrepreneurial behaviour of rural women involved in income generation activities generated by SHGs" in the year 2011.

MATERIALS AND METHODS:

The ex-post-facto research design was used for the study. This design was considered appropriate because the phenomenon has already occurred. The research study was conducted in Gulbarga and Yadgir District of Karantaka, India. These two districts were purposively selected because they comes under the Hyderabad Karnatak region jurisdiction as this region is considered as backward region and the living standard of the families were low and to throw the light of women participation in income generation activities and also based on the convenience of the researcher to conduct the study. The rural women who had involved in income generation activities in Gulbarga and Yadgir district constituted the population for the study. In these two districts a list of farm women who had involved in income generation activities was prepared. From the list so prepared, 60 women from each district were selected by simple random sampling procedure thus the total sample for the study constituted 120 rural women. Based on the objective of the study an interview schedule was prepared with the help of experts in the field of Agricultural Extension Education, Agricultural economics, Agronomy and Psychology. The draft schedule prepared was pretested in non-sample area to locate the ambiguity, if any, in the questions included therein and then

necessary corrections were made in the final schedule. The final schedule was used to collect information from the respondents. The gathered information was analyzed by applying suitable statistical tools.

RESULTS AND DISCUSSION:

1. Personal characteristics of the rural women

1.1 Age:

The data presented in Table-1 reveals that, near to half (47.50 %) of the respondents were of middle age category followed by young (32.50 %) and old (20.00%) age category.

Age influenced the behaviour of an individual by exposing to varied situations. Therefore, the influences of age of the rural women were considered as essential aspect in this investigation. The probable reason for above results might be that, the study conducted on the women entrepreneurs or rural women involved with SHG activities and middle age group are more enthusiastic, innovative in nature, had more work experience and had more family responsibility than older and younger ones. The findings were in consonance with the research findings of Bhople (1995), Vijayakumar (1997) and Ravindra Kumar (2006).

1.2 Education:

Education plays a very crucial role in the social and economic development of women. More than sixty per cent of women were illiterates. The probable reason this might be due to that parent's traditional way of thinking, ignorance and lack of financial support. Another reason might be that the study area comes under Hyderabad Karnataka region and this region is known for under developed and neglected region in the Karnataka State. Whereas 23.33 per cent of rural women belonged to the category of middle school level education, followed by primary (10.00 %), High school (4.16 %) and PUC (1.16 %). For this, the main reason is that the women and children welfare development of the government are putting maximum efforts to provide education to all women. But due to the traditional way of thinking and inheritance law prevented the rural women to access the benefits of the department.

2. Entrepreneurial behaviour of the rural women

2.1 Overall entrepreneurial behaviour of the respondents:

The results presented in the Table 2 depicts that majority (44.17 %) of the respondents belongs to medium entrepreneurial behaviour category followed by low (33.33 %) and high (25.50 %) entrepreneurial behavioural category. Entrepreneurial behaviour possesses by the individual forces him to reach his destiny/aim. The reason for above result is majority of respondents were belonged

to medium age category, middle age people have strong motivation to achieve and attain a higher status, and their aspirations are comparatively higher which creates an urge to excel in life and As the respondents are earning members of the family and involved in different income generation activities they had some responsibilities which made them enhance their entrepreneurial behaviour. And also proper training and encouragement from the different SHGs, NGOs and Govt. Development department have contributed considerably in this regard.

2.2 Entrepreneurial Behaviour of Respondents

2.2.1. Innovativeness:

More than half of the respondents (50.83%) had medium level of innovativeness, while low innovativeness was exhibited by 27.50 per cent of the respondents, however high innovativeness was noticed among 16.67 per cent of farmers.

This could be due to inflation and small land holding, etc. each member of the family has to work and earn money to fulfil the needs of family this might have motivated the rural women to learn and adopt innovative methods of livelihood activities. The reason might be that the NGOs, SHGs and Government women development departments has disseminated and promoted entrepreneurial activities to empower the rural women and earn additional income.

The results were in line with the results of Suresh (2004), who found that majority of the respondents had medium level of innovativeness. However, the above findings were in contradiction with the findings of Vijaykumar (2001), that majority of the farmers had low innovativeness.

2.2.2. Achievement motivation

With regard to achievement motivation, the medium level of achievement motivation was observed with 41.67 per cent of the respondents followed by low (37.50%) and high (20.83%) achievement motivation.

Achievement motivation is the value associated with an individual, which drives him to excel or do well in an assignment he undertakes. Achievement motivation helps an individual to decide and complete the tasks in certain direction, which in turn helps him/her in achieving the desired results. Rural women in the study were found to have medium level of achievement motivation. This is reflected in their local opportunity to achieve higher economic performance and obtain sustainable livelihood.

The findings were in conformity with the results of the studies conducted by Chandrapaul (1998), Vijaykumar (2001) and Suresh (2004) who found that majority of the farmers had medium level of achievement motivation.

2.2.3. Risk orientation

The data in Table-3 depicted that less majority (48.33 %) belonged to low level of risk orientation category followed by high (31.67 %) and medium (20.00 %) risk orientation category.

The possible reason might be that, agriculture is the traditional occupation of the families, most of them depend on their land for their livelihood and they bond to their family business and unskilled about other entrepreneurial activities this might have promoted them not to take risk..

The findings were in consonance with the findings of Vijaykumar (2001). However, the findings are not in inconsonance with the findings of Subramanyam (2002), and Suresh (2004).

2.2.4. Information seeking behaviour

With regard to information seeking ability, majority of the rural women (45.83%) belonging to medium information seeking ability, followed by 34.17 and 20.00 per cent of the respondents belonged to low and high information seeking category.

The probable reason for majority of rural women to fall in medium and low information seeking behaviour might be due to their less education level. Another possible reason might be that, they may also feel that the information they have is enough to carry out home related operations.

The results were in line with the results of Vijaykumar (2001). However, contradiction with the results of Kumar (2001).

2.2.5. Decision taking ability

With regard to decision making ability 40.83 per cent of the respondents belonged to low decision making ability, whereas 31.67 and 27.50 per cent of farmers belongs to medium and high decision making ability.

Decision making in family, especially under Indian paternalistic family condition women are not involved in decision making process as male is dominant and he will take all the decisions related to family and even any decisions related to entrepreneurial activity this might be the reason for above findings. The 27.50 per cent of rural women belongs to the high decision making category, the probable reason might be that due increased awareness and education might had impact the rural women to take her own decisions regard home as well as about entrepreneurial activity to be carried out.

2.2.6. Leadership ability

With reference to leadership ability, majority of the respondents (41.67%) had medium leadership ability, followed by 36.67 and 21.67 per cent of them had low and high leadership ability respectively.

It might be due to that, ability to lead a group is individual capacity based on their position in the family and society.

The results were in line with the results of Suresh (2004) who found that majority of respondents had medium leadership ability. However, the above findings were in contradiction with the findings of Chandrapaul (1998) and Vijaykumar (2001), who reported the similar results.

2.2.7. Scientific orientation

The results in Table 3 revealed that majority of the respondents possessed medium level of scientific orientation (63.33%) followed by low (23.33%) and high (13.33%) scientific orientation category.

Scientific orientation is the orientation of rural women to adopt new technologies in a scientific way. To get higher profit and reduce the chances of loss for this need to adopt the scientific methods, this might be the reason for above findings.

The results were in consonance with the findings reported by Karpagam (2000) and Palaniswamy and Sriram (2001).

Conclusion:

It is concluded from the above results that, majority of the rural women falls under medium entrepreneurial behaviour category. Hence there is a need for development of entrepreneurial behaviour among the rural women by organising effective motivational training programmes and exposure visit to the successful entrepreneur. Therefore, the policy makers and administrators have to consider the importance of improvement of entrepreneur behaviour among rural women. They have to facilitate with entrepreneurial information and financial support to the rural women to adopt the suitable entrepreneurship for earning their sustainable income.

Table-1: Distribution of respondents according to their personal characteristics

n=120

Age	Frequency	Percentage
Young (18-30 years)	39	32.50
Middle (31-50 years)	57	47.50
Old (>50 years)	24	20.00
Education		
Illiterate	73	60.83
Primary (1-4th std)	12	10.00
Middle school (5-7th std)	28	23.33
High school 8-10th std)	5	4.16
PUC	2	1.16

Table 2 Distribution of respondents according to their overall entrepreneurial behaviour

n=120

Category	Frequency	Percentage
Low (Mean-0.425*SD)	40	33.33
Medium (Mean±0.425*SD)	53	44.17
High (Mean-0.425*SD)	27	22.50

Table 3 Distribution of respondents according to their individual entrepreneurial characteristics

n=120

Category	Frequency	Percentage
Innovativeness		
Low (Mean-0.425*SD)	33	27.50
Medium (Mean±0.425*SD)	61	50.83
High (Mean-0.425*SD)	20	16.67
Achievement motivation of the respondents		
Low (Mean-0.425*SD)	45	37.50
Medium (Mean±0.425*SD)	50	41.67
High (Mean+0.425*SD)	25	20.83
Risk orientation of the respondents		
Low (Mean-0.425*SD)	58	48.33
Medium (Mean±0.425*SD)	24	20.00
High (Mean+0.425*SD)	38	31.67
Information seeking ability of the respondents		
Low (Mean-0.425*SD)	41	34.17
Medium (Mean±0.425*SD)	55	45.83
High (Mean+0.425*SD)	24	20.00
Decision making ability of the respondents		
Low (Mean-0.425*SD)	49	40.83
Medium (Mean±0.425*SD)	38	31.67
High (Mean+0.425*SD)	33	27.50

Leadership ability of the respondents		
Low (Mean-0.425*SD)	26	21.67
Medium (Mean±0.425*SD)	50	41.67
High (Mean+0.425*SD)	44	36.67
Scientific Orientation of the respondents		
Low (Mean-0.425*SD)	28	23.33
Medium (Mean±0.425*SD)	76	63.33
High (Mean+0.425*SD)	16	13.33

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Perception and Knowledge of Vegetable Growers towards Protected Cultivation in Uttarakhand Hills

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ABSTRACT

Protected cultivation is a kind of cropping technique in which the microclimate around the plant body is so created as to simulate the ideal plant requirement partially or fully. These are beneficial to modify the natural environment for better plant growth. The major constraints with hill farmers are small and fragmented land holdings, poverty and lack of alternative means of livelihood. Difficult growing conditions such as extreme low temperature, steep slopes and soil erosion, affect crop productivity adversely, which further aggravate the problems. The present study showed that farmers are able to sell their produce to the nearby market along with their home consumption. Farmers have right perception apropos protected cultivation of off-season vegetables. Majority of the farmers has medium level of knowledge regarding protected cultivation of off-season vegetables

Key words: *knowledge,perception;vegetable growers;protected cultivation*

INTRODUCTION

Protected cultivation is a kind of cropping technique in which the microclimate around the plant body is so created as to simulate the ideal plant requirement partially or fully. There are various kinds of protected cultivation structures, such as hot beds, cold frames, polytunnel, glasshouse, greenhouse and polyhouse. These are beneficial to modify the natural environment for better plant growth. Off-season vegetable cultivation under protected environment is the best alternative to use the land and other resources more efficiently in hills, where availability of cultivable lands is a limiting factor for the vegetable growers (Singh & Asrey, 2005; Parmar & Choudhary, 2001).

These protected structures are made to provide protection to the growing crop from environmental conditions, such as high and low temperature, frost, hail, rain and snow, to which the plants are exposed in open fields. In hills, low cost green house or polyhouse, made of polythene sheets supported on bamboo are generally

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preferred by the farmers due to low initial investment. Majority of hill farmers are not in a position to invest in medium/high cost polyhouses.

Moreover, institutional credit support required is not so easy to get long wave thermal radiation in the infrared region, which gets trapped within the greenhouse which results in the temperature rise inside the greenhouse. The carbon dioxide released by plant at night is also trapped inside, which increases the rate of plant photosynthesis as well as maintain the temperature inside the greenhouse.

The major constraints with hill farmers are small and fragmented land holdings, poverty and lack of alternative means of livelihood. Difficult growing conditions such as extreme low temperature, steep slopes and soil erosion, affect crop productivity adversely, which further aggravate the problems. However, Himalayan region offer niche advantage of off-seasonality with respect to plains in vegetable cultivation (Singh *et al.*, 2002). This study aimed at gauging the perception and knowledge level of the vegetable growers apropos protected cultivation which has a vast economic potential for the vegetable growers.

MATERIALS AND METHODS

Locale of study: The present study was conducted in two districts, namely Almora and Nainital (hilly region only), of Uttaranchal state. Two villages each from Almora and Nainital were selected for this study.

Selection of respondents: Using random sampling technique, respondents were selected from the adopted villages under horticultural technology mission project. In total, 80 respondents were selected, out of which 30 from Darim, 20 from Pukhrad (Nainital district), 20 from Palauli and 10 from Daspad (Almora district), for this study.

Construction of research instrument, data collection and analysis: As research instrument a suitable interview schedule was prepared by consulting relevant literatures and experts in this field. The data was collected using the schedule through personal interview of the vegetable growers. The data was analyzed using descriptive statistics viz., frequency and percentage.

RESULTS AND DISCUSSION:

I. Current scenario of vegetable production at selected villages:

The analyzed data indicated that area under vegetable was highest in village Darim (0.50 ha) followed by Pukhrad (0.41 ha), Dhaspad (0.22 ha) and

Palauli (0.08 ha), respectively (Table 1). Percentage area under irrigation ranged from 62.0 to 90.0 but vegetable production was highest at Darim 110.40 q followed by Pukhrad 76.27 q, Dhaspad 47.68 q, respectively. However, production at Palauli was very less (7.02 q) which was mainly due to less area under vegetable crops. Farmers use only 5.0 - 10.0 percent of their vegetables for consumption and send 90 - 95 percent produce to the market for earning higher income. The reasons behind higher area and production of vegetables at Darim were well connectivity with the markets, availability of irrigation water and favourable attitude of the farmers towards vegetables growing, etc.

II. Perception of the farmers about protected cultivation of off-season vegetables:

The data depicted in Table 2 indicated that on overall basis, majority (82.50 %) of farmers expressed that polyhouse is beneficial to them. The response percentage varied from village to village viz., majority of the farmers at Darim (83.33 %), Pukhrad (80.00 %), Palauli (85.00 %) and Dhaspad (80.00 %), supported this view.

Regarding off-season vegetable cultivation, on overall basis, majority (80.00 %) of farmers said they can cultivate off-season vegetables within the polyhouse throughout the year. Also the majority farmers at Darim (86.67 %), Pukhrad (75.00 %), Palauli (80.00 %) and at Dhaspad (70.00 %) expressed similar opinion about the statement.

Most of the vegetable growers viz., at Darim (56.67%), Pukhrad (55.00 %), Palauli (65.00 %) accepted that polyhouse would give higher vegetable production, while maximum number of farmers of village Dhaspad (90.00 %) supported this view. The low percentage of response in Darim, Pukhrad and Palauli may be due to lack of exposure of the farmers about the benefits of the protected cultivation. Thus considerable proportions of the respondents are still to be convinced regarding production gains from this technology.

For polyhouse construction special kind of polythene sheet is required, on overall basis, majority (76.25 %) of the farmers supported this view. However, majority of the farmers at Darim (80.00 %), Pukhrad (60.00 %), Palauli (90.00 %) and at Dhaspad (70.00 %) were also aware with this fact. This perception indicates that since farmers are not aware of the exact specifications of the polysheets and other required materials, therefore, they desist to invest in this technology.

Regarding easiness to control disease inside the polyhouse, on overall basis, majority (67.50 %) supported the view. Farmers at Darim (73.33 %),

Pukhrad (65.00 %), Palauli (65.00 %) and at Dhaspad (60.00 %) also supported the statement.

Majority (80.00 %) of the respondents, on overall basis, favoured that water is essential for vegetable cultivation inside polyhouse. Village-wise responses showed that farmers at Darim (76.67 %), Pukhrad (70.00 %), Palauli (95.00 %) and at Dhaspad (80.00 %) have expressed the similar view. Moreover, to irrigate their vegetable crops in polyhouses they have expressed in open-ended questions that they need proper water storage and irrigation facilities which require investment and they could not afford.

III: Knowledge level of vegetable growers regarding protected cultivation of off-season vegetables

The analyzed data depicted in Table 3 indicated that on overall basis, majority (52.50 %) of the farmers have medium knowledge level, where as, only 21.25 percent farmers have high knowledge level regarding protected cultivation of off-season vegetables. Village-wise data showed that majority of the farmers at Darim (46.67 %), Pukhrad (55.00 %), Palauli (60.00 %) and at Dhaspad (50.00 %) have medium knowledge level regarding protected cultivation of off-season vegetables. On other hand, considerable proportions (30%) of the farmers of village Darim have high knowledge level and cultivating vegetable scientifically. This may be due to the well connectivity with the road and markets. Moreover, interventions of the different institutions also have considerable impact on knowledge and skill level of the vegetable growers.

Conclusion

Protected cultivation has several advantages especially in hills by using which farmers not only can produce quality vegetables throughout the year but also can get additional income by growing off-season vegetables. The above discussions showed that farmers are able to sell their produce to the nearby market along with their home consumption. Farmers have right perception apropos protected cultivation of off-season vegetables. Majority of the farmers has medium level of knowledge regarding protected cultivation of off-season vegetables. Therefore, farmers of the study area need training on the above subject so that they can increase their knowledge and skill for protected cultivation.

Table 1: Area, Production and Consumption of Vegetables.

S.N.	Village	Area under Vegetable (ha)	Percentage Irrigated Area	Vegetable Production (Quintal) Total Production	Total Consumption	Total Sale
1.	Darim	0.50	85.0	110.40	5.19	99.85
2.	Pukhrad	0.41	90.0	76.27	0.67	75.60
3.	Palauli	0.08	70.0	7.02	2.06	3.98
5.	Dhaspar	0.22	62.0	47.68	2.82	45.00

Table 3: Distribution of the respondents on the basis of Knowledge level regarding protected cultivation of off-season vegetables.

Category	**Darim (n = 30)**	
	Frequency	Percentage
Low (<2.2)	7	23.33
Medium (2.2-5.6)	14	46.67
High (>5.6)	9	30.00
Category	**Palauli (n = 20)**	
	Frequency	Percentage
Low (<1.37)	5	25.00
Medium (1.37-3.63)	12	60.00
High (>3.63)	3	15.00
Category	**Pukhrad (n = 20)**	
	Frequency	Percentage
Low (<4.25)	6	30.00
Medium (4.25-5.25)	11	55.00
High (>5.25)	3	15.00
Category	**Dhaspad (n = 10)**	
	Frequency	Percentage
Low (<5.30)	3	30.00
Medium (5.30-7.20)	5	50.00
High(>7.20)	2	20.00
Category	**Overall (N = 80)**	
	Frequency	Percentage
Low (<5.30)	21	26.25
Medium (5.30-7.20)	42	52.50
High(>7.20)	17	21.25

Table 2: Distribution of the respondents on the basis of their perception towards protected cultivation of off-season vegetables.

S.N.	Darim (n = 30)		Pukhrad (n =20)		Palauli (n = 20)		Dhaspad (n =10)		Overall (N = 80)	
	Y	N	Y	N	Y	N	Y	N	Y	N
1. Is polyhouse beneficial	25 (83.33)	5 (16.67)	16 (80.00)	4 (20.00)	17 (85.00)	3 (15.00)	8 (80.00)	2 (20.00)	66 (82.50)	14 (17.50)
2. Can you cultivate off-season vegetables in polyhouse throughout the year?	26 (86.67)	4 (13.33)	15 (75.00)	5 (25.00)	16 (80.00)	4 (20.00)	7 (70.00)	3 (30.00)	64 (80.00)	16 (20.00)
3. Is production of vegetable is more inside the polyhouse?	17 (56.67)	13 (54.33)	11 (55.00)	9 (45.00)	13 (65.00)	7 (35.00)	9 (90.00)	1 (10.00)	50 (62.50)	30 (37.50)
4. For preparing polyhouse special kind of polythene is required.	24 (80.00)	6 (20.00)	12 (60.00)	8 (40.00)	18 (90.00)	2 (10.00)	7 (70.00)	3 (30.00)	61 (76.25)	19 (23.75)
5. Is it easy to control disease inside the polyhouse?	22 (73.33)	8 (26.67)	13 (65.00)	7 (35.00)	13 (65.00)	7 (35.00)	6 (60.00)	4 (40.00)	54 (67.50)	26 (32.50)
6. Is water is essential for cultivating vegetable?	23 (76.67)	7 (23.33)	14 (70.00)	6 (30.00)	19 (95.00)	1 (5.00)	8 (80.00)	2 (20.00)	64 (80.00)	16 (20.00)

n = No. of respondents; Y = Yes, N = No

Figure in parentheses indicates the percentage

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Sources Utilization Pattern and Constraints Faced by Farmers Communication Sources Utilization Pattern and Constraints faced by Farm Women for getting Technical Information for Chickpea Cultivation

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ABSTRACT

The present investigation was carried out to study the technological communication sources utilization pattern by the farm women about recommended package of practices and to identify various constraints faced by the farm women in getting technical information regarding chickpea cultivation. A proportionate random sample of 65 farm women were selected purposively from Rewari district of Haryana as gram grown in this area at large scale. The pre-tested structured interview schedule was used to collect data personally. The collected data were processed, tabulated and analyzed by using frequency, percentage, mean weight score, rank, etc. Results revealed that among the localite sources, majority of the respondents used family members, neighbours and friends most frequently and also found fully satisfied in using these localite sources of information. None of the respondents were used cosmopolite source of information to acquire the information about chickpea cultivation. Whereas, all the cosmopolite source of information and television and radio as mass media sources were found somewhat satisfied by the respondents. It is also vivid that family member being localite source of information were found most useful source, whereas all the cosmopolite source were found somewhat/not useful and radio and television were perceived as useful mass media sources of information by the respondents . It was worth noting that the localite sources of information such as village leaders, Panchayat members, progressive farm men/women, traditional folk media and all of the cosmopolite and mass media sources were perceived as most needed by the respondents for repetition of information. Whereas, most serious constraints perceived by the respondents were social, physical and time in getting the technical information regarding chickpea cultivation .

KEY Words: *Communication sources, utilization Pattern, Constraints, Technical information, Farm women, Chickpea*

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INTRODUCTION

Utilization of improved agricultural technology by the farm women, to a large extent, depends upon the effective sources of information and channels to which they are generally exposed directly/indirectly.

Adoption of improved package of practices by the farm men/women varies from farmer to farmers depending upon their situation and availability of communication sources to them. Farm women are socially at low level in availing and using of technological information and mostly very few service of information are provided to them. They face numbers of constraints in getting technical information for chickpea cultivation.

The problems in agricultural development in India, is not the availability of improved agricultural technologies, but converting them into production accomplishments. Therefore, transfer of agricultural technology to the women farmers increase their production and productivity has been playing vital role in agricultural development in India. Among the various communication sources that play an important role in providing information support to the women farmers, interpersonal sources and channels are more important for every cultivation operations. The mass media are quick economical but lack crucial elements of empathy and feedback which are apparent in face to face situation. Adoption of improved package of practices by the farmers varies from farmer to farmer depending upon their situation and availability of Communication sources to them. Individuals tend to use different communication and media for obtaining the technology. Keeping this in view, the present investigation was carried out with following objectives: To study the technological communication sources utilization pattern by the farm women about recommended package of practices and to identify various constraints faced by the farm women in getting technical information regarding chickpea cultivation.

MATERIALS AND METHODS

The present study was conducted in Rewari district of Haryana and selected purposively as chickpea grown in large scale in this district. Rampuri and Jatusana villages were selected from Rewari Block. From two selected villages a proportionate sample of 65 farm women who were actively involved in farming was selected randomly. The extent of use, usefulness, satisfaction level and perceived need for repetition of communication source and constraints faced in getting technical information by the farm women were studied for selected crop.

Extent of use of Communication sources refers the frequency with which

rural women used various media for getting information. The frequency of contact with various sources/channels by the farming women was measured with the help of three-point interval scale. The three points were regularly, often and sometime and assigned scores of 3, 2, 1, respectively. Usefulness refers to the benefits derived from technological information source usage. The usefulness of using information sources by the respondents had been analyzed. The responses were obtained from the respondents in 4 categories as very useful, useful, somewhat useful and not useful, for which they were assigned scores 4, 3, 2, 1, respectively. Satisfaction in utilization of information sources refers to the satisfaction derived from technological Communication sources usage. The satisfaction in use was categorized in three categories viz., fully satisfied, partially satisfied and not satisfied and scores were assigned as 3 ,2,1, respectively. Perceived need for repetition of information refers to information from any technological information source, the respondents felt need for repetition of information from information source for the same crop cultivation. The responses were obtained from the respondents in three categories as most needed, needed and not needed and were assigned the scores of 3,2,1 respectively.

The structured interview schedule was developed and pre-tested on non sampled respondents. The interview was conducted personally by the investigator with the women farmers individually. The collected data were processed, tabulated and analyzed by using frequency, percentage, mean weight score, rank, etc.

RESULTS AND DISCUSSION

Communication source utilization pattern for chickpea cultivation

Technological Communication sources utilization pattern for gram crop cultivation operations were measured in terms of frequency of Communication sources utilization, usefulness of information source utilized, satisfaction level of the respondents and perceived need of respondents for repetition of different Communication sources.

Frequency of information source utilization for chickpea cultivation

It is observed from the Table 1 that friends got I rank with mean score 2.58, neighbours (II, MS 2.51) and family members (III, MS 2.49) which were utilized more frequently by the respondents. Whereas, frequently used source of information was relatives (IV, MS 2.11) and least frequently used sources were traditional folk media (VI, MS 1.55), *Panchayat* members (VII, MS 1.15) and village leaders (VIII, MS 1.11) as localite source of information.

Least frequently/not used cosmopolite sources of information were

contact farmers (I, MS 1.25), social workers (II, MS 1.15), banks (III, MS 1.12), exhibition, input agencies (IV, MS 1.11 each), university scientist (V, MS 1.06), cooperative societies personnel, ADO, subject matter specialist, kisan mela (VI, MS 1.03 each), NDRI scientist, District Extension Specialist, government agency personnel, Pantheist officers, farmer's training centers, krishi Upaj Mandi, pesticides/seed/fertilizers depot holders (VII, MS 1.00) by the farm women.

Radio (I, MS 2.03) and television (II, MS 1.95) were frequently used mass media sources by the farm women. Whereas cassette recorder (III, MS 1.63), newspaper (IV, MS 1.28), audio visual aid (V, MS 1.26), farm magazines/journals (VI, MS 1.20), telephone calls and internet (VII, MS 1.00 each) were least frequently/not used sources of information by farm women for seeking information regarding gram cultivation practices.

It can be concluded that the locality sources were utilized more frequently by the farm women and no cosmopolite source of information was used to acquire the information about gram cultivation. Radio and television were the frequently used mass media source of information for chickpea cultivation.

Similar conclusions were reported by Breath and entodia (1996), Dahiya *et al*. (1997) and Ghuaman and Kumari (1996),

Usefulness of information sources utilized by respondents for chickpea cultivation

It is clear from the data in Table 1 that the family members (I, MS 3.01) was found very useful locality source, whereas friends (II, MS 2.98), neighbours (III, MS 2.75), relative (IV, MS 2.57) were perceived as useful whereas progressive farm men/women (V, MS 1.98), traditional folk media (VI, MS 1.68), Panchayat members (VII, MS 1.17) and village leaders (VIII, MS 1.15) perceived as somewhat useful/not useful localite source of information by the farm women.

None of the respondents recorded cosmopolite source of information very useful and useful. Whereas other cosmopolite sources of information viz. social workers (I, MS 1.28), Krishi upoj Mandi (II, MS 1.15), exhibition (III, MS 1.14), pesticides/seed/ fertilizers depot holders (IV,MS 1.12), banks (V, MS 1.09), contact farmers (VI, MS 1.08 each), subject matter specialist, kisan mela (VII, MS 1.06 each), university scientist (VIII, MS 1.05), ADO (IX, MS 1.03), cooperative societies personnel (X, MS 1.02), NDRI scientist, District Extension Specialist, cooperative societies personnel, Panchayat officers, farmers training centers and input agencies (XI, MS 1.00 each) were perceived as somewhat/not useful to the farm women. This is due to the reason that cosmopolite sources are not up to

the reach of women easily so they can not use these source regularly.

Mass media sources of information i.e. radio (I, MS 2.54), television (II, MS 2.43) were found to be useful, whereas cassette recorders (III, MS 1.86), newspaper (IV, MS 1.40), farm magazines/journals (V, MS 1.34), audio-visual aids (VI, MS 1.32), telephone calls, internet (VII, MS 1.00) were found somewhat/not useful source of information by the respondents.

It can be concluded that family member being localite source of information were found most useful source, whereas all the cosmopolite source were found somewhat/not useful, radio and television were perceived as useful mass media sources of information for chickpea cultivation by the respondents.

Same conclusion arrived at by Parmeela *et al*. (2001).

Satisfaction level of the respondents regarding source utilization pattern for chickpea cultivation

The data presented in Table 1depict that friends (I, MS 2.52), family members and neighbors (II, MS 2.43 each) were found to be fully satisfied as localite source of information, whereas partially satisfied information source was found to be relative (III, MS 2.14) by the farm women and somewhat/not satisfied sources were found to be progressive farm women (IV, MS 1.58), traditional folk media (V, MS 1.55), Panchayat members (VI, MS 1.12) and village leaders (VII, MS 1.08), as localite source of information by the farm women.

It is also seen from the Table 3 that none of the respondents recorded full/partial satisfaction with cosmopolite sources of information. Whereas other cosmopolite sources viz., social workers (I, MS 1.17), contact farmers (II, MS 1.14), Krishi Upaj Mandi (III, MS 1.11), Kisan Mela, exhibition and input agencies (IV, MS 1.08 each), university scientist (V, IS 1.05), cooperative societies personnel, ADO, subject matter specialists (VI, MS 1.03 each), NDRI scientist, District Extension Specialist, government agency personnel, Panchayat officers, pesticides/seed/fertilizers depot holders (IV, MS 1.00 each) in order of preference were found somewhat/not satisfied cosmopolite source of information by the farm women. Mass media sources which are found to be partially satisfied by the farm women were radio and television (I, MS 1.88 each) whereas newspaper (II, MS 1.60), cassette recorder (III, MS 1.52), farm magazines/journals (IV, MS 1.18), telephone calls (V, MS 1.15), internet (VI, MS 1.00) were found to be somewhat/ not satisfied as mass media source of information by the respondents.

Thus, it can be inferred that friends, family members and neighbors were found to be fully satisfied as

localite source of information. Whereas, all the cosmopolite source of information were found somewhat satisfied by the respondents. But in case of mass media sources television and radio were found to be somewhat/not satisfied by the respondents for chickpea cultivation area.

Perceived need of the respondents for repetition of information source for chickpea cultivation

It is evident from the Table 1 that most of the respondents perceived more need for village leaders (I, MS 2.92), Panchayat members (II, MS 2.88), progressive farm men/women (III, MS 2.49), traditional folk media (IV, MS 2.45) for repetition of information among localite sources. The respondents were perceived need often for relatives (V, MS 1.98) as locality source for repetition of information. Whereas localite source perceived somewhat needed for repetition of information were family member (VI, MS 1.63), neighbours (VII, MS 1.52) and friends (VIII, MS 1.46) by the farm women. on the other hand, with regard to cosmopolite source all the cosmopolite sources were perceived most needed for repetition of information by the respondents, viz. NDRI scientist, cooperative societies personnel, government agency personnel, Pantheist officers, social workers, subject mater specialists, banks, pesticides/seed/ fertilizers depot holders, input agencies (I, MS 3.00 each), exhibition (II, MS 2.97), district extension specialists and Kisan Mela (III, MS 2.94 each), university scientists, ADO, Krishi Upaj Mandi (IV, MS 2.92) each, farmer's training centers (V, MS 2.88) and contact farmers (VI, MS 2.83), respectively.

Among the mass media source, the respondents perceived the information sources most needed were internet (I, MS 2.91), telephone calls (II, MS 2.85), audio-visual aid (III, MS 2.86), farm magazines/journals (IV, MS 2.80), newspapers (V, MS 2.71), radio (VI, MS 2.52) for further gaining/repetition of the information. Mass media source needed often by the respondents for attaining/ repetition of information were television (VII, MS 2.08) and cassette recorder (VIII, MS 1.97).

It was worth noting that village leaders, Panchyat members, progressive farm men/women, traditional folk media were perceived as most needed localite sources of information by the respondents, whereas all of the cosmopolite communication sources were perceived most needed by the respondents for repetition of information and same trend was observed in mass media sources for repetition of information in Rewari district.

Constraints perceived by the respondents in technical information for chickpea cultivation

The Table 2 incorporates the constraints perceived by the farm women in getting technical information such as time constraint, lack of competency of the resource person, lack of technical expertise, lack of confidence in the use of technology received, physical, social, economic constraints and language problem etc. An attempt was made in the present investigation to assess the constraints perceived by the farm women in the use of different information sources of information for selected crop cultivation operations.

The results reported in Table 2 indicate that most serious constraints perceived by the farm women were social (I, MS 2.72), physical (II, MS 2.66) and time constraints (III, MS 2.52), respectively. On the other hand, the respondents perceived serious constraints were lack of confidence (IV, MS 2.17), language problem (V, MS 2.07), economic constraints (VI, MS 1.97), lack of technical expertise (VII, MS 1.89) and lack of competency of the resource person in getting technical information from various technological information sources.

CONCLUSION

It can be concluded that among the localite sources, majority of the respondents used family members, neighbors and friends most frequently and also found fully satisfied in using these localite sources of information. Whereas, all the cosmopolite source of information were found somewhat satisfied by the respondents. But in case of mass media sources television and radio were found to be somewhat/not satisfied by the respondents. It is also vivid that family member being localite source of information were found most useful source, whereas all the cosmopolite source were found somewhat/not useful and radio and television were perceived as useful mass media sources of information by the respondents. It was worth noting that village leaders, Panchayat members, progressive farm men/women, traditional folk media were perceived as most needed localite sources of information by the respondents, whereas all of the cosmopolite and mass media communication sources were perceived most needed by the respondents for repetition of information and the most serious constraints perceived by the respondents were social, physical and time . It can be inferred that need based training for farm women may be organized using different mass media and cosmopolite communication sources to enhance their potentiality and to meet the challenges of the society and transfer the chickpea cultivation technology. Therefore, the provision of appropriate communication sources to the rural women to enable them to gain the needed knowledge and acquire skills, training is essential.

Table 1: Communication sources utilization pattern for chickpea cultivation

N=65

Sl.	Communication source/Information source	Frequency of use		Usefulness		Satisfaction level		Perceived need	
		Weighted Mean	Rank	Weighted Mean	Rank	Weighted Mean	Rank	Weighted Mean	Rank
A)	Localite								
1.	Family members	2.49	III	3.01	I	2.43	II	1.63	VI
2.	Neighbour	2.51	II	2.75	III	2.43	II	1.52	VII
3.	Progressive farm men/women	1.65	V	1.98	V	1.58	IV	2.49	III
4.	Relatives	2.11	IV	2.57	IV	2.14	III	1.98	V
5.	Friends	2.58	I	2.98	II	2.52	I	1.46	VIII
6.	Village leaders	1.11	VIII	1.15	VIII	1.08	VII	2.92	I
7.	Panchayat members	1.15	VII	1.17	VII	1.12	VI	2.88	II
8.	Traditional folk media	1.55	VI	1.68	VI	1.55	V	2.45	IV
B)	Cosmopolite								
1.	University scientist	1.06	V	1.05	VIII	1.05	V	2.92	IV
2.	NDRI scientist	1.00	VII	1.00	XI	1.00	VII	3.00	I
3.	District Extension Specialist	1.00	VII	1.00	XI	1.00	VII	2.94	III
4.	Co-operative societies personnel	1.03	VI	1.02	X	1.03	VI	3.00	I
5.	Government personnel agency	1.00	VII	1.00	XI	1.00	VII	3.00	I
6.	Panchayat officers	1.00	VII	1.00	XI	1.00	VII	3.00	I
7.	ADO	1.03	VI	1.03	IX	1.03	VI	2.92	IV
8.	Social workers	1.15	II	1.28	I	1.17	O	3.00	I
9.	Farmers' Training Centres	1.10	VII	1.00	XI	1.00	VII	2.88	V
10.	Subject matter specialists	1.03	VI	1.06	VII	1.03	VI	3.00	I
11.	Kisan Mela	1.03	VI	1.06	VII	1.08	IV	2.94	III
12.	Exhibition	1.11	IV	1.14	III	1.08	IV	2.97	III
13.	Banks	1.12	III	1.09	V	1.08	IV	3.00	I
14.	Contact farmers	1.25	I	1.08	VI	1.14	II	2.83	VI
15.	Krishi Upaj Mandi	1.00	VII	1.15	II	1.11	III	2.92	IV
16.	Pesticides/Seed/ Fertilizers depot holders	1.00	VII	1.12	IV	1.00	VII	3.00	I
17.	Input agencies	1.11	IV	1.00	XI	1.08	IV	3.00	I
C)	Mass Media								
1.	Radio	2.03	I	2.54	I	1.88	I	2.52	VI
2.	Television	1.95	II	2.43	II	1.88	I	2.08	VII
3.	Newspapers	1.28	IV	1.40	IV	1.60	II	2.71	V
4.	Farm magazines/ journals	1.20	VI	1.34	V	1.18	IV	2.80	IV
5.	Telephone calls	1.00	VII	1.00	VII	1.15	V	2.85	II
6.	Internet	1.00	VII	1.00	VII	1.00	VI	2.91	I
7.	Audio visual aid	1.21	V	1.32	VI	1.15	V	2.86	III
8.	Cassette recorder	1.63	III	1.86	III	1.52	III	1.97	VIII

***Maximum mean score is 3**

Low 1-1.66 Medium 1.67-2.32 High 2.33-3.00

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Adoption of Bajra Production Technology by the Farmers of Nagapur District of Rajasthan

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ABSTRACT

Bajra is the major food crop of Rajasthan. This millet can be grown in sandy soils under rainfed conditions and hence assumes importance in the arid region of Rajasthan. This food grain crop is also grown abundantly in the arid tracts of Gujarat, Uttar Pradesh, Karnataka, Maharashtra and Andhra Pradesh. It has multiple uses – besides being a staple food, its fodder is an important feed of the milch animals.The study was conducted in 8 FLD villages of three panchayat samities namely, Nagaur, Jayal and Mundwa panchayat samities of Nagaur district, adopted by the KVK, Nagaur were included and a sample of 100 beneficiary and 50 non-beneficiary farmers were selected purposively.It was found that the beneficiary farmers possessed maximum extent of adoption regarding "High yielding varieties" while least extent of adoption was observed about the practices ""Plant protection measures",of recommended bajra production technology. Whereas, the non-beneficiary farmers possessed maximum extent of adoption regarding "Sowing of seed and spacing", whereas, the least extent of adoption was found about "Harvesting" of recommended bajra production technology.,

Key words*- Adoption, Bajara, Beneficiary and non-beneficiary farmers*

INTRODUCTION

Bajra is the major food crop of Rajasthan. This millet can be grown in sandy soils under rainfed conditions and hence assumes importance in the arid region of Rajasthan. This food grain crop is also grown abundantly in the arid tracts of Gujarat, Uttar Pradesh, Karnataka, Maharashtra and Andhra Pradesh. It has multiple uses – besides being a staple food, its fodder is an important feed of the milch animals.

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The main objective of the Front Line Demonstration is to demonstrate newly released crop production and protection technologies and management practices at the farmers' field under different agro-climatic regions and farming situations. While demonstrating the technologies at the farmer's field, the scientists are required to study, the factors contributing to higher crop production, field constraints of production and thereby generating production factor and feed-back information. Front Line Demonstrations are conducted in a block of two to four hectares of land in order to have better impact of the demonstrated technologies on the farmers and field level extension functionaries.

Material and Methods

The study was conducted in 8 FLD villages of three panchayat samities namely, Nagaur, Jayal and Mundwa panchayat samities of Nagaur district, adopted by the KVK, Nagaur were included and a sample of 100 beneficiary and 50 non-beneficiary farmers were selected purposively.

RESULTS & DISCUSSION

Extent of adoption of recommended Bajra production technology by beneficiary farmers as compared to non-beneficiary farmers.

The data in Table 1 reveal that majority of beneficiary farmers (58 per cent) and non-beneficiary farmers (62 per cent) had medium extent of adoption, whereas 17 and 28 per cent and 25 and 10 per cent beneficiary farmers and non-beneficiary farmers were having low and high extent of adoption about recommended bajra production technology, respectively.

Table 1. Extent of adoption of recommended bajra production technology by beneficiary farmers as compared to non-beneficiary farmers.

S. NO.	EXTENT OF ADOPTION	Beneficiary (N=100)		non-beneficiary (N=50)	
		f	%	F	%
1.	LOW (SCORES BELOW 11.68)	17	17	14	28
2.	MEDIUM (SCORES BETWEEN 11.68 TO 23.60)	58	58	31	62
3.	HIGH (SCORES ABOVE 23.60)	25	25	5	10
	TOTAL	100	100	50	100

$\bar{X}$ = 17.64, σ = 05.96

Table 2. Practice wise extent of adoption of recommended Bajra production technology by beneficiary farmers as compared to non-beneficiary farmers.

Sl.	Package of practices	Beneficiary (N=100) MPS	Rank	Non-beneficiary (N=50) MPS	Rank
1	Soil and field preparation	70.00	IV	63.33	III
2	High yielding varieties	74.00	I	67.00	II
3	Sowing of seed and spacing	42.00	II	67.33	I
4	Seed treatment and soil	70.40	III	61.60	IV
5	manure and fertilizer management	63.71	VII	54.28	VII
6	Plant protection measures	64.16	VI	61.00	V
7	Weed management	57.50	IX	53.33	VIII
8	Harvesting	63.33	VIII	50.67	IX
9	Storage	66.50	V	57.00	VI
		rs=0.93**		t=6.9	

The data in table 2 depict that the highest extent of adoption (74.00 per cent) among beneficiary farmers was found about cultivation practice "High yielding varieties " of recommended bajra production technology, whereas the highest extent of adoption (67.33 per cent) among non-beneficiary farmers was found about practice "sowing of seed and spacing" of recommended bajra production technology.

The second highest extent of adoption (72.00 per cent) among beneficiary farmers was found about cultivation practice "sowing of seed and spacing" while, among non- beneficiary farmers, the second highest extent of adoption (67.00 per cent) was observed in practice ""High yielding varieties" of recommended bajra production technology.

The third rank was awarded to the extent of adoption (70.40 per cent) in practice "Seed treatment and soil" among beneficiary farmers while among non-beneficiary farmers, the third highest extent of adoption (63.33 per cent) was observed in practice "Soil and field preparation " of recommended bajra production technology. Fourth rank was assigned to the extent of adoption (70.00 per cent) among beneficiary farmers was

found about cultivation practice "Soil and field preparation" whereas, the extent of adoption (61.60 per cent) in non-beneficiary farmers was found about practice "Seed treatment and soil" of recommended bajra production technology. The fifth rank was awarded to the extent of adoption (66.50 per cent) in practice "Storage" among beneficiary while among non- beneficiaries farmers, the fifth highest extent of adoption (61.00. per cent) was observed in practice "Weed management" of recommended bajra production technology.

The sixth rank was awarded to the extent of adoption (64.16 per cent) among beneficiary farmers about cultivation practice "Weed management" while the extent of adoption (57.00 per cent) in non-beneficiary farmers was found about "Storage" of recommended bajra production technology.The seventh rank was assigned to the extent of adoption 63.71 and 54.28 per cent among beneficiary farmers and non-beneficiary farmers, respectively about practices "Weed management" of recommended bajra production technology.

The eighth rank was awarded to the extent of adoption (63.33 per cent) was in practice "Harvesting " among beneficiary farmers while among non-beneficiary, the eighth highest extent of adoption (53.33 per cent) was observed in practice "Plant protection measures " of recommended bajra production technology.

The lowest rank was assigned to the extent of adoption (57.50 per cent) was in practice "Plant protection measures " among beneficiary farmers while among non- beneficiary farmers, the lowest extent of adoption (50.67per cent) was observed in practice "Harvesting " of recommended bajra production technology.

The beneficiary farmers were having lesser extent of adoption in comparison to non- beneficiary farmers about all the cultivation practices of bajra. This might be due to the facts that the beneficiary farmers might have gained the more exposure and recommended their knowledge and skill through these training, demonstrations, field days which encouraged for higher extent of adoption lower down the extent of adoption.

Table 3. Comparison of extent of adoption between beneficiary and non-beneficiary farmers regarding recommended bajra production technology.

Sl.	*Package of practice*	Beneficiary (N=100)		Non-beneficiary (N=50)		'Z' Value
		Mean	SD	Mean	SD	
1	Soil and field preparation	2.10	0.69	0.95	0.81	9.67**
2	High yielding varieties	1.48	0.50	0.67	0.52	10.04**
3	Sowing of seed and spacing	2.16	0.68	1.01	0.65	10.93**
4	Seed treatment	3.52	1.37	1.54	1.44	8.91**
5	Manure and fertilizer management	4.66	1.42	1.90	1.42	12.29**
6	Weed management	3.85	1.03	1.83	1.02	12.46**
7	Plant protection measures	3.45	1.49	1.60	1.48	7.88**
8	Harvesting	1.90	0.98	0.76	0.89	7.70**
9	Storage	1.33	0.74	0.57	0.78	6.32**

** Significant at 1% level of significance

This calls for rejection of null hypothesis and acceptance of alternative hypothesis leading to conclusion that there is a significant difference in extent of adoption of beneficiary and non-beneficiary respondents regarding all nine practices of bajra cultivation. In other words, there is no similarity between the extent of adoption of beneficiary and non-beneficiary farmers regarding bajra production technology.

The higher extent of adoption of recommended bajra production technology among the beneficiary in comparison of non-beneficiary respondents, might be due to the reason that the FLDs were conducted on the fields of beneficiary farmers only by the KVK, Nagaur and they have also been provided necessary guidance, literature and training by the KVK scientists and SMS of ARSS, Nagaur. Whereas, the FLDs were not conducted on the field of non-beneficiary farmers and might have not been provided any type of guidance and training by the SMSs. This might have resulted in lower extent of adoption among non beneficiary farmers in comparison to beneficiary farmers.

The findings are in conformity with the findings of Badhala (2012) and Bhimawat & Gupta (2005)

CONCLUSION:

(i) It was found that the beneficiary farmers possessed maximum extent of adoption regarding "High yielding varieties" (74.00 per cent) and while

least extent of adoption was observed about "Plant protection measures" (57.50 per cent) of recommended bajra production technology.

(ii) It was also found that the non-beneficiary farmers possessed maximum extent of adoption regarding "sowing of seed and spacing" (67.33 per cent), and whereas, the least extent of adoption was found about "Harvesting" (50.67%) of recommended bajra production technology.

RECOMMENDATIONS:

(i) Front line demonstration programme may begin with wide publicity and may be conducted on all farmers fields instead of some selected farmers.

(ii) Pure quality seeds, quality fertilizers and pure low cost pesticides should be provided to the farmers.

(iii) The credit facility should be made available to the farmers on lower interest rate so that they can easily adopt the new technologies.

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Association Between Knowledge level of contact and non-contact farmers about the activities undertaken by the Krishi Vigyan Kendra

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ABSTRACT

The ICAR has established KVK all over country as an institutional innovation for application of agricultural science and technology on the farmers field with the help of a multidisciplinary team i.e. SMS. The KVK are playing strategic role in technology back stopping, knowledge management and advisory to the different stackholders like farmers, farm women, rural youths and extension personnel.

The study was conducted in Jhunjhunu district of Rajasthan. Jhunjhunu district comprises of total eight panchayat samities, out of which two panchayat samities namely Jhunjhunu and Chirawa were select randomly. A list of the villages each selected panchayat samiti, were obtained from the office of KVK. Out of these villages, three villages from each selected panchayat samiti were selected by using simple random sampling techniques

It was found that the knowledge level of contact farmers about various activities undertaken by KVK was associated significantly with their education, social participation, size of land holding, farm mechanization index, extension participation, training received, economic motivation. Further, it was observed that the occupation and size of family were associated non-significantly with the knowledge level of farmers.

Key words*-association, Knowledge, KVK, contact and non-contact*

INTRODUCTION

The ICAR has established KVK all over country as an institutional innovation for application of agricultural science and technology on the farmers field with the help of a multidisciplinary team i.e. SMS. The KVK are playing strategic role in technology back stopping, knowledge management and advisory to the different stackholders like farmers, farm women, rural youths and extension personnel. There are 42 Krishi Vigyan Kendra operating in 33 districts

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of Rajasthan. Thus, it is needless to highlight the importance of KVKs in quick and regular transfer of the technology among the farmers. It is therefore, high time that impact of each KVK must be scientifically assessed so that their activities may be appreciated. With this view in mind the present investigation "Impact of activities of Krishi Vigyan Kendra on contact vis-à-vis non-contact farmers in Jhunjhunu district of Rajasthan."

Materials & Methods

In Rajasthan, there are 42 KVKs, out of which, 21 KVKs are under the administrative control of Swami Keshwanand Rajasthan Agricultural University, Bikaner; 11 KVKs are under MPUAT, Udaipur; 6 KVKs are under NGOs, three KVKs are under the ICAR institutes and one KVK is under Rajasthan University of Veterinary and Animal Sciences, Bikaner. Out of these, KVK Jhunjhunu was selected purposely. The study was conducted in Jhunjhunu district of Rajasthan. Jhunjhunu district comprises of total eight panchayat samities, out of which two panchayat samities namely Jhunjhunu and Chirawa were select randomly. A list of the villages each selected panchayat samiti, were obtained from the office of KVK. Out of these villages, three villages from each selected panchayat samiti were selected by using simple random sampling techniques.

Reseults and Discussion

Association between selected independent variables with knowledge

This part deals with the extent of association between knowledge with selected independent variables. For this purpose spearmen's rank correlation coefficient was calculated. The results have been presented in Table 1 .

Table 1: Association between knowledge level and selected independent variables of contact and non-contact farmers about various activities undertaken by KVK

S.No.	Independent variable	Ranks correlation coefficient (r_s)	
		CFs (N=60)	NCFs (N=60)
1.	Occupation	0.152	0.143
2.	Education	0.760**	0.709**
3.	Social participation	0.680**	0.708**
4.	Size of land holding	0.709**	-0.005
5.	Size of family	0.109	-0.128
6.	Farm mechanization index	0.732**	-0.701**
7.	Extension participation	0.656**	0.181
8.	Training received	0.771**	0.013
9.	Economic motivation	0.755**	0.726**

** Significant at 0.01 level of probability

Table 2: Constraints faced by the respondents in getting technical information for chickpea cultivation

N=65

Sr. No.	Constraints	Weighted mean	Rank
1.	Time constraints	2.52	III
2.	Lack of competency of the resource person	1.80	VIII
3.	Lack of technical expertise	1.89	VII
4.	Lack of confidence	2.17	IV
5.	Physical constraints	2.66	II
6.	Social constraints	2.72	I
7.	Economic constraints	1.97	VI
8.	Language problem	2.07	V

*Maximum score is 3

Not so serious (low)	1 – 1.66
Serious (medium)	1.67 – 2.32
Most serious (high)	2.33 – 3.00

Occupation and knowledge

As the data shows in table indicated that occupation was associated non-significantly with the knowledge of CFs and NCFs about the activities undertaken by KVK at 1 per cent level of significance.

The stated null hypothesis ($H_{02.1}$) that "there is no association between the knowledge of CFs and NCFs about activities of KVK and their occupation" was therefore accepted.

This might be attributed due to the fact that the respondents had diverted attention towards other occupation resulting into dilution of efforts about various activities of KVK. They might have involved in other occupations partly or partially.

Education and knowledge

The data in table reveal that education was associated significantly with the knowledge of CFs and NCFs about activities of KVK at 1 per cent level of significance.

The stated null hypothesis ($H_{02.2}$) that "there is no association between the knowledge of CFs and NCFs about the activities of KVK and their education" was therefore rejected. It could be

inferred that knowledge had significant association with their education. This might be due to the fact that the educated farmers might have certainly learned more, understood more about the various activities of KVK due to their higher mental capabilities.

Social participation and knowledge

The data in table depict that there was a significant association between social participation and the knowledge of CFs and NCFs about the activities of KVK at 1 per cent level of significance.

The stated null hypothesis ($H_{02.3}$) that "there is no association between the knowledge level of CFs and NCFs about the activities of KVK and their social participation" was therefore, rejected.

It could be inferred that knowledge was associated significantly with the social participation of CFs and NCFs. This might be due to the fact that the CFs and NCFs had more exposure by virtue of being member in different rural institutions like gram panchayat, block panchayat, village cooperative society, Kishan Mandal et. leading to their active participation in social activities.

Size of land holding and knowledge

The data in table depict that size of land holding was associated significantly with the knowledge level of CFs about various activities undertaken by KVK at 1 per cent level of significance whereas, non-significant association was found in case of NCFs.

The null hypothesis ($H_{02.4}$) that "there is no association between the knowledge of CFs and NCFs about the activities of KVK and their size of land holding" was, therefore, rejected in case of CFs and accepted in case of NCFs.

Therefore, it might be concluded that size of land holding had influence on knowledge level of CFs. This might be due to the fact that small and marginal beneficiary farmers were more curious to acquire knowledge about various activities of KVK because of KVK had covered the most of small and marginal farmers whereas size of land holding had no influence on the acquisition of knowledge of NCFs about various activities of KVK because of the NCFs had large size of land holding which had not concentrated their attention towards acquisition of knowledge about the activities undertaken by KVK.

Size of family and knowledge

The data in table reveal that size of family was having non-significant association with the knowledge of CFs and NCFs at 1 per cent level of significance.

The stated null hypothesis ($H_{02.5}$) that "there is no association between the knowledge of the CFs and NCFs about the activities of KVK and their size of family" was therefore, accepted.

It means that the size of family had not exerted its influence on the knowledge level of CFs and NCFs about the activities of KVK. This might be due to the fact that although farming was such a business in which all the family members contributed equally but the decision power was vested with the head of family.

Farm mechanization index and knowledge

The data presented in table reveal that farm mechanization index was associated significantly with the knowledge of CFs and NCFs about the activities undertaken by KVK at 1 per cent level of significance.

The stated null hypothesis ($H_{02.6}$) that "there is no association between the knowledge of CFs and NCFs about the activities of KVK and their farm mechanization index" was therefore, rejected. It could be inferred that farm mechanization index was correlated with knowledge increases the farm mechanization index, the knowledge levels of CFs and NCFs. This might be due to the fact that use of machines for improvement of farm increases the farm production might have helped the respondents in acquisition of knowledge about the activities of KVK.

Extension participation and knowledge

The data in table depict that extension participation was associated significantly with the knowledge of CFs about various activities undertaken by KVK at 1 per cent level of significance whereas non-significant association was found in case of NCFs.

The stated null hypothesis ($H_{02.7}$) that "there is no association between the knowledge of CFs and NCFs about various activities of KVK and their extension participation" was therefore, rejected in case of CFs and accepted in case of NCFs.

Therefore, it may be stated that extension participation had influence the knowledge level of CFs. This might be due to the fact that beneficiary farmers had participated in different type of KVK activities and scientists provided them more information and facilities which might have helped the farmers to increase their knowledge about various activities undertaken by KVK, whereas extension participation had no influence in the acquisition of knowledge of NCFs about the activities of KVK. This might be due to that fact that NCFs had not benefited by KVK activities due to the non involvement of themselves.

Training received and knowledge

The data in table depict that training received was associated significantly with the knowledge level of CFs about various activities undertaken by KVK at 1 per cent level of significance whereas non-significant association was found in case of NCFs.

The stated null hypothesis ($H_{02.8}$) that "there is no association between the knowledge of CFs and NCFs about various activities of KVK and training received" was therefore, rejected in case of CFs and accepted in case of NCFs.

It could be inferred that the training received by CFs had significant association with knowledge. This might be due to the fact that those farmers who had received more training from various training programmes of KVKs and state Agriculture Department increased their knowledge. Whereas, NCFs had not received training and did not influence the acquisition of knowledge about the activities undertaken by KVK.

Economic motivation and knowledge

The data presented in table reveal that economic motivation was associated significantly with the knowledge of CFs and NCFs about various activities of KVK at 1 per cent level of significance.

The stated null hypothesis ($H_{02.9}$) that "there is no association between the knowledge of CFs and NCFs about the activities of KVK and their economic motivation" was therefore, rejected. It means economic motivation had influenced the knowledge level of CFs and NCFs.

This might be due to the fact that economic conditions of the farmers might have improved through the activities undertaken by KVK on farmers field and farmers might have gained more knowledge about new agricultural technology.

These findings are in accordance with the findings of Bairolia (2008) and Sharma & Sharma (2002)

CONCLUSIONS:

1. It was found that the knowledge level of contact farmers about various activities undertaken by KVK was associated significantly with their education, social participation, size of land holding, farm mechanization index, extension participation, training received, economic motivation. Further, it was observed that the occupation and size of family were associated non-significantly with the knowledge level of farmers.

2. In case of non-contact farmers it was found that the knowledge level of non-beneficiary farmers about various activities undertaken by KVK was associated significantly with their education, social participation, farm mechanization, economic motivation. Further, it was observed that the occupation, size of land holding, size of family, extension participation, training received, were associated non-significantly with the knowledge level of non-beneficiary farmers..

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Level of Awareness among the Rural Consumer of Balasore District

Vijayeta Priyadarshini

Abstract

In this LPG (liberalization, privatization and globalization) era, the rising communication facility and media penetration has opened up the rural market for the multinational companies and other producers. Quite a range of products and services are available to the rural consumers. In our country all the consumer protection laws are there, but the consumers are not really aware of them. Those who have the knowledge about the laws know that the process is very slow and has become cumbersome. Present study revealed that, the problems faced by rural consumers are mainly related to substandard and adulterated food items, faulty weighing and measuring, lack of safety and quality in appliances and equipment, unfair warranties and guarantees, imitation and sales gimmick, unreasonable pricing etc. Lack of choice is a major problem for the rural consumers as they do not have access to product variants. The dependence on the neighbourhood shops, who sell on credit, is adding to the problem. Therefore standardisation of products and availability of packed commodities will help the rural consumers to a large extent.

Key words*: rural consumer, awareness, problems*

Introduction:

Economic liberalization has created new avenues for rural markets. The rising communication facility and media penetration has opened up the rural market for the multinational companies and other producers. Quite a range of products and services are available to the rural consumers. However, due to ignorance and lack of information the rural consumer has to endure with many difficulties like sub-standard products and services, adulterated foods, short weights and

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measures, hazardous drugs, and exorbitant prices along with unfulfilled manufacturing guarantees and other issues. Today the rural consumers are being lured by advertisements which do not really educate the consumer nor provide information to them but only exploit his ignorance. The marketers resort to all sorts of tactics to cheat the consumers. Therefore, the consumer needs protection from unsafe products, poor quality of goods and services, high prices, unfair trade practices and misleading advertisements. The best way to empower the consumers is to educate them and enhance their awareness.

In our country all the consumer protection laws are there, but the consumers are not really aware of them. Those who have the knowledge about the laws know that the process is very slow and has become cumbersome.

Consumers not only pay their hard earned money, but also have to undergo the trauma of suffering from ill health and in some cases even risking their lives due to spurious products. It is quite common that the rural consumers are unaware about maximum retail price, expiry and manufacturing date and other information that is to be provided on the products due to ignorance and illiteracy

Materials and Methods

The study was designed to access the level of awareness along with the degree of knowledge about the various consumer rights among the rural consumers. It was conducted in Ambachuha and Pratappur village of Baliapal block, Balasore district. 120 respondents from both genders (Age group from 25 – 45 years) were randomly selected as the sample for the study. Personal visit and interview method were followed to collect the data. A structured interview schedule was prepared on the basis of which information was collected.

RESULT AND DISCUSSION

TABLE: 1 - SOCIO-ECONOMIC PROFILE OF THE RESPONDENTS

The socio-economic profile of the respondents covered different strata of the society. Out of the total respondents 60 % were male and 40 % were female. Considering the educational qualification, 16.6 % had no schooling, 40 % attended up to primary level, 11.6 % studied up to high school, 20.8 % went to college, 8.3% had graduation degree and 4.1% were post graduates. 31.6% of the respondents belonged to the age group of 25 – 35 years and rest 68.3% were within 35 – 45 years of age group.

Gender				Educational qualification												Age Group			
Male		Female		Illiterate		Primary		High School		College (+2)		Graduation		Post Graduation		25 – 35 Years		35 – 45 Years	
F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
72	60	48	40	20	16.666	48	40	14	11.666	25	20.833	10	8.333	5	4.166	38	31.666	82	68.333

N = 120

TABLE: 2 - OCCUPATION OF THE RESPONDENTS

Among the respondents 17.5% were farmers, 10.8% were self employed, government employee constituted 6.6%, housewives 30.83%.

Occupation	F	%
Farmer	21	17.5
Self employed	13	10.833
Government employee	8	6.666
Unemployed	15	12.5
House wife	37	30.83
Others	26	21.666
Total	**120**	**100**

N = 120

TABLE: 3 - INQUIRY INTO TERMS AND CONDITIONS BEFORE MAKING TRANSACTION

Necessary information about a product or service is essential for a reasonable decision making. The study showed that generally the consumers do not seek information regarding the products they intend to buy. 67.5% of the respondents did not ask about the product before making the transaction. 19.1% inquired about it sometimes and 13.3% of the respondent inquired frequently. They mostly depend upon the

local shopkeepers who were known to them, so out of faith and trust they did not think it necessary to make inquiries about the products before purchasing. The other factors related to illiteracy and ignorance.

Yes		Sometimes		No	
F	%	F	%	F	%
16	13.333	23	19.166	81	67.5

N = 120

TABLE: 4 - INFORMATION ABOUT THE PRODUCT AT THE TIME OF PURCHASE

In the rural areas many products were sold of inferior quality and products with names that were similar to big brands. It is mandatory to mention the MRP, weight, the contents, date of manufacture and the date of expiry on the labels of the packed products. The survey showed that most of the respondents did not bother to inquire about the content, the expiry date and other relevant information. It was found the 43.3% of the respondents always checked the available choices of a product during the time of purchase, while 26.6% did not do so. In regard to the checking of contents only 1.6% of the respondents checked that all the time and 94.1% did not think it important or necessary to check. The study showed though the respondents were not quality conscious but they sure were price conscious. 96.6% of the respondents always made inquiry about the price of the product. As far as the date of expiry is concerned most of the respondents were ignorant about it. Around 78% of the respondents never inquire about the date of expiry and 9.1% inquired about it.

	Always		Sometimes		No	
Available	F	%	F	%	F	%
choices	52	43.333	36	30	32	26.666
Contents	2	1.666	5	4.166	113	94.166
Price	116	96.666	2	1.666	2	1.666
Expiry date	11	9.166	18	15	94	78.333

N = 120

TABLE: 5 - INSISTENCE ON CASH MEMO WHILE PURCHASING DURABLES

While making a purchase it is essential for the consumer to take the cash memo as a proof of the transaction and for future needs. The cash memo is required for filing any complains about the product. However it has been observed that many times the consumers are not very sincere about taking the cash memo. Among the sample respondents 20.8% asked for cash memo all the times and those who did not were 46.6%.

Yes		Sometimes		No	
F	%	F	%	F	%
25	20.833	39	32.5	56	46.666

N = 120

TABLE: 6 - CONSUMER AWARENESS ABOUT MRP

MRP (maximum retail price) is printed almost all commodities, managed by the quality & products management of India. No merchant can sell any goods more than the printed MRP on the product. People are gradually become aware about it. According to the study 60.8% respondents were aware about the MRP and its purpose and rest 39.1% were ignorant about it. However many were unknown about the fact that they can make bargain on the MRP. On the contrary it was found out that sometimes the shop keepers charge more than the printed MRP in the name of refrigeration cost, transport cost etc.

Yes		No	
F	%	F	%
73	60.833	47	39.166

N = 120

TABLE: 7 - AWARENESS ABOUT STANDARD MARKS AND LABELS

Standardization mark is a mark or symbol given to a product, which meets certain standards with respect to the quality in terms of material used, methods of manufacture, labelling, packaging and performance. All the industrial standardization and industrial product certifications are governed by the Bureau of Indian Standards (BIS), the national standards organization of India, while standards for other areas (like agricultural products) are developed and managed by other governmental agencies. ISI is a standardization mark issued by the Bureau of Indian Standards (BIS) to certify that the products conform to the minimum quality standards. It covers electrical goods, cement, mineral water, paper, paints, biscuits, instant baby food, gas cylinders, soap and detergent powders etc. The study showed 42.5% respondents were aware about the ISI mark.

AGMARK Grading and Standardisation is a Central Sector Scheme with the objective of promotion of grading and standardisation of agricultural and allied commodities (Butter, ghee, vegetable oils, ground-spices, honey, wheat atta etc) under Agricultural Produce (Grading & Marking) Act, 1937. But unfortunately 93.3% of the respondents were not aware about Agmark and the products it covered.

FPO(Fruit Product Act) mark can be seen on the container or packages of processed food or agricultural produces like jam, jelly, sauce, fruit juice, pickles etc. 98.3% of the respondents were ignorant about FPO mark.

The BIS hallmark, a mark of conformity widely accepted by the consumer bestows the additional confidence to the consumer on the purity of gold jewellery. 45.8% respondents heard about the Hallmark but they did not fully understand its importance. As a result they prefer to purchase jewellery from their local traditional jeweller.

Standard Marks and Labels							
ISI		**Agmark**		**FPO**		**Hallmark**	
Yes(%)	No(%)	Yes(%)	No (%)	Yes(%)	No(%)	Yes(%)	No (%)
42.5	57.5	6.666	93.333	1.666	98.333	45.833	54.166

N = 120

TABLE: 8 - AWARENESS ABOUT THE CONSUMER PROTECTION ACT

The Consumer Protection Act, 1986 (68 of 1986) is a milestone in the history of socio-economic legislation in the country. It is one of the most progressive and comprehensive pieces of legislation enacted for the protection of consumers. The Consumer Protection Act, 1986 is a unique piece of legislation as it provides a separate three-tier quasi-judicial consumer dispute redressal machinery at the national, state and district level. The Act is intended to provide simple, speedy and inexpensive redressal of the consumers' grievances. In spite of wide publicity being given by the government, not many consumers in the rural areas are aware about this Act. Among the respondents only 14.16 % had limited knowledge about it and rest 85.83% were ignorant.

Response on awareness about CP Act			
Yes	**No**		
F	**%**	**F**	**%**
17	14.166	103	85.833

(N = 120)

TABLE: 9 - AWARENESS ABOUT GRIEVANCES REDRESSAL MECHANISM

To redress the grievances of the consumers the Consumer Protection Act, 1986 provides a three-tier mechanism at the district, state and the National levels. Within a specified time framework Consumers can file a complaint which is to be disposed of. Many of the respondents did not know about the redressal system. Even those who knew about the Act were to a large extent unaware about the main provisions of the Act. Among the 14.16% of the respondents who knew about the CPA, only 5% were about the redressal mechanism under the Act and the rest 95% did not know how that act works.

Awareness about Grievances Redressal Mechanism (Responses from respondents aware about CPA)			
Yes	**No**		
F	**%**	**F**	**%**
6	5	114	95

(N = 120)

CONCLUSION

As the rural market is growing in a rapid pace, the quantum of consumer grievances also increases simultaneously. The problems faced by rural consumers are mainly related to substandard and adulterated food items, faulty weighing and measuring, lack of safety and quality in appliances and equipment, unfair warranties and guarantees, imitation and sales gimmick, unreasonable pricing etc. Lack of choice is a major problem for the rural consumers as they do not have access to product variants. The dependence on the neighbourhood shops, who sell on credit, is adding to the problem. Therefore standardisation of products and availability of packed commodities will help the rural consumers to a large extent.

Consumer disputes redressal mechanism is set up under the Act at district, state and national level to provide simple and inexpensive quick redressal against consumer complaints. However, the three-tier consumer forums, set up under the Act are in urban areas. This makes it difficult for rural consumers to approach the forum. Hence unfortunately very few have availed this excellent mechanism due to lack of awareness and accessibility, particularly amongst rural and semi-urban populations.

The consumers in the rural areas lack awareness about various measures taken by the government in spite of the multimedia campaign. The government should launch awareness campaign with the involvement of local NGOs, schools and colleges. The Panchayati Raj Institutions should also be involved in the consumer movement and the Gram Sabha should play an active role in generating consumer awareness.

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Farmers' Adoption Behaviour in Relation to Chemical, Cultural & Biological Plant Protection - A study in Purba Medinipur District of West Bengal

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ABSTRACT

One of the major limiting factors against increasing agricultural production is crop damage by diseases, pests (insect or mammal) and weeds, either in field or after crop harvest. But adoption of that appropriate combined protection method at farmers' hostel is yet to reach the expected levels. Considering this adoption gap at field levels the present study has been conducted with the basic objective to explore the adoption levels of plant protection measures for weed, pests and diseases at field levels at Purba Medinipur district of West Bengal. The study revealed that farmers' adoption level is low regarding the adoption of protection practices and specially in case of chemical control of plant protection for all three domain of weed, pests and diseases. Education annual income social participation, media exposure characteristics of the respondents influenced their adoption behaviour.

***Keywords**: Plant Protection practice, mechanical, cultural, chemical control and bio control.*

MATERIALS & METHODS

The present study has been conducted in Cpontai and Ehra sub-division of Purba Midnapore district. All total 300 farmers were selected randomly from a cluster of five villages each from Contai II and Khejuri blocks under Contai sub-division and Egra-1 and Bhaganpur-1 blocks from Egra sub-divisions probability sampling theory in accordance with the proportion of farmers. The total respondents were 300 out of which 264 from marginal category; 28 Small category and 8 from Semi-medium category. Because of less numbers of respondents in Semi-medium followed by Small categories it was clubbed together for analyses and presentation of results.

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Adoption levels of respondents were traced in terms of cultural and chemical control of weed, insect pests and diseases for paddy, brinjal and bitter gourd. Structured and pre-tested interview schedule was administered for collection of primary source data. Suitable statistical analyses were done to reveal the results.

RESULTS & DISCUSSION

To study the extent of adoption of cultural and chemical plant protection practices for weed, diseases and insect pests were considered and analysed separately. Analyses were also done separately for 'Marginal', 'Small & Semi-medium' as well as total respondents.

It is observed from Table-1 that majority of the Marginal farmers had medium level of Index Value (51.52 %) followed by High level of Index Value (40.15%). In case of Small – Semi Medium category, 69% belonged to High Index Value followed by Medium (30.56%). Average Index values were found 41 and 25.69 for Marginal and Small-Semi Medium categories. When both the categories were taken together it was found that 49% was grouped under Medium Index Value followed by 43.67% in High Index Value class. The findings revealed that most of the farmers of the study areas were primarily depend on cultural practices of weed control.

Table 1. Extent of Adoption of Cultural Weed Control Practices

Category of	Marginal		Small & Semi-Medium		Total		Statistics	
Extent of adoption ($I.V_{W1}$)	No	%	No	%	No	%	Range	0-75
0-25 (High)	106	40.15	**25**	**69.44**	131	43.67	Mean	38.667
26-50 (Medium)	**136**	**51.52**	11	30.56	147	49	S Error	1.070
51-75 (Semi-Medium)	22	8.33	0	0	0	0	Median	50
76-100 (Low)	0	0	0	0	0	0	Mode	50
Total	264	100	36	100	300	100	Kurtosis	-0.267
AVERAGE	**41 (M)**		**25.69 (M)**		**39.16 (M)**		Skewness	-0.137
Questions-5	**Type-yes/no**		**Scale-1/0**					

Table 2 represents the extent of Chemical Weed Control Practices adopted by the respondents. They were asked with seven questions related with the use of different types of herbicides like pre-emergence, post-emergence, selective, non-selective, calibration of sprayer, measuring acidity etc. It is observed that most of the respondents have not been adopted chemical weed control practices.

Table. 2. Extent of Adoption of Chemical Weed Control Measures

Category of Respondents	Marginal		Small & Semi-Medium		Total	
Extent of adoption ($I.V_{W2}$)	No	%	No	%	No	%
Applying herbicide	13	4.94	2	5.56	15	5
Applying no herbicide	**251**	**95.06**	**34**	**94.44**	**285**	**95**
Total	264	100	36	100	300	100
Question-7	**Type-yes/no ,open**		**Scale-2point**	**Score-1/0**		

Table 3. Extent of Adoption of Mechanical, Cultural and Biological Control Practices

Table 3 depicts the combined results of extent of Mechanical, Cultural and Biological pest and disease control Practices for paddy, brinjal and bitter gourd. Fifth six questions were asked out of 8 questions related with biological control.

Category of Respondents	Marginal		Small & Semi-Medium		Total		Statistics	
adoption category 70.31-95.31	($I.V_{Com}$)	No	%	No	%	No	%	Range
0-25 (High)	0	0	0	0	0	0	Mean	84.954
26-50 (Medium)	0	0	0	0	0	0	S Error	0.349
51-75 (Semi-Med)	25	9.47	8	22.22	33	11	Median	85.94
76-100 (Low)	**239**	**90.53**	**28**	**77.78**	**267**	**89**	Mode	92.19
Total	264	100	36	100	300	100	Kurtosis	-0.901
AVERAGE	**85.64**		**79.56**		**84.91**		Skewness	-0.437
Question-64	**Type-yes/no**		**Scale-2point**		**Score-1/0**			

It is found from the table that majority of the farmers of all the category, i.e. Marginal or Small-Semi-medium belong to low level of adoption regarding cultural, mechanical and biological disease and pest control practices. The respondents adopt common mechanical or cultural practices for disease and pests and could not be separated.

Table 4 separately represents the extent of chemical insect pest control measures by the respondents for both farming categories. The respondents The results amply showed that respondents of all the farmers' categories belong to Low level of adoption regarding chemical insect pest control practices.

Table 4. Extent of Adoption of Chemical Insect Pest Control Practices

Category of Respondents	Marginal		Small & Semi-Medium		Total		Statistics	
adoption index($I.V_{ICH}$) 100	No	%	No	%	No	%	Range	33.33-
0-25 (High)	0	0	0	0	0	0	Mean	72.96
26-50 (Medium)	26	9.85	4	11.11	30	10	S Error	0.439
51-75 (Semi-Medium)	89	33.71	7	19.44	96	32	Median	77.78
76-100 (Low)	**149**	**56.44**	**25**	**69.44**	**174**	**58**	Mode	77.78
Total	264	100	36	100	300	100	Kurtosis	-1.074
AVERAGE	**73**	**72.68**	**72.96**	Skewness 1.3431				
Question-5	**Type- open, MCQ**		**Scale-2point**		**Scoring- 1/0**			

Table-5 revealed the extent of adoption of chemical disease control practices adopted by the respondents. The table revealed that irrespective of the farming communities, majority of the respondents belong to the low level of adoption of chemical disease control practices,

5. Extent of Adoption of Chemical Disease Control Practices

Category of Respondents	Marginal		Small & Semi-Medium		Total		Statistics	
adoption index ($I.V_{DCH}$)	No	%	No	%	No	%	Range	50-100
0-25 (High)	0	0	0	0	0	0	Mean	83.313
26-50 (Medium)	0	0	0	0	0	0	S Error	0.521
51-75 (Semi-Medium)	28	10.60	4	11.11	32	10.67	Median	81.25
76-100 (Low)	**236**	**89.39**	**30**	**83.33**	**266**	**88.67**	Mode	81.25
Total	264	100	36	100	300	100	Kurtosis	0.441
AVERAGE	**83.74**		**80.03**		**83.29**		Skewness	-0.062
Question-5	**Type- open, MCQ**		**Scale-2point**		**Scoring- 1/0**			

Table 6 represents the comparative results of Extent of Adoption of Chemical Disease Control Practices adopted by the Respondents. It is it can be observed that majority of the respondents did not rely on chemical control of weeds. Beside, 72.96% and 83.29% respectively for Marginal and Small-Semi-medium categories were found to be dependant basically on chemical control of insect's pests and diseases.

Table 6.Comparison between Adoption Level of Mechanical and Chemical Control Practices For Disease, Insect Pest & Weed Adopted By the Respondents

Type of control	For weed	For insect	For disease
Mechanical, Cultural, Biological control	**39.16**	**84.91**	
Chemical control	Negligible	**72.96**	**83.29**

Table 7. Correlation between Different Socio Economic Attributes of Respondents and Their Adoption Behaviour

	Age	Family size	Education	Family Edn.	House type	Land holding	Productivity	Annual income	Farm Implement	Social participation	Mass media contact	Participation in extn. activity	Cosmopoliteness	Personal localite contact	Economic Motivation	Environmental Consciousness	Plant Protection Surveillance (Freq)
Cult. weed control	-0.073	0.027	0.090	0.026	0.145*	0.329**	0.299**	0.353**	-0.056	0.207*	0.255*	0.149*	0.143*	0.025	0.119*	0.073	0.172*
Cult. pest & disease control	0.069	0.013	0.366**	0.138*	0.081	0.547**	0.398**	0.591**	0.220*	0.329**	0.296**	0.328**	0.279**	0.126*	0.078	0.050	0.225*
Chem. pest control	-0.095	0.040	0.365**	0.107	0.039	0.320**	0.551**	0.393**	0.181*	0.305**	0.182*	0.369**	0.311*	0.102	0.074	0.059	0.209*
Chem. disease control	-0.023	0.031	0.248*	0.136*	0.060	0.348**	0.343**	0.412**	0.270**	0.280**	0.232*	0.322**	0.171	0.060	0.038	0.028	0.164*

*significant at 5% level **significant at 1% level

Table 7 represents the correlation between different socio-economic variables of the respondents with their adoption behaviour regarding plant protection measures. It is found in case of cultural weed control that except age, family size, education family education and environmental consciousness; all other socio-economic variables were positively and significantly related with

their adoption behaviour. Because of very few observations, analysis for chemical weed control was not done. In case of cultural control of pests and diseases, except age, family size, house type, economic motivation and environmental consciousness all were positively and significantly associated with respondents' adoption behaviour. In case of chemical pest control, except age, family size, family education, personal localite contact, economic motivation and environmental consciousness; all other socio-economic variables had positive and significant association with their adoption. Lastly, in case of chemical diseases control, except age, family size, house type, cosmopoliteness, personal localite contact economic motivation and environmental consciousness; other variables were positively and significantly associated with their adoption pattern.

Interestingly, land holding, productivity and annual income had significant correlation to the adoption behaviour of all types of control practices. The result profoundly revealed that, those who possess higher level of productivity are more accurate in adoption of plant protection practices. Or, in other way, more accuracy in plant protection practice will give more income and productivity. Beside those, education, cosmopoliteness, participation in extension activities also played a significant role in adoption behaviour of respondents.

Further, to ascertain the contribution of different socio-economic variables of the respondents on their overall extent of adoption of chemical control practices, step-wise regression analysis was done. Out of a primary set of 23 independent variables 8 were retained by forward selection method. Table 8 represents the results of the regression. It can be found that all the retained variables had significant positive contribution to respondents' overall adoption of chemical plant protection measures. In other words, education level of farmer, productivity, annual income, social participation, media exposure, personal localite contact and plant protection surveillance had significant contribution on level of adoption of chemical plant protection practices by the farmers.

Table 8.Contribution Socio Economic Variables To The Adoption Level of Farmers Regarding Chemical Plant Protection Measures.

Model	Unstandardized Coefficients		Standardized	t	Sig.
	B	Std. error	Beta		
(Constant)	33.466	19.937		1.679	.094
x1-Age	-.254	.122	-.110	-2.080	*.038
X2-Education	4.970	1.756	.203	2.831	**.005
x7-Productivity	.056	.025	.141	2.257	*.025
x8- Annual Income	.306	.066	.367	4.604	**.000
x10- Social Participation	.464	.151	.189	3.073	**.002
x11-Media Exposure	.180	.095	.118	1.899	*.059
x18-Personal Localite	.238	.077	.171	3.076	**.002
x22-Plant Protection Surveillance	.195	.078	.138	2.487	*.013

*significant at 5% level **significant at 1% level

R=0.624 R^2=0.689 Adjusted R2=0.697 Standard Error of the estimate =5.9297

CONCLUSION

When summarising the present study it was found that respondents largely dependent on cultural weed control and very few used herbicides. Very few biological control was adopted by the respondent. Respondents largely depend on chemical measures to control insect pests and diseases. Most of the socio-economic variables were positively and significantly correlated with the adoption of control measures. These were, respondents' education, family education status, land holding, productivity, annual income, extent of social participation, extent of mass media contact, extent of participation in extension activities, cosmopoliteness and extent of plant protection surveillance. Further it was found that education level of farmer, productivity, annual income, social participation, media exposure, personal localite contact and plant protection surveillance had significant contribution on level of adoption of chemical plant protection practices by the farmers.

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Role of Self Help Groups in changing scenario of rural livelihood System

Anjali Ray

ABSTRACT

Self Help Group is gaining momentum as the effective channel for empowerment and development of rural women. Increasing importance and assistance are making them more purposeful. The socio-economic back ground of the members significantly influencing their efficiency and performance. The credit management and dealing with defaulting members are in increasing trend which need attention of all concern. The SHG can continue to be effective rural based organization provided cohesiveness among the members is maintained and income generating schemes are introduced based on market demand.

***Key words**: Credit, adoption, repayment, attitude, credit defaulter*

INTRODUCTION:

Development of rural livelihood system needs scientific innovation. Scientific innovations are induced through different channels to rural participants for acceptance and adoption. Different channels are development agencies, extension system, mass media, development departments like agriculture, horticulture, animal husbandry, fisheries etc. But all these channels do not have equal effectiveness. This is evidenced by the fact that that still people live under poverty line. The concern is that why we have not achieved poverty free society in spite of so many efforts by Government and Non Government agencies. Some social reformers as well as extension experts argue that our technology is not reaching target group nor do the target population participate actively to translate technology into

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reality. To answer these questions, the SHGs have came forwards in rural areas. The members of SHG are now planners and executives of their own program as a result; the success of SHG is spreading very fast. The government agencies are now aiding to the SHGs to take development forward so that poverty could be eliminated to an expected level. Role of Self Help Groups in changing scenario of rural livelihood System.

Development of rural livelihood system needs scientific innovation. Scientific innovations are induced through different channels to rural participants for acceptance and adoption. Different channels are, development agencies, extension system, mass media, development departments like agriculture, horticulture, animal husbandry, fisheries etc. But all these channels do not have equal effectiveness. This is evidenced by the fact that that still people live under poverty line. The concern is that why we have not achieved poverty free society in spite of so many efforts by Government and Non Government agencies. Some social reformers as well as extension experts argue that our technology is not reaching target group nor do the target population participate actively to translate technology into reality. To answer these questions, the SHGs have came forwards in rural areas. The members of SHG are now planners and executives of their own program as a result; the success of SHG is spreading very fast. The government agencies are now aiding to the SHGs to take development forward so that poverty could be eliminated to an expected level.

Self Help Groups is defined as a voluntary group valuing personal interaction and mutual aid as a means of altering or ameliorating the problems preserved as alterable, pressing and personal by most of its participants.

Self Help Groups are voluntary associations of people formed to attain a collective goal. People who are homogeneous with respect to social background, caste or traditional occupation come together for a common cause to raise and manage resources for the benefits of the group members.

NABARD (1995) defined Self Help Groups a homogeneous group of rural poor voluntary governed to save whatever the amount they can conveniently save out of their earnings and mutually to contribute to a common fund to lend to the members for making their production and emergency consumption credit needs.

The international network for mutual help centers has developed working definition of Self Help Groups as self help or mutual support is a process where in people who share common experiences, situation or problems can offer each other a unique perspective that is not available from those who have

not shared these experiences, Self Help Groups are run by and for group members.

The SHG with small composition keeping harmony among members attending cohesiveness have proved to an effective channel for development. The rural women when learned the skill of earning money at home to meet their economic deficiencies exhibited sustainable interest. Most of the villages in Odisha. The SHGs are operating smoothly bringing economic benefits to its members. Keeping this consideration in view, a study was undertaken in coastal belt of the state with the following objectives.

Objectives:

The study is design to examine impact of SHG in general and the followings in particulars.

1. To determine socio economic status of the members SHG under study and their relationship with level of achievement.

2. To find out credit operation at SHG level and its management system.

3. To find out impact of SHG in terms of economic parameters like Occupation, engagement, income, saving and asset formation.

Materials and Methods

The study was design to investigate into the operation of SHG and its impact on its members in terms of economic changes. For the purpose as much as 85 members of 85 SHGs were selected from four blocks namely, Kendrapada(29), Marshaghai(21), Pattamundai(18) and Derabish(17) of coastal belt of the state. The SHGs were selected as per advice of the concerned block officials on the criteria of establishment not less than five years and progress in taking up of different activities. The sample so selected were interviewed through a structured interview scheduled developed based on objectives.

Results and Discussion:

1. Socio-Economic Profile and level of achievements:

Socio-Economic profile constitute of a number of variables. As per relevance of the study as much as seven important socio-economic variables were finally selected and the findings in this context are presented below.

(1).Sex: The study selected only women SHGs and all the respondents were females. On average the membership of the SHG varied from 10 to 12.All the members belonged to same village are were homogeneous in social setting.

(2).Age: Age of members of SHG is an important factor because of interest and enthusiasm. The age of the sample was examined with a view to ascertain their activities whether has been influenced by the age factor.

Table-1 Distribution of sample on age category

Age group(Years) Derabish	Kendrapada Total	Marshaghai %		Pattamundai		
1.Upto 35	10	07	06	05	28	32.94
2.36-45	14	08	10	09	41	48.23
3.46-55	03	04	02	03	12	14.11
4.Above 55	02	02	00	00	04	4.72
Total	29	21	18	17	85	100.00

Results reveal that maximum women within age group of up to 45 years join in SHG. Beyond age of 55 years their participation in SHG declines. In other words young women are now coming forward to join SHG groups in rural areas.

(3)Caste Composition: – The SHGs are formed normally taking homogeneous members in terms of caste, education and status. The caste structure continues to be influencing group dynamics in structure, activities and total process of functioning of SHGs. The distribution of sample on caste category is presented in table.

Table-2 Distribution of sample on caste category.

1.Caste	Kendrapada	Marshaghai	Patamundai	Derabish	Total	%
2.SC	07	03	05	00	15	17.64
3.OBC	07	07	02	12	28	32.94
4.General	15	11	11	05	42	49.42
Total	29	21	18	17	85	100.00

The caste composition reveals that majority of the SHG members (49.42%) of the sample of selected SHG belongs to general caste followed by 32.94% of OBC and 17.64% SC. The absence of ST women is due to non existence of ST families in the area under study. It is observed that women of general caste are taking more interest to form SHGs.

(4).Educational background: With advance of science and technology, the use of knowledge is gaining momentum and is more linked with income generation. The hypothesis is that higher the educational level greater is achievement of individuals. In finding out distribution of the sample on educational category the following results are obtained.

Table3. Educational back ground of the sample

Educational qualification	Kendrapada	Marshaghai	Patamundai	Derabish	Total	%
1.Illiterate	04	04	03	01	12	14.11
2.Primary	07	03	05	01	16	18.82
3.Middle school	06	02	02	00	10	11.76
4.High school	11	08	07	13	39	45.88
5.Above high school	01	04	01	02	08	9.43
Total	29	21	18	17	85	100.00

Of the sample presented in table above as much as 45.88% are educated up to high school standard 18.82% up to primary level 11.76% up to middle school standard. However, 9.43% has education beyond high school. The sample contains illiterate members up to 14.11%.It clearly shows that educated women are gradually entering into fold of SHG in rural Odisha.

(5). Marital Status-All the members of all 85 SHGs are found to be married. Married women are coming forward to join in SHG may be to earn and utilize their leisure time profitably.

(6).Family size –Size of family and income are closely associated. In rural area the prosperity of family depends on its size, strength and cohesiveness. At present there is a trend of small family consisting of 2 to 3 members only.

Table-4 Distribution of sample on family size

Family size	Kendrapada	Marshaghai	Patamundai	Derabish	Total	%
1.Up to 2 members	01	00	00	00	01	1.18
2.3-5 members	13	11	10	11	45	52.94
3.6 and more members	15	10	08	06	39	45.88
Total	29	21	18	17	85	100.00

Out of total sample as much as 52.94% have the family size within 3-5 members and about 45.88% have more than 6 members in their families where as hardly one of them have the family size up to 2 members only. In majority cases the Family size remains up to five members only.

(7) Family occupation: Family occupation and economic activities are interring

related in rural area. Now there is trend to diversify the occupation for greater financial benefits. The distribution of sample on occupational composition reveals the following result.

Table-5 Distribution of sample on major family occupation

Family occupation	Kendrapada	Marsaghai	Patamundai	Derabish	Total	%
1.Farming	20	12	11	10	53	62.35
2.Business	05	02	00	03	10	11.76
3.Service	01	00	03	02	06	7.05
4.Wage earning	03	07	04	02	16	18.83
Total	29	21	18	17	85	100.00

Occupationally the sample belong to farming community(62.35%) followed by wage earning 18.83%, business 11.76% and service to the extent of 7.06%. Most of the SHG members have farming as family occupation or wage earning to maintain the family as village level. The inference is that the women belonging to farming and wage earning occupation are good adopters of SHG concepts and therefore taking more interest to form the SHGs.

Within the scope of the study seven important socio-economic parameters were examines. Further the socio-economic variables were correlated with their level of achievement in SHGs. The level of achievement was measured in terms of business of the SHG, extent of repayment of loan, individual benefit, number of days remain engaged in SHG work and personal satisfaction. The correlation value is presented in table given below.

Table 6. Correlation between socio-economic parameters and level of achievement

Socio-Economic variables	Correlation value 'r' value
1. Age of the member	0. 462
2. Marital status	0.643
3.Caste	0.215
4. Education	0.761
5.Family size	0.487
6.Family occupation	0.182

The correlation value indicates that family occupation and caste hardly influence achievement of members of SHG, while factors like education, marital status family size, and age significantly expert influence on achievement of the SHG members. It is because more the economic pressure greater is the habit of seeking source of income and this aspect is taken care by SHG at village level.

2. Credit and its management-

Credit is the core issue in management of SHG. Taking loan, making profitable use of it and repaying back to funding agencies in time are the essentially good characteristics of well managed SHGs. Within the scope of the study, the variables like, s0ources of funding, availing of credit, amount, repayment and action taken in defaulter cases were studied in detail.

(1) Source of funding-The SHGs are formal bodies regulated with certain rules and regulations. For development SHGs need financial support. There are mainly two sources of funding in SHGs. One is the contribution of individual members and second is to obtain loan from banks, cooperatives and other financial institutions. With regard to funding sources, the following information were obtained for a period of last three years.

Table-7.Sources of funding of SHG for the period of 2009-2010,to 2011-2012

Sources	Amount(Lakh)	%
(1)Members contribution	8.45	27.99
(2)Bank loan	21.62	71.61
(3)Other sources	0.12	0.40
Total	30.19	100.00

The amount cited in table indicates that the fund raising system of SHG is dependent on bank loan and contribution of the members. However, the amount cited in table is only for three years. The funds raising system varies from SHG to SHGs. The banks are the major source of funding for sHgs.

(2) Availing of credit-The objective of the SHG to provide loan to its members for development activities and commonly it also invests to earn more amounts by undertaking different activities.

Table-8.Loan advance scenario of SHGs

District sample SHG	Amount	No. of members availed credit
(1) kendrapada	3.80	207
(2)Derabish	2.77	160
(3)Marsaghai	5.79	81
(4)Patamundai	1.71	58
Total	**14.07**	**506**

Data reveal that 506 members from the entire sample SHGs have availed credit from their respective SHGs. The loonies represent about more than 60% of the total strength (780) of the SHGs under study.

(3) Loan repayment-The repayment of loan is one of the crucial problems at SHG level. Members avail credit but do not make repayment owing to various reasons. It is found that about 65% make regular repayment where as rest 35% make deviation in repayment. The methods adopted by SHG for recovery of loan are given below.

Table-9 Action taken for recovery of loan amount

Methods adopted	Frequency	%
1.Persuasion	11	16.92
2.Allow further time	36	55.38
3.Social restriction	03	4.62
4.Expulsion from group	08	12.31
5.legal action	02	3.08

The common methods adopted for recover of loan is allowing of further time followed by persuasion and expulsion from SHG membership. It is the common observation that some have genuine problems to make repayment while some intentionally avoid to repayment. Recovery of loan is a problem which needs attention of the financing agencies.

Credit operation and its management system-The SHG are established with the sole concept of credit facilities. A small group with credit

facilities in rural areas can add to development of the villages. This concept has been able to influence banks, credit societies and govt. to extend financial help to SHG.

(1.).Availing of credit- Credit is the sole aim of SHG. Providing credit facilities to members of SHG

Table-10 Average Loan amount of the members

Loan amount (Lakh)	Kendrapada	Marshaghai	Patamundai	Derabish	Total	%
1. Up to .20	10	12	06	05	33	38.82
2. .21-.40	13	07	07	01	28	32.94
3. .4.1-.60	03	02	03	05	13	15.29
4. .61-.80	0	0	0	4	4	4.71
5. .81-1.0	0	0	0	0	00	00
6. None	03	0	2	2	7	8.24
Total	29	21	18	17	85	100.00

As revealed in table above the credit amount varies from 20 lakh to 1.0 lakh. Majority of SHG has availed up to 48000 loan per year and 15.29% up to 0.6 lakhs. However 12.95% of them have not availed credit facilities from any source. The rate of interest varies from 5 to 12%. The period repayment in average is 1 year and six months.

It is further revealed that repayment is allowed at one time and in suitable instalments keeping period of total repayment constant.

(2). Adequacy of Loan amount. The members need credit for specific purpose and emphasis is given on income generating aspects. The opinion of the sample about adequacy of credit amount is given below.

Tasble11. Adequacy of credit amount.

Adequacy	Kendtapara	Marsaghai	Pattamundai	Derabis	Total	Percentage
1. Yeas	20	16	10	8	54	63.63
2. No	9	5	8	9	31	36.47
Total	29	21	18	17	85	100.00

Loan extended by SHG is adequate to the extent of 63.66 while inadequate to rest 36.47%.

The situation varies depending up on fund position but the rural women are able get loan to improve their livelihood system.

(3).Repayment scenario of credits. The study attempted to investigate the repayment pattern of the sample SHGs from various angles as described below.

Table 12. Repayment Pattern of loan at SHG

A. Sources of repayment	Mentions	Percentage
(1)) Out of profit	71	83.53
(2) Burrowing	04	4.71
(3) Other means	10	11.76
Total	85.00	100.00
B Mind for repayment		
1.Voluntariily	72	84.71
2.Coercin	13	15.29
Total	85	100.00
C Action for default(Multiple response)		
1. Denial of further loan	60	70.58
2.Peer pressure	06	7.05
3. Threatening	04	4.70
4. Forcible collection	0	
5. Other means	05	4.25

Repayment of loan is done out of profit, voluntarily repayment of loan, denial of further loan in case of default are the scenario of loan repayment in SHGs under study.

Conclusions:

The study" Role of Self Help Groups in changing scenario of rural livelihood System" carried out in Cuttack District covering 85 SHGs located in the blocks of Kendrapada, Derabis, Pattamundaiu and Marshaghai lead to arrive at the following conclusions

1. The members of SHG are only women, belonging to age group of 45 years with caste composition of general and OBC tend to form SHGs

2. The educational standard of the sample is appreciable and majority of them have up read up to high school level. However, about 14.11% are still illiterates and 9.43% have gone beyond high school standard.

3. The major occupation of the sample is farming followed by wage earning and small business.

4. The married women are taking more interest in formation of SHG and they have average family size of 3-5 members.

5. To avail credit and make profit are the major reasons for joining in SHG. Villagers, officials and relations are important stimulating forces to bring women in to folds of SHG.

6. Giving loan, marketing of produce and procurement of farming inputs are the major functions of SHG. The average loan amount in within 40,000 per year with rate of interest 3-5%,Time requirement for repay of loan is reported to be 1 and ½ year and loan appears to be adequate to the extent of 63.53% of the sample and number of installment for repayment is quite comfortable.

7. The members of SHG sometimes do not voluntarily repay the loan as a result of which the method like persuasion, extension of tim1.18e and expulsion from group are adopted.

The study highlights that there is remarkable change of the SHG members with respect to diversification in occupation, engagement per year, annual income and saving in positive direction.

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Settlement Pattern and Living Standard of Paudi Bhuyans in the district of Angul- An impact of Paudi Bhuyan Development Agency (PBDA)

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ABSTRACT

In Odisha, a total of 13-primitive tribes so far, have been identified basing on their criterion of inclusion. These groups are socio-economically backward and depend on natural resources. There are 17-micro projects in the state of Odisha functioning for all-round development of 12 out of 13-primitive tribal groups. Paudi Bhuyan Development Agency (PBDA), Jamardihi under Pallahara sub-division of Angul district is one of them which functions for the development of Paudi Bhuyans. This paper is partly a small replica of one of the objective-based findings of my PhD thesis being directed towards " Changing Livelihood Pattern of Paudi Bhuyans of Angul district " which examines the role of PBDA, Jamardihi in causing changes of settlement scenario in the traditional livelihood pattern of the community.

Key Words : *PBDA, Paudi Bhuyan, Pallahara,*

Introduction :

During the last few decades, Government has launched massive developmental progress for uplifting the primitive sections of tribals through ITDA, Micro Projects and MADA etc. One of such 17- Micro Projects is Paudi Bhuyan Development Agency (PBDA), Jamardihi under Pallahara sub-division of Angul district which was constituted by the State Government of Odisha vide Government in Tribal and Rural Welfare Department Resolution No. Dev-171/77(Pt)-7176/TRW Dt. 10.03.1978 & registered under the Societies Registration Act vide No. 13329 of 1978-79 Dt. 17.05.1978. Its targeted groups are Paudi Bhuyan Tribes (A Primitive Tribal Group) with total households of 1,258. It functions as a single entity at village

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Jamardihi of Bandhabhuin Gram Panchayat. The Agency has an operational area of 188 sq.kms. with 26 villages. The population of PBDA , Jamardihi is 5,633 out of which male 2,817 and female 2,816 with density of population per sq. km is 30 and total BPL family is 1,236.

The main objectives of the PBDA are as follows:-

- To accelerate the economic development of the Paudi Bhuyan tribals in the project area.
- To execute schemes for the benefit of the tribals either directly or through others in coordination with the existing agencies engaged in this direction in the field whether private or public or cooperative such as Blocks, Agro Industries Corporation, Cooperative Bank, Commercial Banks, Deptts. of State & Central Government etc.
- To review the progress of execution of the activities as well as the effectiveness of the benefits projected for the economic development of the tribals.

Constitution of Governing Body (G.B.) of PBDA:-

- Chairperson : Collector, Angul
- Vice-Chairperson : Sub-Collector, Pallahara
- Members :

I- M.P., Dhenkanal & M.L.A., Pallahara or their nominee.

II- Sarpanch, Nagira, Bandhabhuin, Seegarh, Saida & Pechamundi Gram Panchayats

III- District Level Officers of related Sectors

IV- Representative (1 or 2) of the Community

V- Representative(1 or 2) of the Women SHG of the PBDA area.

- Member Convener : Special Officer, PBDA

  The membership is subject to change and approval of Govt. in ST & SC Development Deptt. for the benefits of Paudis. The G.B. is the apex body of PBDA and will meet once in every quarters and finalize, approve all activities and take any decision for the benefits of the Community.

The main limitations of the PBDA are as follows:-

- The G.B. does not meet regularly as a result, no positive development is noticed.
- Participatory Project Reports & Action Plans are not done at the grass-root level. It is just like a top-down instead of bottom-up approach due to obvious reasons.
- The Agency is functioning with a

limited staff i.e one Special Officer, one Field Assistant, one Senior Clerk, one Junior Clerk & 11 Multi-Purpose Coordinator (MPC).

- There is no Technical staff of its own to carry out different schemes.
- The activities and involvement of other departments are hardly seen in the area.

A number of schemes are operating for the up-liftment of the Paudi Bhuyan tribals under Special Central Assistance (SCA), Conservation-Cum-Development (CCD) and Article 275 (1) being guided by the Governing Body Meeting of the PBDA.

II) Paudi Bhuyan is one of the 13-Primitive Tribal Groups (PTGs) now, re-designated as Particularly Vulnerable Tribal Groups (PTGs) of Odisha, some of which, live along with inhospitable Nagira mountainous and hilly terrain and valley bottom and in other places under Pallahara sub-division of Angul district. The community is one of the sections of "Bhuyan" tribe and locally known as Paudis or Bhuyans.

The "Bhuiya, Bhuinhar, Bhumia" is name of a very important tribe of Chhota Nagpur, Bengal and Orissa. The Bhuiyas numbered more than 22,000 persons in the Central Provinces in the year 1911. The name "Bhuiya" means " Lord of the Soil" or " Belonging to the Soil" and is a Sanskrit derivative. (Russell: 305). Dalton holds the view that the Bhuiyas belong to southern or "Dravidian" races but, S.C. Roy classified the tribe under "Mundari" group. Roy further divided the Bhuiya tribe in to 15 sections out of which first section is " Des Bhuyan or Mar or Mal Bhuyan" represented mainly by the Pauri or Pabri or Hill Bhuyan

The term "Des Bhuyan" appears to be a generic term for the more primitive section of the Bhuiyas of which, the genuine Pauri Bhuyan of the hills is the typical-perhaps now the only representative. They distinguish themselves from the other sections of the Bhuyans by adopting "Banghy" or wooden carrying-pole for their Santak, a distinctive tribal emblem where as other sections have either the Sword (Khanda) or the Axe for their Santak.(Roy: 28-29)

The greatest concentration of the Paudi Bhuyan is located in the northern districts of Odisha State, the former princely states of Bamra, Keonjhar & Banai. To-day, we find large concentrations in Banai area of Sundargarh, Deogarh area of Deogarh and Pallahara area of Angul districts and widespread in Keonjhar district. (Herbert:10)

During his stay on tour to Pallahara State from December 10th to 22nd, 1942, Verrier Elwin visited the Paudi Bhuyan villages namely Nagira, Sola (now, Silakala), Bailibahar (now,

Balibahal), Koira (now, Kaira), Sibida and Kadambinipur. The Bhuyan Pirhs of Banai, Keonjhar & Pallahara formed a more or less contiguous block of territory around the junction of the three states. The Bhuyan preferred to live above 2000 feet but, their taller mountains went much higher. Malyagiri was 3896 feet. Rainfall was generally heavy. The great majority of the inhabitants of the hills surrounding the source of the Baitarani were Bhuyans and Juangh. The population figures, so far as this could be ascertained in respect of Pallahara state was 2619. The incidence of the Bhuyan population was estimated at about 36 to the square mile. Subsequently, the Paudis scattered to different villages of 5 Gram Panchayats i.e Nagira, Bandhabhuin, Saida (Part), Pechamundi (Part) & Seegarh (Part) under Pallahara sub-division. Now, they have settled in 26 villages under the sub-division. Except these areas, nowhere, Paudis are found to have settled in Angul district. The Paudis speak a dialect of Odia peculiar to them.

III) Pallahara is a sub-division situated between 21-8" to 21-40" North Latitude and 85 E to 85.30 East Longitude under Angul district of Odisha. It is named after the headquarters town of Pallahara. The headquarters is still retained as Nizigarh Gram Panchayat. It is one of the total 4 sub-divisions of Angul district with an area of 1166.98 Sq. miles. It comprises one Block and one Tehsil with the same name of Pallahara and geographical area. The total population as per Census-2001 is 112847 out of which SC-17152, ST-40991 & Others-54704. The sub-division is having 26 Gram Panchayats and 289 revenue villages. From the above discussion, an understanding of the traditional economic life of the Paudis as a base line evaluation, is considered necessary to improve and enhance their level of livelihood which is still reeling under the banner of economic development and environmental sustainability.

Materials & Methods:

The total population is 1258 households in 26 villages.. The study was of descriptive and evaluative in nature with survey method. 100 households were taken as sample on the basis of random sampling method. Also, village survey data were collected from five villages as sample on the basis of random sampling method. The work was based on the household survey and data were collected pertaining to the point of time i.e between pre-1978 & 1978-1979 to 2010-2011. Data were collected on the traditional livelihood pattern by devising survey-schedule, questionnaire and interview-schedule. Field Group Discussions (FGD) were also held. Both primary and secondary data were used for the study.

Results and Discussions:

In data analysis, it was found that when the project was incepted formally during the year 1978, there were 275 Paudi families living in 7 villages under the project area. The Special Officer prepared an Action Programme 1979-1980 at an estimated cost of Rs.7,52,400/- for these families. The 1st survey of the Paudi families was taken up during the year 1979 and found that there were 707 Bhuyan families living in 27 villages of the project. The figure went up to 819 as on 01.01.1984 with population of 3,697 in subsequent stages of survey.

As revealed from records, a sum of Rs. 7,42,58,000/- has been allotted to this project by the Govt. as on 2010-2011 from the year of its constitution under Special Central Assistance (SCA), Conservation-Cum-Development (CCD) and Article-275 (1) for development of the community. The funds have been utilized towards income generating schemes, composite land based irrigation and infrastructure development of the Paudis.

The first Governing Body Meeting of the Project passed the 1st Annual Action Plan 1978-1979 with the following sectors. 1-Agriculture, 2 Horticulture, 3- Agriculture Implements, 4- Animal Husbandry, 5-Drinking Water Supply, 6- Soil Conservation, 7-Communication, 8-Irrigation, 9-Medical, 10- Education & 11-Cottage Industry. Later, other programmes like Building, Housing, IEC, SHG, JBY, Fire Proof House, Land Development, Educational Complex at Sibida & Computer Training were added to the activities of PBDA. The following table shows the benefits availed / not availed by the community as ascertained from the sample survey.

TABLE1: Benefits availed / not availed by the community

Sl No.	Sector / Programme	Availed	Not-availed
1	Agriculture	85	15
2	Horticulture	95	05
3	Agriculture Implements	60	40
4	Animal Husbandry	70	30
5	Drinking Water Supply	95	05
6	Soil Conservation	75	25
7	Communication	100	-

8	Irrigation	65	35
9	Medical	100	-
10	Education	85	15
11	Cottage Industry	41	59
12	Housing (Fire Proof House)	70	30
13	IEC	74	26
14	SHG	87	13
15	JBY	35	65
16	Land Development	72	28
17	Computer Training	-	100

From the analysis, it is seen that 73 % Paudis have availed and 27 % Paudis have not availed different benefits. The permanent structures and different facilities carried out by the PBDA have changed the traditional settlement pattern of the Paudi Bhuyans to the great extent. The settlement pattern of their homes & village site has been changed to modern concept as in the case of other communities in the society. As a result, the following development was noticed.

1. The change of village-site was stopped/ abandoned and permanent village was established.
2. Testing of omen for selection of new site was extinct.
3. Construction of Dwellings in the new site was streamlined by distribution of fire proof (pucca) house which remodeled their old pattern (thatched house) and inspired others to follow the new design of house.
4. The Manda Ghar / Darbar Ghar was remodeled by the construction of Community Centre at each village with modern design.
5. The Paudi huts were generally rectangular in shape with two slopping roofs. The walls are generally made of logs of wood planted vertically on the ground and plastered over with mud inside and the roofs are thatched. But this specification or in some cases specification/ description with (25x12) feet got changed by the newly sanctioned Fire Proof House.
6. The household equipments like earthen jar, string cot, wooden

head-rest, bamboo umbrella, leaf rain-coat, hand operated husking mortar etc. were replaced by modern ones.

Now, the traditional settlement pattern of the Paudis have almost changed to the modern design by the role being played by the PBDA, Jamardihi.

Conclusion:

From the study, it may thus be concluded that:-

(i) Modern method of agriculture, use of chemicals, fertilizers and compost, adoption of improved seeds and high yielding crops are yet to be made adequately popular in Paudi villages which influence their settlement pattern.

(ii) The water sources have not been properly tapped to provide irrigation facilities to the area that causes changes in the settlement of the community.

(iii) The allotment of Fire Proof House to all the eligible people is considered necessary to uplift their level of living style.

(iv) The settlement of Paudis needs to be modeled in all respect as required for a civil society.

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Empowerment of Rural Women of Erasama area of Jagatsinghpur District of Odisha

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ABSTRACT

The empowerment of women through self help group (SHGs) started in India after the success of Bangladesh Gramin Bank in which SHG was considered a new way of empowering poor women and promoting economic and social development. The women's concern with gender relations in development has strengthened the affirmation that the equality in the status of men and women is fundamental to every society. The idea of empowerment as much and particularly women's empowerment is not a new one. Present study showed that women members are more empowered after joining the SHGs particularly in the aspects of increasing self confidence, confidence in meeting financial crisis, planning own activities, good communication skill, taking crucial decisions, arranging credit and other inputs in time and other parameters of empowerment.

***Key words**: rural women; empowerment; SHGs*

Introduction:

The women's concern with gender relations in development has strengthened the affirmation that the equality in the status of men and women is fundamental to every society. The idea of empowerment as much and particularly women's empowerment is not a new one. The early literature equates well being with empowerment and assumes direct relationships between the two. It was assumed that development brings improvement in the well being of women, and if the development policy is suitably tailored, it shall lead to empowerment of women. Empowerment of women is a multifaceted process, involving the

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pooling of resources to achieve collective strength and countervailing power and entailing the improvement of manual and technical skills, administrative, managerial and planning in both individual and collective, since it is through involvement that develop their awareness and ability to organize, to take action through awareness and capability building (Shahay, 1998), Bennet (2002) describes empowerment as the enhancement of assets and capabilities of diverse individuals and groups to engage influence and hold accountable the institutions which affect them. However women's empowerment has some unique additional elements because it is a cross cutting category where the locus of disempowerment is the household itself. Moreover it requires the transformation of institutions supporting the patriarchal structures (Kabeer, 2001).

The empowerment of women through self help group (SHGs) started in India after the success of Bangladesh Gramin Bank in which SHG was considered a new way of empowering poor women and promoting economic and social development.

A SHG is an association of small economically homogeneous group of people having common goal of socio-economic development, for discussing their problems and resolving through participatory decision making.

The women's political and social empowerment through SHG taken to mean both the strengthening of individual women involved in economic development and local politics, their power to influence the agenda and decision of local political bodies with gender perspectives, as well as the development of gender awareness and collective action among other women in the community (Hust,2004).

Micro Credit and SHG

The laurelling of micro credit schemes for women through SHGs of women over all India in the late 19990s signals a change in poverty alleviation strategy on part of the central and state government with proclaimed intention of helping the poor to help themselves and to empower women. As a highly visible programme recognizing women as bank customers, it has been also noted that the SHG based loan scheme was politically useful to the Government at a time when institutional credit to agriculture was being cutback, following the process of financial liberalization and the exhortation to bank to maximize profit rather than pay attention to proclaimed social objectives. The SHGs have been perceived to have increased self esteem and self confidence of women, improved their management and technical skills, enhanced women's social status in the family and community, increased mobilization of public and private sector

services in women's interests and improved women's well being by reducing drudgery and introducing time-saving devices (GoI, 2001).

Materials and Methods:

This study was conducted in Erasama block of Jagatsingpur district of Odisha, the worst affected block in super cyclone that hit Odisha in 1999. There was total loss of livelihood of people and still people are yet to cope up economically with rest of the state. Out of 1200SHGs in the sample block, 100 SHGs were selected at random comprising around 200 villages. In the next stages 3 members from each group including the president were taken as sample respondents to elicit their views.

Results and Discussion

Functioning of SHGs

SHGs save in rural public credit institutions and get loan from these as a group or individually at 12% interest. Group loans are used to lend to individual member at higher interest rates. The SHGs guarantee the loan collectively. No collateral in terms of land or property is needed and they are collectively responsible for the repayment of loan. If one member fails to pay interest and amortization in a particular month, the group pays it. The members save regularly Rs.10-100 per month for six months, after which time they can borrow as a group from the bank for internal re lending at 24% interest. When this loan has been repaid, new group loans or individual's loan can be taken.

The caste composition of SHGs also varies. The groups are segmented in such a way that the intermediate caste have their own groups. As far as dalits are concerned, they have their separate groups. The mixed groups are also found in which women from both intermediate and dalit case are present in the same group. All the women member of SHGs do not belong to the poorest strata of the populatÿon. Nearly 33% of them belong to households which are relatively better off than the poor. These are women from households with some resources and with the capability to save as well as pay back loans at regular intervals. The activities undertaken by the group were given in Table 1.0.

Table1.0 Activities of the group

Sl.No	Activities	Frequency Distribution	Percentage
1	Internal lending	100	100.00
2	Poultry	5	5.00
3	Piggery	1	1.00
4	Cultivation	11	11.00
5	Fishery	9	9.00

6	Dry fish	1	1.00
7	Food products	9	9.00
8	Tailoring	1	1.00
9	Brick making	1	1.00
10	Midday meal	17	17.00
11	Beetle vine cultivation	10	10.00
12	Rice processing	5	5.00
13	Tent house	1	1.00
14	Bakery	2	2.00
15	Ice cream factory	1	1.00
16	Shop	2	2.00
17	Agarbati making	10	10.00
18	Dairy	5	5.00
19	Pump	1	1.00
20	Goatery	5	5.00
21	Bidi making	1	1.00

Source: Field study Erasama block, Jagatsingpur

The analysis indicates that 100.00 per cent of the groups are engaged in internal lending apart from following other productive activities. Seventeen per cent of the groups have been assigned by the CDPO to undertake midday meal scheme in the schools. The members rotate among themselves the responsibility of cooking and purchase of raw materials from the group fund. Further 10.00 per cent of the groups are involved in agarbati making, 9.00 per cent in fishery, 11.00 per cent in cultivation of vegetables and 5.00 per cent each in poultry, dairy, rice processing and goatery. Interestingly, women groups are now engaged in so called men's job and profit margin is equally good in these activities. Before joining the group, almost 93.33 per cent of the respondents were non earning members who primarily depend on their husbands' income, after joining the group 97.63 per cent women members became earners.

Self-Help Groups and Women's Empowerment

Whether the mixed caste groups or single caste groups, it is quite clear that women get into a new experience by regularly going out of their houses and participating in meetings with other women even during evening hours. In achieving this, they have overcome some

initial resistance from their husbands. During group interviews conducted with women, we were told that the husbands now cooperate better in this regard.

Through the SHG experience women learn how to conduct a meeting. They meet with local government officials and members of panchayat boards. Some of them especially the group leaders learn how to make money transactions in a bank. This process has been reported to mean building up of women's empowerment in terms of independence and self confidence and their thrift as entrepreneurs (Sedan, 2005).

We also found that quite a few of the SHGs took interest in local village affairs of special concern to them, like drinking water supply, street lights, laying of proper roads etc. They discussed these matters at their meetings and brought them to the attention of panchayat board or gram sabha. Some of the SHG members were also ward members of panchayat board and thus had direct access to the decision making in the village. Very often, it was these women who came forward to join campaigns for street cleanliness and other attempts by the panchayat for making people to participate in common activities.

Table2.0 Social impact variables by participation

Variable	Frequency Distribution (N=300)	Percentage	Rank
Taking crucial decisions in purchase of raw materials and pricing of the product	204	68.0	5
Planning your own activities	216	72.0	3
Creating any job opportunities for others	45	15.0	12
Able to arrange the credit and other inputs in time	186	62.0	6
Self confidence has increased	270	90.0	1
Treatment of spouse has become more respectful	144	48.0	7
Confident of meeting financial crisis	252	84.0	2
Good communication skill	213	71.0	4
Decision making in family planning process	69	23.0	11
Decision making in children's marriage	42	14.0	13
Decision making in buying and selling of property	27	9.0	14
Decision making in sending children to school	99	33.0	9
Decision making in family matters	90	30.0	10
Increased access to sanitation	138	46.0	8

In the study, the social empowerment variables of women were particularly analyzed on the basis of responses obtained from members (Table2.o). The women members were asked whether they feel more empowered after joining SHGs. The results indicated that a considerably higher proportion of respondents reported increase in self confidence (90.00percent), confidence in meeting financial crisis (84.0 per cent), planning own activities (72.0 per cent), good communication skill (71.0 per cent), taking crucial decisions (68.0per cent), arranging credit and other inputs in time (62.0 per cent) and other parameters of empowerment (14-48.0 per cent). On the whole the respondents are of the opinion that they are empowered after joining the group.

The participation of members in the group ensures a secured economic position but whether this ***economic empowerment*** will lead to other aspects of empowerment, is an issue that need to be discussed. In the sample area, the women SHG members are getting encouraged from their husband to join the groups because they do not have a constant source of income and this would at least ensure a regular source of income, even though the money is minimal. But whether their position in the family has improved or not is doubtful, though they never think that their position is any way different from their more educated counterparts. They happily do their household works and manage to come to attend the meetings. As empowerment is realizing the potential of oneself, so they are empowered in their own respect. If we take this aspect of empowerment into consideration, then economic empowerment will lead to psychological empowerment and then other aspects of empowerment completely depend on the individual.

The ***psychological empowerment*** of the members gives a confidence among the women as they now speak for their rights. The collective approach the group and the easy access to credit is the strengths, which form the base for individual development and empowerment in the long run. Through the groups the members are earning money and this is giving them a sense of pride and satisfaction, a sense of achievement, a feeling of important member of the family as now they can supplement the family income when there is a financial urgency. They have created a space for themselves in their own house as well being a group member that gives them a sense of identity. They have acquired higher knowledge and awareness levels on issues like women's health nutrition, reproductive rights, legal rights, literacy etc. that affect the community.

The ***cultural empowerment*** refers to redefining gender 'rules and norms' and recreating cultural practices

customs, rituals, symbols etc. There has been a change in women's role in the house and the community. Change in social custom such as sati, child marriage, dowry, discrimination against widows, a change in opinion on these matters and people both men and women alike have changed their point of view on this. They no longer support these rites and customs and encourage higher education and late marriage for girls. These visible changes are observed in women's participation in attending public meetings and training programmes. They meet Sarpanch, Govt. Officials and NGOs personnel more frequently and confidently to express their views on matters relating to villages and groups.

The ***social empowerment*** of members has been accomplished when they join SHGs. It refers to development of social leadership in community action. As there has been increase in bargaining/ negotiating power of the women as an individual as well as in collectiveness, they find the strength in themselves to question the injustice done to them on any form. Some groups have taken steps to plant trees which were completely destroyed in the super cyclone 1999. They have approached the concerned officials for the repair of roads connecting villages. The groups also try to settle family disputes and improve mother-in-law and daughter-in-law relationship. Ownership of productive assets and increase in savings show that groups are functioning well. Attaining income security and recognition of women's economic contribution within and out side the household have been noticed as they join the group. The groups have encouraged them to start economic venture individually to empower them economically.

Formation of cohesive women's group at village, district and state level provides a platform to meet other successful groups and discuss various issues. This set of arrangement gives them a collective identity and strengthens the ***organizational empowerment***.

Participation levels of women in political process have increased through their representation in local bodies and panchayatiraj institutions. The members at present decide during an election to whom to vote and judge the most suitable candidate. They are confident of becoming Sarpanch in future elections. This has ensured the political empowerment of women members of SHGs.

The ***political empowerment*** aims at altering rules, norms, marriage, religion and customs that were against women. The individual as well as group advocates for change in the institutions that restrict women's freedom. All these indicators show the empowerment process of women. Empowerment of rural women embody several factors like

equality of work and wages, expansion of girls education, autonomy over reproductive life, access to ownership of land and property, training and technology, access to bank credit and market, safe water, sanitation and energy. Among these determinants access to bank credit is the most crucial factor. The ultimate goal of development is the achievement of economic growth with social justice which mean opening up access to minimally acceptable life sustaining and life enhance support system for all who participate in the growth process.

Sustainability of SHGs

The practice followed in SHGs is to borrow from the bank at 12% rate of interest and re lending to individual group members at 24% rate of interest. Despite an impressive number of SHGs started in the study villages, about 7% of the members have taken bigger loans making it possible to start some new business. Another 17% of members have been able to get smaller consumption/emergency loans. Most of these members belong to above the poorer income strata. There are few borrowers from poorer strata and the poorest group of women are not reached by the programmes. Moreover the average interest charged for SHG loans is 24% which is much higher than the average 13% interest rate charged for other institutional loans. This is not to deny the fact that SHGs have been useful in catering to some emergency needs of some households with regard to food, medicine and social purposes. SHG loans have been a source of cheap even if small, consumption loans, enabling some households to avoid going to money lenders. These loans have also enabled a few relatively better off households to start some business led by women.

Conclusion:

The women members are more empowered after joining the SHGs particularly in the aspects of increasing self confidence, confidence in meeting financial crisis, planning own activities, good communication skill, taking crucial decisions, arranging credit and other inputs in time and other parameters of empowerment. Economic, social, psychological and political empowerment of women have been reported by the members after joining the groups.

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A Comparative study between trained and untrained Farmers on modern Agricultural Technology (Polly Plastic) in Southern Provincesof Iraq

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ABSTRACT

The present study conducted in the southern provinces of Iraq compares between the trained & untrained farmers about the use modern agricultural technology (Polly plastic).The study was carried out on 200 untrained farmers using Polly plastic in the southern provinces of Iraq, namely; Thi-Qar, Basrah, Muthanna and Masan. A schedule was developed to collect data during the year 2012. The study revealed that 55.56 percent of the untrained farmers in Thi-Qar province were under low category users of the modern agricultural technology. As for as the diversity of agricultural products,produced by the trainees was concerned,tomato crop was grown by majority of them (49 percent).The study also showed that majority (73.5 per cent) of the trainees played a role in dissemination of modern agricultural technology by discussingwith family members&working to convince them latter to use modern agricultural technology.Seeing the responses of the trainees about the training program implemented by the extension centers, it was found that more than 54 percent of themwere satisfiedwithincreasein the knowledge and improvement in the skill for using the modern agricultural technology (Polly plastic).

Keyword: *agricultural products produced, diversity, satisfied, Polly plastic, untrained farmers.*

Training is transferring information to organization's members to positively improve the effectiveness and productivity of organizations (Leard 2010). Training improves a person's skill, his power of intelligence and develops in him the desired attitudes and values required for his work. The lime grower works as manager on his farm, he performs many functions in carrying out better production. The training and education are life-long requirements to improve skills and knowledge for its betterment in his enterprise (Sharma, *et al* 2010).

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Training help employees to get to know other people in the same field, if the it is outside the organization or if the organization is huge. This in turn will pave the way for developing different perspectives and they may even be able to come up with ideas to do their jobs in a better way. Moreover, it provides the opportunity to build network. Through this, the organization will be benefited in terms of increased productivity, maybe new business and reduction in costs (Suleiman 2009). The other benefits of training are as better prepared employees to achieve the organizational goals, more productive staff that are able to meet the challenge of changes in the organization during learning and work on new programs (Noe 2002). Agricultural sector must assume greater importance. People involved in agriculture need improved skills, information, and ideas in order to develop an agriculture that will meet complex demand patterns, reduce poverty, and preserve or enhance ecological resources. This regard extension has an important role to play. As documents the rural development policy and strategy document, one of the major ways of implementing modern farming methods through extensive utilization of human labor is by motivating the human labor in agriculture through agricultural education and training. Though there has been increasescoverage of primary education in the rural areas still farmers have no access to modern technologies, which enable them to bring about the expected rural transformation (Mengistu 2009). Farmers' training is provided at the local level through vocational agricultural schools and field demonstrations. These training classes may be conducted on specific topics like the use of urea or vast topics like package of practices. The new information that farmers gain through these training sessions makes their daily farming activities much easier. It also leads to an increase in productivity and bigger profits in the long run**.** After the extension centers provided the training, Study observed low application level of the modern agricultural technology of Polly plastic. In order to compare among trainees and untrained respondent onof these techniques,this studyis trying to answerthe following questions: 1. Extent of information trainee and untrained respondentsgained after completing the training course.2. Extent of satisfactionregarding the information provided in training course.

To answers these questions a study entitled "A Comparative study between trained and untrained farmers on modern agricultural technology (Polly plastic) in southern provinces of Iraq"has been undertaken with the following objectives:

1. To compare trained and untrained farmersregarding utilization of modern agricultural technology (Polly plastic) in southern provinces of Iraq.

2: To study the extent of diversity of agricultural products produced by the trainees' respondents.

3: To study the dissemination of agricultural technologies by the trainees.

4: To find out the opinion of respondent trainees towards the training programs implemented by the extension centers.

Materials and Methods:

The present study was carried out in the southern provinces of Iraq. The southern provinces consistingof four provinces namely (Thi-Qar, Basrah, Muthanna and Masan) were selected randomly for the purpose of investigation of study objectives .those farmers aren't given training about the modern techniques on Polly plastic in 2012.The total number of untrained farmers were 1130 using(Polly plastic)technology, out of which 300 were untrained farmers in Thi-Qar, followed by 450 untrained farmers in Basrah, 160 untrained farmers in Muthanna and 220 untrained farmers in Masan .The untrained farmers were selected on the basis of probability proportionate to size (PPs)method. The number of respondents sample for the study was (200).They were spread over four provinces as follows: 54, 80, 28 and 38 untrained respondents in Thi-Qar, Basrah, Muthanna and Masan respectively. The data were collected with the help of schedule specially developed for the study. Statistical methods used to analyze the data were; frequency (F) and percentage (%).

Results and discussion:

1. To compare between trained and untrained farmers in use of modern agricultural technology (Polly plastic) in southern provinces of Iraq.

1.1. The comparison among the southern provinces on using the modern agricultural technology (Polly plastic)have been made by working out mean and standard deviation.

The distribution of untrained farmers in the southern provinces Iraqi studied, according three categories namely low, medium and high .The result have been presented in the Table 1.

1.1.1. In the low category users of modern agricultural technology (Polly plastic) the result are as following: Thi-Qar province had 55.56 percent of untrained farmers followed by Basrah and Muthanna provinces which had 50 percent each and Masan province had 42.11 percent untrained farmers.

1.1.2. It is clear from the Table 1 that Muthanna province had 39.29 percent in medium users' modern agricultural technology (Polly plastic) followed by Basrah province 31.25 percent, Thi-Qar province 29.63 percent and Masan province 21.05 percent respectively.

1.1.3. In the high category use of modern agricultural technology (Polly

plastic) the result are as following: Masan province had 36.84 percent from untrained farmers, followed by Basrah province 18.75 percent, Thi-Qar province 14.81 percent and Muthanna province 10.53 percent respectively.

Table 1: **Distribution of untrained according to the use of modern agricultural technology**

Provinces	low		medium	high		Mean	S. d	Total	
	F	per	F	per	F	per			
Thi-Qar	30	55.56	16	29.63	8	14.81	35.09	4.55	54
Basrah	43	50	25	31.25	12	18.75	31.89	4.76	80
Muthanna	14	50	11	39.29	3	10.71	34.07	5.35	28
Masan	16	42.11	8	21.05	14	36.84	32.39	6.21	38
									200

F=Frequency S.d = standard deviation

1.1. The comparison between the trained and untrained farmers in using the modern agricultural technology in the (Polly plastic).

The comparison between the trained and untrained farmers in using the modern agricultural technology (Polly plastic) in the four provinces namely Thi-Qar, Basrah, Muthanna and Masan .is depicted in Table 2 which explains distribution of the farmers together (untrained and trained) and which one is better of them.

Table2: Distribution of trained and untrained according to the use of modern agricultural technology

category	Thi-Qar		Basrah		Muthanna		Masan	
	Trained	Untrained	Trained	Untrained	Trained	Untrained	Trained	Untrained
Low	42.59	55.56	43.75	50	42.86	50	36.84	42.11
Medium	37.04	29.63	40	31.25	35.71	39.29	47.37	21.05
High	20.37	14.81	16.25	18.75	21.43	10.71	15.78	36.84

It can be noticed from the data of Table 2 that the trained farmers are better inapplying the modern agricultural technology (Polly plastic) compared with untrained farmers. It can be concluded that the training leads to increasein the information about the modern techniques. It may be concluded the trainee that upon receiving training from the extension centers about the modern agricultural technology will be more active to extend their learned modern technology (Polly plastic).

1.1. To find out the difference on the level of knowledge about modern agricultural technology use (Polly plastic)between trained &untrained farmers.

To find out the difference, "t" test was worked out & the result has been presented in Table 3.

Table 3: difference in knowledge about modern agricultural technology use (Polly plastic)

SI.NO	Respondents	Mean score	Difference in mean	t value
1	Trained	34.75	2.89	12.18**
2	Untrained	31.86		

** Significant at 1 percent level of probability, df= 198

The above table shows that the mean knowledge score for the trained and untrained farmers were 34.75 and 31.86 respectively and difference between the two means was 2.89. The calculated "t" value for test of significance of difference between the above two means was 12.18 .This "t" value was found to be significant at 1 percent level of probability**.** This finding contradicts the study of Ghosh(2001) who found that the difference in knowledge about improved rice cultivation technologies between the experimental and control groupwas significant at 1 percent level of probability.

2. To study the extent of diversity of agricultural products produced by the trainees' respondents.

2.1 The present study aims at finding out the diversity of agricultural products produced in Polly plastic by the trainees' respondent in southern Iraq. The most pervasive crops in the southern provinces were: tomato, cucumber and eggplant**.** Thedata have been presented in Table 4.

Table 4: Distribution of the trainees according to diversity of agricultural products produced N=200N=200

SI.NO	Name crop	Trainee	
		frequency	Percentage
1	Eggplant	30	15
2	Tomato	98	49
3	Cucumber	72	36
	Total	200	100

It is observed from the table 4 that the tomato crop was grown by majority (49 per cent) of trainee respondents.It might be due to the consumers prefer tomato crop constantly with food.Cucumber crop was grown by the 36 percent of total trainee respondents and eggplant was grown by the 15 percent of total trainee respondents. Thismight be due to personal decisions on the production cost and consumer demand to those crops and the weather condition in that area.

2.2: The present study aims at finding out the diversity of agricultural products produced namely: tomato, cucumber and eggplant by the trainees' respondent in the Polly plastic. Herfindahl index (H.I.) approach was used to measure the agricultural products diversification .The results have been presented in table.5.

Table 5: The extent of diversity of agricultural products produced by the trainee respondents according the total area under crop

Name of crop	crops	area under crop		
	Pi^2	small	medium	large
eggplant	0.0289	0.238793	0.187778	0.328759
tomato	0.2401	0.037589	0.558213	0.467409
cucumber	0.1156	0.065743	0.408179	0.654732
total	0.3846	0.342125	1.15417	1.450901
$\sum_{1=i}^{N} Pi2$	0.016435	0.013005	0.148012	0.233901
1-H.I	0.983565	0.986995	0.851988	0.766099

Extent of crop diversity on the farms of respondent trainees on different levels of cropped area is presented in Table 5. The results reveal the relationship between the cropped area and the diversity. High diversification requires more labors for various types of cultural operation. Hence, the respondents with smaller holdings with more family labors prefer diversification.

2. To study the dissemination of agricultural technologies by the trainees.

The third objective discusses the role of the trainees in dissemination of modern agricultural technology.The results have been presented in Table6.

Table 6: Distributionof the trainees according to the dissemination of agricultural technologies

Sl.NO	Statements (about the learned technology)	Freq	Percent
1	Discuss with family mumbers and working to convince for using modern agricultural technology.	147	73.5
2	Discuss with neighbors and owner of the Polly plastic and those living near to the trainees.	134	67
3	Discuss with other farmers during daily meeting in the evening.	143	71.5
4	Trained higher social status people assisted in the deployment of modern information through meetingsfor a number of farmers.	109	54.5
5	Compare between the production in Polly plastic before and after the training in order to convince the farmers.	123	61.5
6	Help other farmers who are not participating in training course on the use of modern agricultural technology.	134	67

Table 6 depicts that 73.5percent of the respondent trainees discussed the learned technologies with their family members about the use of modern agricultural technology in Polly plastic.71.5 percent trainees said that they discussed modern agricultural technology use with the other farmersduring daily meeting which always happened in the evening. 67 percent respondentsdiscussed with neighbors, ownersof the Polly plastic and those living near to the trainees. 61.5 percent trainees preferred to compare between the production in Polly plastic before and after the training in order to convince the farmers. 54.5 percentof the trainee respondents said that the trained higher social status people assisted in the deployment of modern information through meetingsfor a number of farmers and 67 percent respondents helped other farmers who did not participated in the training course on the use of modern agricultural technology.

Thus it may be concluded that the traineeswho received training from the extension centers about the modern agricultural technology were involved in activities to extend their learning of the modern technology totheir family members and neighbors.

4. To find out the opinion of respondent trainees towards the training programs implemented by the extension centers.

In order to find out the extent of satisfaction of the trainee about the extension program application in extension centers,the trainees were divided basically into four continuum namely fully satisfied ,just satisfied ,satisfied only to some extent , not satisfied .The result of study have been presented in Table 7.

Table 7: Distribution of the trainees according to the opinion towards the training program implemented by the extension centers N=200

Sl.	Statements of opinion	Frequency of respondents							
		Fully satisfied		Just satisfied		Satisfied only to some extent		Not Satisfied	
		Fre	per	Fre	Per	Fre	Per	Fre	Per
1	Towards knowledge &skill gain	108	54	51	25.5	37	18.5	4	2

2	Towards utility of the training	71	35.5	74	37	51	25.5	4	2
3	Towards clarification of technology provided by the specialists	48	24	77	38.5	70	35	5	2.5
4	The transfer of modern agricultural technology	37	18.5	73	36.5	71	35.5	19	9.5
5	Toward the possibilities of physical and human resources responsible for guiding the implementation of extension program	17	8.5	67	33.5	47	23.5	69	34.5

Fre = Frequency Per= percentage

The Table 7 presents the result of opinion towards the training program implemented by the extension centersabout the training of modern agricultural technology use in Polly plastic.

Fully satisfied:

Thepercentage of trainees who were fully satisfied with the extension program implemented by extension centersregarding "towards knowledge &skill gain"; "towards utility of the training";towards clarification of technology provided by the specialists"; "the transfer of modern agricultural technology"; "toward the possibilities of physical and human resources responsible for guiding the implementation of extension program",was 54, 35.5, 24, 18.5 and 8.5 percent respectively.

Just satisfied:

Thepercentage of the traineeswho were just satisfied with the extension program application in extension centersregarding "towards clarification of technology provided by the specialists"; "towards utility of the training"; "the transfer of modern agricultural technology"; "toward the possibilities of physical and human resources responsible for guiding the implementation of extension program"; "towards knowledge &skill gain",was having 38.5, 37, 36.5, 33.5and 25.5 percent respectively.

Satisfied only to some extent:

Thepercentage of the traineeswho were satisfied only to some extent the extension program application in extension centersregarding " the transfer of modern agricultural technology"; "towards clarification of technology provided by the specialists";"towards utility of the training"; "toward the possibilities of physical and human resources responsible for guiding the implementation of extension program"; "towards knowledge &skill gain",was having 35.5, 35, 25.5, 23.3and 18.5 percent respectively.

Not Satisfied:

The percentage of the trainees who were not at all satisfied the extension program application in extension centersregarding "toward the possibilities of physical and human resources responsible for guiding the implementation of extension program"; "thetransfer of modern agricultural technology";"towards clarification of technology provided by the specialists"; "towards utility of the training"; "towards knowledge &skill gain",was 34.5, 9.5, 2.5, 2 and 2 percentrespectively.

Thus it may be concluded from the above table that a majority of the respondent trainees felt that they were fully satisfiedwith the knowledge and skill gained.And also with the utility of the training programs. This might be due to the fact that the content and methods used for the training programmers were need based. Training programmers were specialists in respective fields who played an important role in this regard.

Conclusion:

It can be concluded from the above mentioned findings of the study that the trainees were better in application of the modern agricultural technology as compare to untrained farmers. And many trainee respondents in southern provinces focused on the production of tomato crop. They discuss with family member and work to convince them to use modern agricultural technology as this is a was better method fordissemination of agricultural technologies.Finally the present study found that the trainees were satisfiedwith the extension program implemented by the extension centers.

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Communication Sources Used by Extension Personnel and Livestock Farmers

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ABSTRACT

The extension workers are the real change agents and key communicators who play an important role in diffusion of innovations. The paper presents data on extent of use of different communication media by extension workers and livestock farmers' preference of these selected communication Medias. The findings revealed that majority of the extension workers are using group discussion, T.V, Radio, Farm Visit, Newspapers and Cattle Shows for dissemination of improved livestock production technologies. The livestock farmers were found to be using interpersonal communication sources like neighbors' and relatives, B.V.O/V.A.S and V.L.W'S besides T.V., Radio and cattle shows. Limited use of training programs, demonstration and extension literature were identified as important reasons for poor state of transfer of livestock production technologies. The extension workers were not using suitable combination of communication media for effective transfer of improved livestock production technologies.

Key Words: *- Rural development, teaching efforts, innovation, communication, extension workers, livestock farmers.*

INTRODUCTION

In rural development nothing is more important than the transfer of useful ideas from the sources to users. Extension workers are essentially educators whose job is to make farmers know, understand, accept and adopt recommended farm practices in order to increase agricultural production. There are certain basic and proven methods of extension teaching. The extension worker should choose appropriate tools by exercising sound judgment depending upon the teaching job on hand. The factors that have a bearing on teaching efforts are the number of extension staff, the selection and combination of extension methods and the educational and age level of the people concerned.

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He should also consider the subject matter, cost and the behavioral change he is intended to bring out. To make farming communities better informed in the use of any innovation, the extension worker requires communication devices that can overcome the barriers of illiteracy and tradition which are predominant among the resource poor farmers.

Communication is blood stream of development administration. Considering the importance of role played by communication media in disseminating the farm technology, the present study was undertaken, with the objectives of extent of use of different communication media by extension workers and their preference by livestock farmers.

MATERIALS AND METHODS:

The study was conducted in randomly selected eight villages falling under each block of the purposively selected Budgam District of Kashmir valley in the state of Jammu and Kashmir. Two categories of respondents, namely, extension workers and livestock farmers constituted the sample of the study. The first category of respondents comprised livestock farmers. From each of the eight selected village's thirty livestock farmers who were having problems in adoption of cross-breeding program were selected. The sample thus, consisted of 240 respondents from the first category.

The second category of respondents comprised thirty extension workers from animal husbandry department, Govt of Jammu and Kashmir (B.V.O/ V.A.S/Para-vets) of the blocks concerned, University scientists of SKUSAT-K and extension field functionaries of K.V.K Budgam District. In all 270 respondents (240 livestock farmers & 30 extension personnel) constituted the whole sample. The data were collected through personally interviewing the respondents with the help of a pre-tested structured interview schedule developed for the purpose.

RESULTS AND DISCUSSION

Use of different communication media by extension workers:

Since extension workers are the real change agents and they are mainly responsible for dissemination of new technology to the farmers, 30 such extension workers were identified and their views were ascertained with the help of structured schedule. These extension workers were subjected to a set of 14 communication media and asked how far these media were being used by them.

Table – 01 Use of different communication media by extension workers.

Sl. No.	Communication media	Frequency Distribution (N = 30)	Rank
1.	Group discussion	22 (73.33)	I
2.	T.V.	20 (66.67)	II
3.	Radio	19 (63.33)	III
4.	Farm visit	16 (53.33)	IV
5.	News paper	15 (50.00)	V
6.	Cattle show	15 (50.00)	
7.	Exhibition	12 (40.00)	VI
8.	Kissan Mela	11 (36.66)	VII
9.	Training	09 (30.00)	VIII
10.	Demonstration	09 (30.00)	
11.	Folder, Magazine, Bulletin,	05 (16.66)	IX
12.	Chart, Poster, wall paintings	02 (06.66)	
13.	Film Shows	02 (06.66)	X
14.	Slide shows.	02 (06.66)	

Figures in parentheses indicate percentages

On cursory look at Table – 01 it is observed that about 73.33 per cent of the extension workers used Group Discussion, 66.67 per cent T.V., 63.33 per cent Radio, 53.33 per cent Farm visit, 50 per cent News paper and Cattle Shows, 40 per cent Exhibition, 36.66 per cent Kissan Mela, 30 per cent training and Demonstration and to a lesser extent Folder, Magazine, Bulletin (16.66%) Chart, Poster, Wall Paintings, Film Shows, Slide Shows (06.66%). The percentage indicates the extent of use of these media by the extension workers. It was quite clear from the Table – 01. That extension workers were still using Group discussion, T.V., Radio, Farm Visit, News paper and Cattle Shows to great extent Training, Demonstration, Exhibition are being used to lesser extent. Probably non-availability of Audio-visual Aids, Transport problem, Cost involved, Operational difficulty are some of the reasons restricting their use. Charts, Posters, Slide shows were rarely used. Usually no one channel will reach an entire audience. Thus it is the combination of different channels which results in successful communication. Thakur (1990) found that the respondents retained significantly higher level of knowledge as a result of training by different training methods. Kumar (1985) reported that on an average, farmers gained 22 to 65 per cent of the knowledge imparted through farm radio programs.

Communication media preference

To ascertain the communication media preference in light of its effectiveness by the livestock farmers as well as extension workers. Again with the help of structured schedule incorporating a selected set of interpersonal communication media and mass media were put forth to both the groups of respondents and their opinion sought. Data in this regard are presented in Table – 02.

Table – 02 Frequency distribution of livestock farmers and field functionaries with respect to communication media preference and effectiveness

Communication sources	Livestock farmers (N = 240)	Field functionaries (N = 30)	Pooled (N = 270)	Rank
Interpersonal Communication sources				
Neighbour's/relatives	88 (36.67)	04 (13.34)	92 (34.07)	I
B.V.O./V.A.S.	46 (19.16)	10 (33.33)	56 (20.74)	II

V.L.W.	40 (16.67)	02 (06.66)	42 (15.55)	III
University Scientists	29 (12.08)	06 (20.00)	35 (12.96)	IV
Village mukhiya	24 (10.00)	04 (13.34)	28 (10.38)	V
Voluntary organizations	09 (3.75)	03 (10.00)	12 (4.45)	VI
Input/credit agencies	04 (1.67)	01 (03.33)	05 (1.85)	VII
Total	**240 (100.00)**	**30 (100.00)**	**270 (100.00)**	
Mass media				
T.V.	107 (44.59)	12 (40.00)	119 (44.07)	I
Radio	55 (22.91)	04 (13.34)	59 (21.86)	II
Kissan mela/Cattle show	38 (15.84)	07 (23.33)	45 (16.67)	III
Film shows/video shows	17 (07.08)	03 (10.00)	20 (07.40)	IV
Non-projected visual aids	14 (05.83)	02 (06.67)	16 (05.93)	V
Extension literature	09 (3.75)	02 (06.67)	11 (04.07)	VI
Total	**240 (100.00)**	**30 (100.00)**	**270 (100.00)**	

On critical analysis of the data presented in Table – 02 it is quite evident that livestock farmers (36.67%) considered neighbour's and relatives as the most potent communication media being used in transfer of technology program in order of preference and effectiveness. It was followed by of B.V.O/V.A.S. (19.16%), V.L.W. (16.67%), University Scientists (12.08%), Village Mukhiya (10%), Voluntary organizations (03.75%) and input/credit agencies (01.67%) respectively.

The field functionaries considered B.V.O./V.A.S. (33.33%) as the most important source of communication followed by University Scientists (20.00%) neighbour's/relatives, village mukhiya (13.34%), voluntary organizations (10%) and input/credit agencies (03.33%). As far as credit and input agencies are considered they were

given lower rank by both the types of respondents. This may be due to the fact that these agencies were not functional to the extent desired in the sample area. The preference for village mukhiya and voluntary organizations was also in the lowest ebb. The only remarkable difference was that livestock farmers gave higher rank to neighbour's and relatives where as field functionaries considered B.V.O. /V.A.S. the most important and effective source of communication. However, both the group of respondents did not deny the role of V.L.W., University Scientists in furtherance to transfer of technology programme. On pooled data combining the preference shown by livestock farmers as well as field functionaries the rank order was neighbour's/relatives followed by B.V.O/V.A.S., V.L.W., University Scientists, Village mukhiya, Voluntary organizations and input/credit agencies in order of their relative effectiveness from top to low i.e. 1st to 7th rank.

Regarding mass media of communication the livestock farmers considered T.V. as most important and effective source of communication followed by Radio, Cattle Show/Kissan Mela, Film Shows, non-projected visual aids and extension literature in order of their relative effectiveness from top to low i.e. 1st to 6th rank. Whereas field functionaries also considered T.V. as most important and effective source of communication followed by cattle show/ Kissan Mela, Film show/Video Shows, non-projected visual aids and extension literature in order of their relative effectiveness. Chandra (1984) found that the morning bulletin and the evening agricultural programme are listened every day by a majority of farmers. On an average, farmers listened to farm broadcasts 02.44 hours a day (Sandhu, 1970). The charts and graphic forms were found to be least effective in communicating farm information (Akhauri, 1973 and Ambastha, 1974).

The difference in their perception can be attributed to their education level and socio-economic status. On pooled data the rank order on the basis of most effective to least effective communication media, T.V. was ranked 1st followed by Radio, Kissan Mela, Film shows, non-projected visual aids and extension literature. Probably non-availability of video – sets, non-projected visual aids and farm magazines contend for their least preference by both the group of respondents. T.V. was unanimously considered as the most effective mass communication media because of the availability of T.V. Sets with majority of the respondents. Kissan mela because of the liking of livestock farmers for all kinds of melas or shows which got 3rd preference. The popularity of T.V. was increasing day by day as it was ranked 1st out of the six mass media for which opinion were sought from the respondents.

CONCLUSION

It is therefore, concluded that interpersonal communication sources like neighbour's and relatives and T.V among mass communication channels were being utilized by majority of the respondents. Group discussion followed by T.V, Radio, Farm visit, Newspaper and cattle show were being frequently used by extension workers for dissemination of improved livestock production technologies. For effective diffusion of improved livestock production technologies in hilly areas, it is required that livestock farmers should be oriented towards other communication sources like B.V.O/ V.A.S, V.L.W, University scientists as well as radio programs, cattle shows and extension literature. Simultaneously the extension workers should be motivated and trained for using a combination of suitable communication media in order to increase the rate of diffusion of livestock technologies in hilly areas.

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Occupational Health Complaints of Female Workers in Fish Processing industries

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Abstract

Odisha occupies 480 km of seacoast in eastern part of India. In these coastal areas fish processing industries have been established. About 60,000 people depend upon the fish processing industries for their livelihood where they use small sharp knife for the operation and their fingers come in contact with different sharp body parts of fishes. Different activities like peeling, head and tail separation, grading are mostly done by female workers. They mostly work in squatting posture which is tedious and drudgerious. A participatory survey work was conducted for 107 no of female workers in two fishing industries with age in the range of 18 to 50 years. The main problems reported to be blanching of fingers (83%), pain in joints (81%), hand injury (86%), hand numbness (85%), head ache (43%) in most of the subjects. The body parts feeling discomfort are reported to be knee (92%), shoulder (77%), lower back (78%), neck (90%) etc. Generally injuries in thumb, pointer and middle finger are more and infections take in the gap between fingers due to salty water and chemicals. Protective measures like eye goggles, apron, hand gloves, shoes, and use of sitting platform can reduce the musculoskeletal disorder and fatigue during the work.

Keywords: *Health complaints, fish processing, body parts feeling discomfort.*

Different activities are generally performed like peeling, head and tail separation etc by them. The workers are generally socio economically poor, illiterate or less educated, having bodern of the family, lack of awareness and knowledge about occupational problems and about hygiene. It is observed that the female workers are working at a very low temperature, insufficient light, poor ventilation, in awkward posture and very unhygienic atmosphere in the processing industries (Saha *et al*, 2006). So they face many occupational health problems like eye irritation, itching, redness, watering, less vision, back pain, chest pain waist pain, blanching of hand, stiffness, rashes in different body parts, nausea, musculoskeletal pains, swelling of feet and injuries in hand and feet (Makinen

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& Hassi, 2009). A study was conducted to identify the method and work practices generally adopted in these processing industries and also to evaluate the physical and physiological stresses and problems they face.

Materials and Methodology

The occupational health problems of the female workers were studied in coastal districts of Odisha. A participatory survey work was conducted with a questionnaire written in local language to collect the information. In the fish processing industries the whole activity is done at a low room temp and hardly any personal protective equipment being used, the hands and fingers of the workers come in contact with ice and ice cold chlorinated water. At first four industries were selected randomly from the list of all the industries of that area afterwards random selection of subjects was done for only two industries. The number of participants for the survey was restricted to 107 nos. As a local taboo the female workers were reluctant to interact with the male scientist. Keeping this in view the help of female technicians were rendered. All of the 107 workers were interviewed with the help of an interviewer- administered questionnaire to collect information of their personal, occupational and work related details which also includes injuries. This was a study conducted with due approval from the Indian Council of Agriculture Research, New Delhi. The survey work was conducted with selected female workers in the age group of 18 to 50 years. Frequent visits were arranged to the processing industries, where first the information was gathered with participatory discussion. Followed by these details variables like headache, Injuries in fingers, hand numbness, pain in joints and blanching of fingers were selected for the study. Information on musculoskeletal disorder in different body parts were also gathered and then analysed.

Table No 1. Occupational characteristics of selected workers (n=107)

Variables	No	Percentage	
Age group ,yrs	<25	43	40
	25-35	24	23
	>35	40	37
Job duration, yrs	<2	18	17
	2-5	55	51
	>5	34	32

Education	Literate	82	77
	Illiterate	25	23
Marital status	Married	67	63
	Unmarried	40	37
Nature of job	Grading	11	10
	Peeling	98	83
	Mixed	8	7
Engagement, days/year	<100	16	15
	100-200	58	54
	>200	33	31
Income, Rs/day	<100	13	12
	100-150	38	36
	>150	56	52

Results and Discussion

The data of 107 no of female workers are collected, compiled and presented in Table no 1. The average age of workers was observed to be 30.2±11.4 yrs. Nearly 40 per cent of the women belong to the age group of 18-25 yrs, 23 percent in the age group of 25-35 yrs and rest 37 percent are in the age group of 35- 50 yrs. Mean job experience of the subjects was 4.5±3.24 yrs and almost 89 no (83%) had job experience of more than or equal to 2 yrs and 34 no (31.8%) had job experience of more than 5yrs. Out of the 107 no of the workers 82 no (77%) subjects were educated. During personal survey it was reported that 67 no (63%) of the selected workers were unmarried. Out of the 107 no subjects majority of the workers 98 no (83%) were engaged in the job of peeling, others in grading and other type of operation. As far as the morbidity is concerned the workers were suffering from injuries in fingers (86.9%), followed by hand numbness (85%), blanching during work (83.1%), pain in joints (81.3%), irritation in eye (42.9%), respiratory irritation (42%) & lowest headache (29.9%).

Table No 2: Different problems of the working during fish processing work

Problems of the workers	No of workers suffering	percentage
Headache	32	29.9
Eye irritation	46	42.9
Respiratory irritation	45	42.0
Cut injuries in fingers	93	86.9
Hand numbness	91	85.0
Pain in joints	87	81.3
Blanching during work	89	83.1

The body parts feeling maximum discomfort were reported to be maximum 92.5% in knee, 90.6% in neck, 78.5% in lower back, 77.5% in shoulder, 67.2% in upper back, 47.6% in thigh and 39.2% in eye. During the processing work it was observed that body temperature falls 2-2.5°F and palm temperature decreases 9-12°F. During the survey work it was observed that the unmarried girls work for their family. But when they get married some of them leave the job due to unwillingness of the family or due to overload of the work. So most of the workers were of 2 to 5 years job experience and nearly 51% (55 no) who are unmarried or just married. Few of the workers 18 no (17%) were with less than 2 yrs job experience who were unmarried. Except them 34 no (32%) were with more than 5 years experience. Among these workers some were forced to work to fulfil their family requirement and some of them have the support of their family. Most of the workers (58 nos, 54%) were engaged for a period of 100 to 200 days and 16 nos (15 %) less than 100 days in a year. From absentee from processing work resulting financial loss. During survey it was reported that married women workers have to work in processing industries to earn a bit apart from performing the household chores. So they undergoes very heavy work load and injury is very common for them which leads them to take rest. So their working days are less than the unmarried girls. Average income of the workers is Rs 100 per day. Younger workers do the work very fast and income Rs 150 per day (56 no, 52 %) but older workers cannot work fast .So their income less than Rs 100.00 (13 no, 12 %). Some workers daily income varies between Rs 100 to Rs 150 that is 38 no (36 %). There is no particular schedule of the work. Sometimes they work from 6 AM to 2 PM for 8 hours and sometimes they work in the afternoon.

According to the nature of job mostly peeling was done in the industry (83%, 98 no). The common posture adopted is squatting posture without any sitting arrangement which is very pain full and leads too musculoskeletal disorders. Similarly musculoskeletal problems of fish processing workers have also been reported and discussed by Chiang *et al* (1993) and Olafsdottir *et al* (2000).

During the survey work it was observed that their major problem is injury (93 no, 86%), hand numbness (91 no, 85 %), blanching of fingers (89 no, 83%) and pain in joints (87 no, 81 %). The workers work in a very cold condition where temp difference is about 10º F from the normal condition and body temperature. Workers below 25 years of age undergoes less temp difference while workers between 25 to 35 years undergoes high temp difference because these workers are all married and they have to work with water all the day. Repeatedly working in the cold condition decrease the sensation as a result problems are reported hand numbness, blanching of fingers. This study was not only highlighted the problems of occupational injuries in Indian fish processing industries and the factors associated with such injuries but also has strengthened the findings of studies conducted by Ghosh *et al* (2004) and Bhattacharjee *et al* (2003). They work in the room which is not provided with sufficient light and facility for optimum ventilation. So eye irritation (32 no, 29 %), respiratory irritation (45 no, 42 %), headache (46 no, 43 %) are reported. During the analysis it was observed that injuries are reported during peeling of fish, spear atity sharp head and tail. The injuries prevented the workers warning for lower duration.

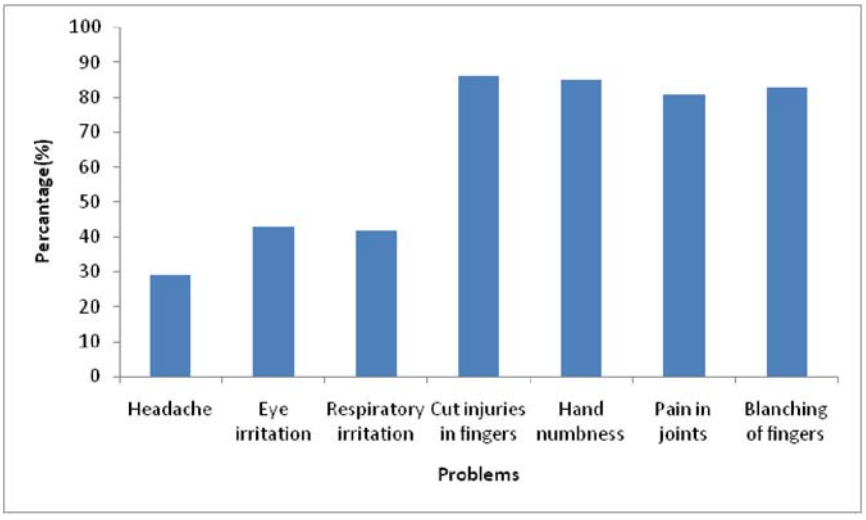

Fig No 1: Different problems during the processing work

The workers work in squatting posture. Some of them wooden planks for sitting but that are not of height is not suitable as per their stature. So pain in joints and musculoskeletal disorders are noticed. Pain occurs in neck (90%), shoulder (77%), lower back (78 %), and knee (92 %). Fish processing is a repetitive work. So it creates risk for the tendons due to the repetitive stretching and elongation of the fingers. The workers more than 2 yrs experience have more risk than the new workers. The workers working for more than 5 yrs undergoes more pain. They continuously cannot work for long time. Their musculoskeletal disorder, pain in joints and injury also more. So their absent from work also more which leads in reduction of their income which affects their family life also. Literate workers take pain killer or medicine after consulting with the doctors but illiterate workers are not aware of the medicine and they don't go for the doctor's consultancy. So they have more risk than the literate workers.

Conclusion

This study concludes that both nature of job of fish processing workers and work environment affects occurrence of work related injuries and occupational hazards. Prevention of such hazards may help in protection of workers from occupational injuries. The injury/fatigue may be reduced by use of goggles, apron, hand globes, provision of sitting arrangements and shoes. The light and ventilation should be abundant to the workers. Adequate work rest cycle during fish processing activities and proper medical facilities should be provided to them for reduction of injury and drudgery resulting safety and comfort of the processing workers in Odisha.

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Kitchen Garden for Boosting women Empowerment and Rural Income

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ABSTRACT

A garden has its beauty. It exists for aesthetic purposes, like a flower garden. But when a garden like a kitchen garden or vegetable garden is put to use it becomes useful for fulfilling human nutrition. It also becomes a source of income for the women of the families, particularly in the rural areas. This study highlights the same.A vegetable garden typically includes divided areas of land, intended to grow one or two types of plant or many varieties. It is usually located to the rear of a property in back yard of the house. It is also a mode of earning and increasing the nutritional quality of the food a family needs. During the year (2009) front line demonstration was conducted on back yard nutritional garden for the purpose of enrichment of balance nutrient diet of the rural community and participation of rural women. The study reveals that after investing a bare minimum amount of Rs. 250 in vegetable crops production a total profit of ten times i.e. Rs. 2000 to 2200 can be obtained and can improve diet and income of farmer families of the rural areas. This would not only enhance the income of the families but would also help in getting a proper balanced diet to the family in the country where nutrional requirement lacks in our daily food.

Key words: *kitchen garden; women; empowerment; income*

INTRODUCTION

Maximum population from the rural areas is dependent on agriculture. In agriculture work human labour plays an important role, especially the participation of women is of utmost importance in the field of farming in rural areas of the country.

It will not be out of place to mention that women does most of the activities in agricultural front. In rural areas neighbor surroundings are vacant which can be utilized for installing "Kitchen Garden" which will produce fresh vegetables supplementing the vitamin deficiencies of the human population. In addition extra produce will add to additional income by sell of the vegetables in the market, thus increasing the earnings of the family.

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MATERIALS AND METHODS:

Krishi Vigyan Kendra, Narsinghpur adopted village Khamariya and Dhamna of Narsinghpur district for the purpose of demonstration, "Self employment of village women by Kitchen Garden".

Women of the above villages actively participated in this demonstration. It has been studied and found that women around their houses have vacant lands which are not being utilized. Therefore it was suggested to use extra land for kitchen garden. Many of them are not utilizing this vacant land in a planned way. Krishi Vigyan Kendra Narsinghpur planned to demonstrate Kitchen Garden model and methods. In these villages 05 demonstrations were arranged and 25 women participated.

These participants were trained and shown the area/field. The constraints as perceived by respondents were scored on the basis of magnitude of the problem as per , *Meena and Sisodia, (2004)*. Results were analyzed prior and after demonstration and comparative study were done with vegetables produced and used. In addition the income from kitchen garden as extra income was studied and valued.

RESULT AND DISCUSSION-

It has been found after results of demonstration that labour women who are landless may also produce kitchen garden products around their house available and increase nutritional standard plus economical growth for their family. They have no knowledge about season and methods of cultivation of vegetables. Unavailability of quality seeds and planting materials of vegetables and fruits was the most important problem faced by the women. Similar result was found by *Kanbid, B.R. and Sharma, D.D. (1994)*

They have no knowledge of planned way/methods and use of insecticides.

Table no. 1Vegetable production and use in FLD

S.NO.	Vegetable Name	Seed quantity (Grams)	Average yield (Kg.)	Daily use (Every Saturday)		
				Before demonstration (Grams)	After (Grams)	Increase in use
1	Potato	500	50	200	700	150
2	Tomato	20	25	100	200	100
3	Palak	150	15	150	400	150
4	Brinjal	20	45	150	250	100
5	Carrot	100	20	200	400	100

6	Chilli	20	8	20	25	40
7	Radish	40	30	150	350	150
8	Cabbage	20	30	200	450	150
9	Cauliflower	25	35	200	350	100

According to table No. 1 they have used improved version quality of vegetable seeds and insecticide, by investing Rs. 250/- and earned income of Rs. 2000/- to Rs. 2200/-

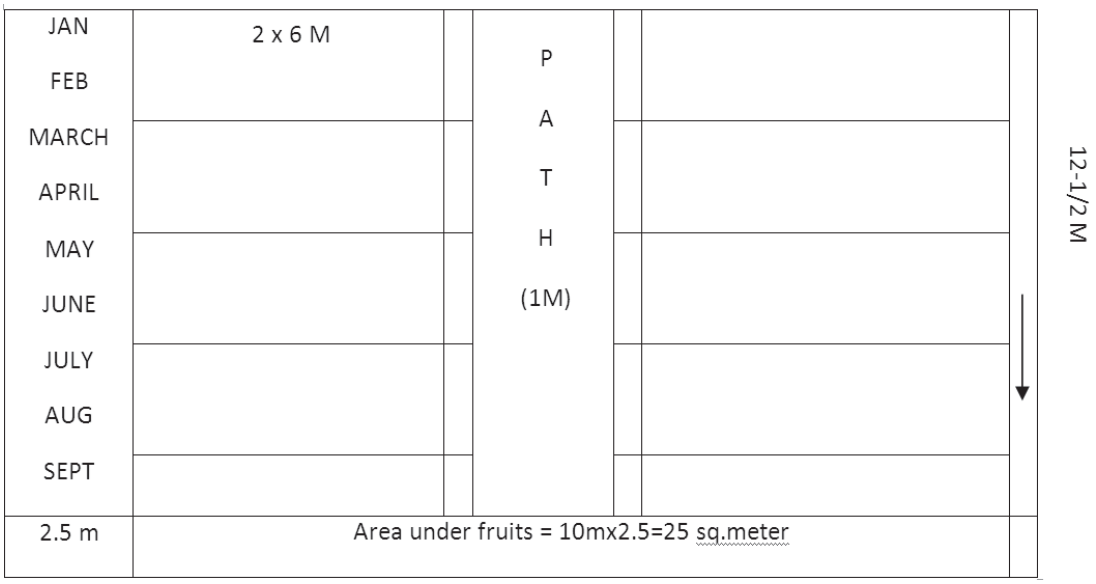
Table no. 2 Source of nutrients in daily diet

Cereals	Daily need for men (In grams) Vegetarian	Non-vegetarian	Daily need for women (in grams) Vegetarian	Non-vegetarian
1) Cereals	420	420	420	420
2) Pulses	80	65	60	50
3) Leafy vegetables	125	125	100	100
4) Other vegetables	75	75	75	75
5) Root vegetables	100	100	75	75
6) Fruit	100	100	75	75
7) Milk	600	400	600	400
8) Egg	-	60	-	60

According to Table No. 2, it indicates that in daily need of vitamins from food per head eg. Root vegetables - 100 gms. and other vegetables - 75 gms. In addition to above other vegetables should also be included in daily diet.

LAYOUT PLAN OF A NUTRITIONAL GARDEN

Total area under Nutritional Garden - 270 square meter (27x10m)



Total number of beds for vegetable growing = 10

Area of one bed = 18 square meter (4x4.5 sq. m)

Area under vegetables = 10 x 18 = 180 square meter (4.5 x 4 sq.m)

Area under fruits = 10 x 2.5 = 25 square meter

Area under path = (24.5 x 2), ridges (4 x 0.5 = 2 x 8) = 16 sq. m

In above model diagram has been showing how the get the fruits and vegetables throughout the year season wise and earned additional income.

Table No. 3 Availability of Nutritional elements and deficiency produces disease in vegetables.

Nutritional elements	Disease produced by deficiency	Nutritional elements available in vegetables
Vitamin 'A'	Night Blindness, Caritomalasia	Carrot, Tomato, Radish
Vitamin 'C'	Scurvy, Indigestion, Pain in gums	Chilli, Cauliflower
Vitamin 'D'	Rickets, weakness in bones	Potato
Vitamin 'E'	Infertility	Leafy vegetables
Vitamin 'K'	Blood clotting, Heart Disease	Tomato, Cabbage
Calcium	Improper growth of bones	Palak, chilli, Radish leafs
Iron	Anemia	Palak, Cabbage, radish leafs
Iodine	Thyroid gland disease	Leafy and root vegetables

According to Table No. 3 availability of vitamins in different vegetables has been shown, and if insufficient quantity of vitamins is being taken then disease will be produced in the body of the humans. The above knowledge was given to women participants.

CONCLUSION:

This study highlights that how kitchen gardens can help in improving the rural revenue all over India and also acts as a major source for women empowerment. The practicing farm women will be able to raise vegetables and fruits in backyard in a systematic manner. This way around the year the family requirements of vegetables and fruits is fullfilled. By using different types of vegetables and fruits they would grow through kitchen garden they would also get essential micro nutrients and macro nutrients in their diet. If surplus any, they can sell it in the market for additional income.

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Impact of Front Line Demonstration on yield and economics of Soybean (*Glycin max.* L.Merrill) crop in Hoshangabad District

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ABSTRACT

Hoshangabad district lies under central Narmada valley zone. The major cropping system of the district is Soybean-wheat or Soybean-gram. During Kharif season, major crop grown in the district is Soybean which is being cultivated in more than 2.0 lakh hectares. During last two three years it has been experienced by the farmers that productivity of soybean is in decreasing trend due to the continuous growing of the soybean in the same fields year after year as well as poor crop management practices. The major constraints observed is high seed rate, closer planting, late weed management practices, imbalanced doses of fertilizers, No use of IPM practices and non judicious use of agrochemicals etc. These factors are exclusively responsible for decreasing the productivity per unit area, due to the above reasons most of the farmers are harvesting 8-10 q soybean per ha only which is very less of the potential of the crop as well as varieties. It has been observed that Front line demonstrations played a very significant role in adoption and spread of the technologies because the concept applied in this is "Learning by doing" and "seeing is believing". As an impact of frontier technologies with improved management practices the yield recorded was 18.41q/ha as compared to 12.31 q/ha under farmers practice. Overall results of FLDs conducted revealed that there was significant increase in yield over farmers practices and it increases the yield of soybean about 49.55% during the year 2008-09.

Key words: *front line demonstrations; yield; economics ; soyabean*

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Introduction

India is among the largest producer and consumer of vegetable oils in the world. Oilseeds have been the backbone of agricultural economy of the country since long back. Oilseeds play the second important role in the Indian agricultural economy next to food grains in terms of area and production Soybean is one of the most important oilseed crop grown in the district. The oilseed crops registered momentum with the dawn of millennium. During the period of 2000-2009, the total nine oilseed crops are showing growth of 2.5 per cent, 5.2 per cent and 2.6 per cent in area, production and productivity respectively.

The total oilseeds area, production and productivity was 22.7 million hectares, 18.4 million ton and 810 kg/ha respectively during 2000-01, which increased to 27.6 million hectares, 27.7 million ton and 1006 kg/ha during 2008-09. Soybean has great nutritional significance, with over 40% protein and 20% oil, and has now been recognized as a potential supplementary source of edible oil and nutritious food. The protein of soybean is complete, because it supplies sufficient amounts of the kinds of amino acids required by the body for building and repair of tissues. Its food value in heart disease and diabetes is well known. Soybean is a rich source of edible oil containing no cholesterol and almost none of the saturated fats. Thus it constitutes an ideal food for heart patients and those who wish to avoid heart disease. After all it's an economic crop to go for. Soybean is an efficient nitrogen fixing leguminous crop. It does not require much water and other cultural activities/ management. The leaves are shelf shed, so no need for separating the pods and leaves, which decompose and add organic matter to the soil. In the year 2008-09 Soybean was cultivated in 51.43 lakh ha area in the MP with a production of 51.94 lakh tones. However , if we will see the per unit productivity of soybean in the state it is less than the many states in the year 2008-09 the productivity of soybean in the state 1010 kg /ha which was less than the states Andhra Pradesh (1040 kg/ha) and Karnataka (1015kg/ ha). It has been observed that the improved technologies disseminated through FLDs Contributes significantly in the yield increments as well net monetary returns as compared to farmers practice.

Material and Methods

Front Line Demonstrations has been conducted at farmer's field of the selected adopted village Ghatli of Kesla block of Hoshangabad district with the objective of quick transfer of the technology. Front line demonstrations were conducted during the *Kharif* season of 2008-09. Seeds of improved high yielding, resistant variety JS 9305 of soybean has been provided to 12 farmers for demonstrations in 5.0 ha area. The

soil samples has been collected from all these locations and analyzed. Soil testing results showed that at all these locations the soil was low in nitrogen content, medium in phosphorus and high in potassium content. All the selected farmers were trained with improved crop production technology like field preparation, importance of quality seeds, seed treatment, use of balanced doses of fertilizers, improved method of sowing, use of micronutrients Zinc and Sulfur, Integrated management of pest and diseases etc.

Result and discussion

The crop was sown with improved production technologies with 75 kg seed per ha, Seed treatment with carbendazim @3 gm per kg seed, Rhizobium & Phosphate solublizing bacteria culture@ 5gm/kg seed of each culture. The recommended dose of fertilizer 20:60:20 kg NPK/ha along with zinc sulphate@25 kg/ha was applied as basal application before sowing. However, the farmers have applied only 50kg Diamonium Phosphate with out the use of Rhizobium & PSB culture & has not used micronutrient zinc Sulphate. The data was analyzed using farmers as replication with analysis of variance with Randomized Block Design and presented in table below.

Table: 1. Yield and economics of Soybean crop in Front Line Demonstrations

Practices	No. of Nodules/ plant	No. of Pods/ plant	Grain Yield Q/ha	Cost of Cultivation Rs/ha	Gross Return Rs/ha	Net Return Rs/ha	B:C Ratio
Improved Technology	26.63	67.53	18.41	12066	34070.83	22070.833	1:2.82
Farmers Practice	6.70	27.61	12.31	10500	22785.83	12285.833	1:2.17
SEm ±	0.7838	1.2669	0.4003	33.834	740.693	740.693	
CD at 5%	3.3729	5.4518	1.7223	145.590	3187.2038	3187.203	

A very significant difference in yield have been found in yield of both the treatments i.e farmers practice and improved technology. Result revealed that average grain yield of 18.41 qt /ha was recorded under technology demonstrated. However, it was 12.31 qt/ ha under farmers practice, similar results has been reported by the Yunuasa & Ikwelle 1990. Data presented in Table: 1 showed that under improved technology demonstrated there was 49.55% increase in yield over farmers practice has been bagged. A gross return of Rs. 34070.83/

ha was achieved under improved practice where as it was 22785.83 Rs/ha under farmers practice. When we look net return and B:C Ratio of both the practices it was Rs.22070.83/ha with B:C ratio of 1:2.82 under improved practice as compared to farmers practice where it was Rs 12285/- and 1:2.17 . Dbruin & Pederson 2008 has also reported the same results. These significant increases in yield were due to the adoption of improved production technologies.

CONCLUSION:

During last two three years it has been experienced by the farmers that productivity of soybean is in decreasing trend due to the continuous growing of the soybean in the same fields year after year as well as poor crop management practices. The major constraints observed is high seed rate, closer planting, late weed management practices, imbalanced doses of fertilizers, No use of IPM practices and non judicious use of agrochemicals etc. These factors are exclusively responsible for decreasing the productivity per unit area, due to the above reasons most of the farmers are harvesting 8-10 q soybean per ha only which is very less of the potential of the crop as well as varieties. It has been observed that Front line demonstrations played a very significant role in adoption and spread of the technologies because the concept applied in this is "Learning by doing" and "seeing is believing".

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Women Based Horticultural Livelihood and Household Food Security A Case of Angul District of Odisha

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ABSTRACT

Food security is integrally linked to livelihoods. Gender based inequalities all along the food production from 'farm to plate' impede the attainment of nutritional security at household level. Horticulture based livelihood activities contribute 39% in the district context and women play vibrant role in the same with optimal intra household use of resources. The women had higher deficiency of iron and vitamin A than compared to men in the household. After the intervention of Krishi Vigyan Kendra through Nutritional Gardening which provides significant amount of vegetables i.e., 364.53gm /person/day contains 173.56Kcal against the minimum requirement 200gm/person/day. The deficit in Fe, Vit A & Vit C consumption is reduced to the extent of 33% in Women by regular intake of proper amount of vegetables. Respondents of the age category 25-46years participated extensively in the horticultural activities and were found to be 2.5 times better off than their counterparts. It is suggested among govt. and policy makers to be more sensitive in formulation of policies in favor of farm women to improve their nutrition security.

Key Words : Body Mass Index, Nutritional Garden, Krishi Vigyan Kendra, Women

Introduction

For a healthy body and mind good nutritious food is a must and also for development of an individual. Mahatma Gandhi had aptly said that a hungry man cannot think and contribute to the progress and development of the nation. The extent of under nutrition vis-à-vis malnutrition is always influenced by the availability of food resource and employment opportunities. Lack of these key factors is present in many parts of Orissa. In Orissa nearly 47% of people are undernourished.

Horticulture based livelihood activities contribute 39% in the district

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context and women play vibrant role in the same with optimal intra household use of resources. In spite of scarcity of land and the small size of land holding, the majority of rural households (including those considered functionally landless), usually have small plots of land next to their homesteads that can be used to grow essential commodities for their subsistence. These fragments of lands referred to as homestead gardens are usually smaller than 500 m^2 surrounding the homestead mainly with space for livestock, trees and vegetable beds. Homestead based intervention like vegetable gardening has been playing an important role to alleviate poverty for resource poor people of developing country though disaggregated monitoring of food security is critical, still a study was conducted to analyze the role of women in achieving the food security status.

Objectives

The present study was therefore, taken up to find the nutrient intake pattern of the rural households. The households dependent solely on agriculture, of small and, marginal farmers and of agricultural landless laborers, which are all more at risk regarding malnutrition, have been studied in details. The possible linkages between programs of the departments of agriculture, health and nutrition interventions have been studied. The specific objectives of the study were:

1. To find out the severity of nutrition status among male and female in rural households.

2. To assess the nutrition intake performances between traditional and developed homestead vegetable gardening.

Methodology

The present epidemiological and biochemical study has been undertaken in the district Angul, Odisha (India). The samples survey has been undertaken from the area covered and 60 subjects were selected randomly for questioning regarding the different aspects of epidemiology. Out of these 60 samples, 30 are male and 30 are female from 30 rural households.

On the basis of WHO criteria for body mass index categories malnutrition among subjects can also calculated. A WHO (1997) criterion was used to define the malnutrition and obesity:

(a) Malnourished<18.50 kg/m2

(b) Normal: 19-24.9 kg/m2

(c) Pre-Obese: 25-29.9kg/m2

(d) Obese: >30kg/m2

The body mass index is a useful tool in both clinical and public health practice for assessing the nutritional status. In this paper, malnutrition in women and men are discussed.

The studies have examined the contribution of homestead gardens to food and nutrition security but the emphasis was only on whether the garden provided adequate amount of micronutrients such as vitamin A, iron. An accurate assessment of food and nutrition security requires that measurement of foods broken down into how calories and nutrients are being consumed. That is why per capita consumption does not reflect how much energy/calorie and nutrient is being consumed because different vegetables have different levels of calories.

The respondent was asked to name all the raw ingredients used in each preparation. Wherever possible, the weight (in grams) of each solid ingredient used in the preparation was obtained. In the case of 'chappati' the total number cooked was asked. In the case of fruits, buns, etc., the total number consumed by the family was found out. Based on the actual quantity of food consumed by each member of the family, intake of various nutrients by the individual was estimated by following the nutritive value standards of different commodities (Gopalan et al. 1996). The nutrition gap in terms of food groups and nutrients were worked out as per the formula given below. This method would reveal the pattern of food/ nutrients intake by different members of the family.

Nutrition Gap = RNi-ANi/RNi*100

Where, RNi =Recommended level of ith nutrition as per Annexure II and III ANi = Actual consumption level of ith nutrition

Result and Discussion

In the present study 10% males and33.3%females were malnourished in the Angul district of Odisha

Table 1:

Random study of males and females according to the body mass index based categories from the population of district Angul, Odisha (India). N =60.

Status of subjects	Male (n=30)	Female (n=30)
Malnourished subjects n (%)	18.13(10)	17.63(33.33%)
Normal subjects n (%)	23.07(63.33)	20.47(53.33%)
Pre obese subjects n (%)	25.97(23.33)	26.01(13.33%)
Obese subjects n (%)	30.22(3.33)	00(00%)

BMI: Body Mass Index, kg/m2
n: Number of subjects in each group ;

N: Total number of subjects
Table 1 reveals that maximum women are pre obese (26%) and significantly men are obese.

Table 2 Nutrients consumption in rural household (Shortage to RDA in %)

Gardening System	Average per capita Consumption Kcal(gm)		Increase in vegetable consumption	
	Male	Female	Male	Female
Traditional	87.56(126)	56.35(89.34)	189%	135%
Nutritional	179.83(364.83)	112.64(210)		

Table 3 shows that Nutritional garden provides significant amount of vegetable i.e., 364.56 gm/person/day that contain 179.83 kcal against the minimum requirement of 200 gm per person/day. On the other hand, the traditional garden provides only 126 gm that contain only 87.56 kcal per person in case of male. But in case of female due to some taboos and customs in rural families' consumption of vegetables is less in both traditional and nutritional gardening.

Nutritional knowledge of women:

The maternal knowledge on nutrition is an important factor in influencing nutritional intake of household members. In this study, the women household heads were asked to provide responses to a set of fifty questions related to nutrition and then the scores were computed for each respondent. It can be inferred from Figure 1 that in all age group most of the respondents had low level of knowledge. Within them, the knowledge level was relatively better in the 25-46 yr age group.

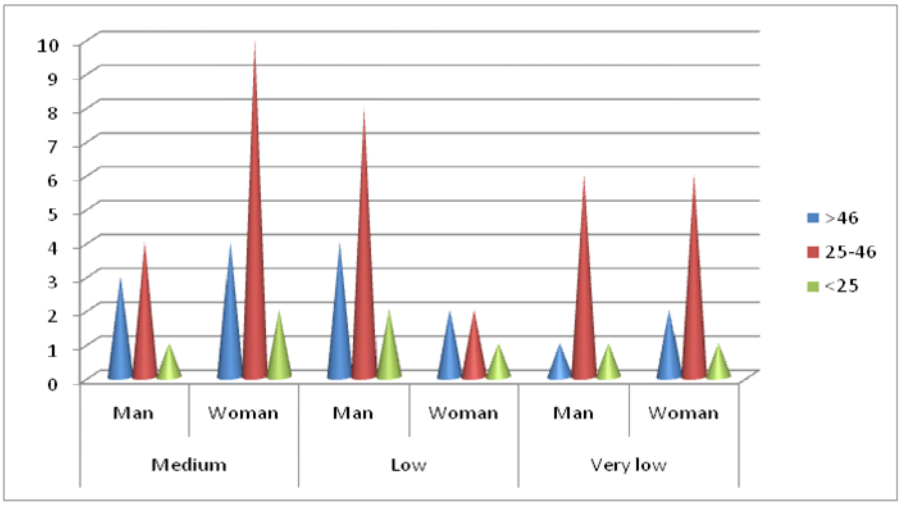

Figure 1. Nutritional knowledge of women

Respondents of the age category 25-46years participated extensively in the horticultural activities and were found to be 2.5 times better off than their counterparts. It is suggested among govt. and policy makers to be more sensitive in formulation of policies in favor of farm women to improve their nutrition security.

Conclusion

1. The agricultural regional research stations of State Agricultural Universities, Indian Council of Agricultural Research, Krishi Vigyan Kendras (KVKs) etc., can play a greater role in developing regional nutritional security plans and strategies in co-ordination with district level line departments. Joint action can be taken up in the area of nutrition gardening, identification of indigenous micronutrient-rich fruits and vegetables, developing varieties high in micronutrients, especially iron and vitamin A.
2. State Agricultural Universities, Home Science colleges, nutrition agencies, and KVKs can take up joint training programs for nutrition and extension officials/workers in the management of nutritional gardens.
3. The development departments jointly can help in forming Self-Help Groups (SHGs) from out of the 'at-risk' households. Training programs can also be organized for these SHGs in the areas of financial management, knowledge sharing, establishing grain bank, etc
4. Horticulture Departments can promote village co-operatives with social marketing concept for sale of fruits and vegetables especially in the non-vegetable farming areas. Such a strategy would improve nutritional knowledge as well as nutrient intake.
5. The development departments and Food Science and Nutrition Departments of State Agricultural Universities can jointly assist in the formation of community level agro-based small scale processing units which can produce dehydrated leaf powder of nutrient rich spinach, drumstick, agathi, spirulina, etc.
6. Horticulture department & KVK are implementing various schemes, trials, demonstrations for the development of fruits and

vegetables in the district. Some of the significant schemes are nutrition gardening, mushroom cultivation and vegetable minikit scheme for popularizing hybrid vegetable seeds. Before, supplying seed/planting materials, the real nutritional requirement of average poor household in the region is to be worked out. This would facilitate establishment of well-organized nutrition gardening.

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Correlates of Adoption of Vegetables by Tribal Farmers of Keonjhar District of Odisha

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ABSTRACT

Odisha "placed a respectable position in vegetable cultivation .But due to some irreparable conditions like (lack of input supply in proper time ,lack of idea on package of practices, lack of marketing and processing industry facilities and lack of financing lack of storage facility)Farming people have low adoption pattern for vegetable cultivation. In Odisha out of 30 districts Keonjhar is one of the progressing tribal districts to conquer over the rank in vegetable cultivation due to cool temperate condition and vegetable forcing areas in the bank of the Baitarani River. The study concludes that there are good practices of vegetable cultivation in Keonjhar district. The tribal vegetable growers require community organizations, team work, and leadership to lead them and enable them to take decision with risk taking capacity. They also require sufficient training and demonstrations to develop their knowledge and skill competency , credit facilities, incentives and minimum support price, easy disposal of produce.

Key words: Vegetable cultivation, Tribal farmers

Introduction

Vegetable cultivation is a part of Horticultural science. In scientific word it is termed as "Olericulture".In global context "India" placed 2nd position after china in vegetable cultivation.(Both in area and production).But we are proud to know that our country placed 1st position in cauliflower,2nd in onion ,3rd in cabbage and 4th in potato respectively in the world. As per the recommendation made by Indian Council for Medical Research (ICMR),the use of vegetables per day is 280 gm. But now days we avail less than equal to 100 gm due to poor production and adoption pattern of vegetable production in India. After getting conscious on the vegetable demand now farming people giving more emphasis on vegetable crops in order to

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meet the need of consumers ,"Odisha "placed a respectable position in vegetable cultivation .But due to some irreparable conditions like (lack of input supply in proper time ,lack of idea on package of practices, lack of marketing and processing industry facilities and lack of financing lack of storage facility)Farming people have low adoption pattern for vegetable cultivation.

In Odisha out of 30 districts Keonjhar is one of the progressing tribal districts to conquer over the rank in vegetable cultivation due to cool temperate condition and vegetable forcing areas in the bank of the Baitarani River. Apart from these "Kudumi" tribes (Mahanta families) have a greater effort on vegetable cultivation actively. In Keonjhar district Swampatana, Saharpada, Anandapur, Ghatagaon, Hatadihi; Telkoi blocks have remarkable vegetable production due to "Gola" and "Chasa "families. In this district mainly cabbage, cauliflower, pumpkin, cucumber, pointed gourd, bitter gourd, parwal, onion and potato are cultivated.

Objectives

1) To identify the vegetable innovations adopted by the tribal vegetable farmers and reasons for adoption and diffusion.

2) To list out the opinion of tribal vegetable farmers on social, economic, and management constraints and their suggestions.

Methodology

The study was under taken in Keonjhar district of Odisha. The district as well as blocks were selected purposively where as random sampling technique was followed for selection of gram panchayats, villages and respondents. Patna, Champua & Jhumpura- these three blocks were purposively selected as these are dominantly vegetable pockets. On the basis of feedback from the local extension workers, twelve villages were selected randomly through lottery system. List of tribal vegetables growers of these twelve villages were prepared. From the list 10 percent tribal farmers were also randomly selected as the respondents of the study. The total sample size was 145 tribal vegetable farmers.

Result and Discussion:

The researchers had studied the nature of vegetable adoption and reasons for the adoption. The result is depicted in the following table.

Types of vegetable adoption

The sample area was a predominant patch for vegetable cultivation of the state and the district. The tribal farmers had cultivated various types of vegetables for mainly marketing purpose.

Table-1: Types of Vegetable adoption by the respondents (N=145)

Sl.No.	Types of the Vegetables	Frequency	Percentage	Ranking
1.	Cauliflower	72	49.65	VI
2.	Cabbage	68	46.89	VII
3.	Tomato	112	77.24	II
4.	Brinjal	108	74.48	IV
5.	Okra	111	76.55	III
6.	Chillies	132	91.03	I
7.	Pumpkin	98	67.58	V
8.	Cucumber	32	22.06	IX
9.	Leafy Vegetables	45	31.03	VIII

The data from table-1 depicted that the sample farmers had adopted a total of nine types of vegetables. It was further observed that chilies was cultivated by maximum number of farmers (91.03percent) followed by tomato(77.24 percent) and okra(76.55 percent).The more adoption of chilies in the sample area was due to the adoption of Pusa Jwala variety by them and good climate fit for chilly as well as market demand for capsicum cultivation in their locality.

Varietal adoption of Vegetables

The respondents were asked to give their adoption on varietal selection for vegetable cultivation. The response is depicted in following table.

Table-2: Varietal Innovations adoption (N=145)

Innovations	Frequency	Percentage	Gap Percentage
Use of Local/ Indigenous Variety	79	54.48	45.51
Use of HYV	36	24.82	75.17
Use of Hybrid	30	20.68	79.31

Table-2 depicted more popularity of using local varieties by tribal farmers. This was due to taste, cultural practice etc. and the adoption percentage was 54.48. They had less priority on adoption of HYV and hybrid varieties as the percentage adoption were 24.82 percent and 20.68 percent respectively. This occurred after taking new initiatives by NGOs, Seed companies & Govt. in seed village scheme.The gap percentage was highest in case of Hybrid variety (79.31 percent) and high yielding variety (75.17 percent) adoption and it had direct impact on production and productivity because the farmers with local varieties yield less in comparision to improved ones.

Plant Protection adoption

A various number of diseases and pests attack vegetable crops. Disease may occur due to fungal, bacterial and viral infection. The vegetable cultivators must have idea about different diseases and pest like, special feature symptoms, nature of damage, control nature and integrated pest management etc. So accordingly they followed various Measures for preventive measures as cited in the following table.

Table-3 : Disease & Pest Management Related Innovations (N=145)

Related Innovations	Reasons for Adoption	Frequency	Percentage	Gap Percentage
1.Using IPM & IDM Techniques being recommended by Govt./NGO trainers	Using as holistic, sustainable way of package approach for effective insect-pest and disease management.	48	33.10	66.89
2.Using Various traps & cards for controlling Insects(Pheromone trap, light trap,Tricho card etc)	Traps act as the warriors for killing and trapping enemy by protecting crop in natural way.	27	18.62	81.37

3.Using Agronomic Measures for less dieseas(Crop rotation, Cropping pattern)	It creates eradication of disease in crop geometry by cropping pattern change and rotation and also creates resistant against diseases.	32	22.06	77.93
5.Using good disease & Pest resistant Varieties of seeds/Seedlings(BT variety & others)	Disease resistant variety creates avoidance by secretion of foul order/ bitter taste for the insect pests. So less expensive in disease pest management.	29	20	80
6.Use of guard crop/Cover crop/trap crop for minimization of pest attack	Act as security agent or boundary for protecting crops from any loss	9	6.20	93.79

From this table we may study the reality of the plant disease and pest management properly. From the data it may be concluded that 33.10 percent respondents followed the principle as well as concept of IPM and IDM due to training and campaign programme by NGOs and line departments in this locality and yielded a remarkable result among all measures. From the samples 22.06 percent farmers were using agronomic measures followed by 20 percent respondents using good resistant varieties for betterment in crop production by suppressing the negative factor of crop failure. Use of various traps had given positive response to some farmers (18.62 percent). This was because of on field demonstration by ATMA Extension Reforms Scheme. Only 6.20 percent respondents were opined about use of cover/guard crop. It was gradually increasing, as it was less costly and positive effect on crop field as per their opinion.

Constraints in vegetable cultivation

The study is under taken to ascertain various constraints associated with vegetable cultivation in the study area. Constraints like social, organizational,technological, economical, management, policy

support, organizational, advisory service, credit and miscellaneous etc. were taken into account for analyzing various constraints. The schedule was framed with three point's continuum over the frame statements under these variables. Sufficient interaction was made to collect factual information to arrive at conclusion and feasible recommendations.

Among the social constraints, ignorance and negligence by government (42.75 percent) ranked top by the respondents along with localiteness due to traditional norms (24.13 percent). In case of organizational constraints, inadequate government support and guidance (46.89 percent) was the important one as quoted by the farmers. Inadequate demonstration & lack up follow up service followed by lack of intelligence and technical know-how were the major tech-hindrances in adoption of vegetable, as opined by the growers. Less support price for vegetable crops, insufficient credit facilities, lack of easy disposal of produce which were found to be the major economical constraints for the cultivators. Poor quality seed (29.65 percent), unreasonable seed price(20 percent),un availability of fertilizers(17.24 percent) were considered as major constraints in input supply. Severe weed infestation (86.89 percent), more disease and pest attack(82.06 percent),in sufficient skill to manage(31.72 percent) which were found to be more important in technological constraints.

Conclusion

The study concludes that there are good practices of vegetable cultivation in Keonjhar district. The tribal vegetable growers require community organizations, team work, and leadership to lead them and enable them to take decision with risk taking capacity. They also require sufficient training and demonstrations to develop their knowledge and skill competency , credit facilities, incentives and minimum support price, easy disposal of produce. If all these things are provided to the vegetable growers then there will be definitely increases in area, production and productivity of vegetables in Keonjhar district. The district can contribute significantly for the vegetable requirement of the state as well as increase the economic status of tribal farmers.

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Study of Vulnerabilities affecting Livelihood of Fishermen Communities of Gopalpur coast, Odisha

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ABSTRACT:

The present study was conducted to find out the vulnerabilities affecting livelihood of fishermen community of Gopalpur coast of Odisha. Fishing communities of Gopalpur coast of Odisha are vulnerable to hazards at household level, non- successful fishing trips and to risks in the surrounding environment like natural calamities, resource depletion and national economic crises. The vulnerability that affects livelihood of fishermen community have been classified into four categories such as i) Trends, ii) Shocks, iii) Seasonality, and iv) Others. From the present study, it was observed that natural calamities like floods, cyclones and tsunamis are the most vulnerable to the poor fishermen community followed by fluctuating sale price of the product and erosion and environmental degradation. Besides, the cumbersome procedure for obtaining bank loan was in 4th rank followed by decline in fish catch and limitation of peak fishing season. Looking to the different perception level of fishermen community under study, natural calamities (like flood, cyclones) and fluctuating sale price of fish and fishery products were considered most vulnerable followed by decline in fish catch for all the social groups. Social issues such as diseases like AIDs were more vulnerable for low social groups and availability of organised retail marketing (ORM) place was considered vulnerable by higher social group.

Introduction:

Livelihoods are defined as the way people combine their capabilities, skills and knowledge with the assets such as natural, financial, human, physical, and social, at their disposal to create activities that will enable them to make a living. Livelihoods of coastal fishers are diverse (Ellis, 2000) and are made up of multiple activities to achieve a desired outcome. Major effort has been made recently to understand the nature and causes of poverty in fishing communities. The two components of

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poverty alleviations are (1) Poverty reduction and (2) Poverty prevention which includes reduction of risk and the increasing of safety net functions in a general context of vulnerability.

Vulnerability can be conceptualized as the combinatory result of: 1. Risk exposure (the nature and degree to which a house hold or community is exposed to a certain risk like natural disaster, conflicts, macroeconomic changes etc); 2. Sensitivity to this risk measured for instance through the dependence of the household or community on the fishing activities for its food security or income generation; and 3. The adaptive capacity of the house hold or the community to the risk considered (the ability or capacity of the house hold to adapt in order to cope with changes) (FAO, 2006). Fishing peoples are vulnerable to hazards at household level such as sickness, premature death, insecure employment conditions and non- successful fishing trips as well as to risks in the surrounding environment like natural calamities, resource depletion and national economic crises (Perera, 2003). Therefore, the present study was conducted to find out the vulnerabilities affecting livelihood of fishermen community of Gopalpur coast of Odisha.

Research Methodology:

The study was undertaken during 2011 along Gopalpur coast of Ganjam district, Odisha. Six villages namely, Gopalpur, Sanaarjipalli, Badaarjipalli, Haripur, New Buxipalli and Purunabandha and 120 respondents were selected through proportionate random sampling technique. The data were collected through personal interview method administering a pre-tested structured interview schedule. The vulnerability that affects livelihood of fishermen community have been classified into four categories such as i) Trends, ii) Shocks, iii) Seasonality, and iv) Others. Altogether six statements of trends, three statements of shocks, four statement of seasonality and two statements of others were included as vulnerability to the community. The statements under each component were highlighted in order of importance through ranking. The level of perception was decided taking difference between maximum and minimum score obtained by the sample with regard to independent variables such as personal, social, economic, communication behavior, marketing behavior, fishing behavior and training. Simple statistical methods were used for analysis and interpretation of results.

Results and discussion:

Following an analysis of people strengths and access to assets, it is important to understand the vulnerability context in which the assets exist. This revolves around the external factors that influence the levels and use of asset. These external factors are often related to causes of poverty, which makes poor people, in particular, vulnerable. For many poor rural people, changes in natural capital can particularly affect their vulnerability, as they are heavily dependent on natural resources. Three major types of external factors can be recognized as 1.Trends 2.Shocks 3.Seasonality and 4.Others. Table 1 shows the vulnerabilities of the fishermen communities of the six villages along Gopalpur coast.

1. Trends:

In many villages, a major long term negative trend has been observed in relation to the quantity and quality of natural resources available. Over the past decades, fish resources have declined very much. Besides, the loss in biodiversity may have negative drawbacks on the remaining resources as the marine ecosystem has been disturbed. The main reasons for the increased pressure on natural resources are a rapid population growth and urbanization.

In the present study, the vulnerable parameters under this category include (a) decline in fish resource and catch (b) erosion and environmental degradation (c) loss of biodiversity (d) ban period of fishing (e) specific ban period due to bio-conservation (f) social issues and (g) fluctuating sale price. Among these parameters, fluctuating sale price of fish ranks first followed by decline in fish catch, loss of bio diversity and social issues like diseases etc., ban period due to fishing and specific ban period due to bio-conservation did not give much attention to the respondents of coastal communities under study.

There is a high degree of resource depletion, erosion and environmental degradation in all the villages under study. This trend of increasing vulnerability has been coupled with some other trends like sea level rise, increasing population, resource conflicts, technology change and incidences of diseases in those coastal areas.

In all the six study villages, depletion of marine resource like fish possess a serious threat to people's long term livelihoods. In most of the daily fishing trips the poor fishers fail to get any substantial catch. But, they are wasting a lot of fuel and other costs along with their labour time. Fishermen recognize that declining fish supplies have led to an increase of selling price

at their level. But, because of dwindling fish supplies the trend of selling price fluctuated much. Erosion in the coastal villages is a serious threat to lives and livelihoods of the poor stake holders. The fishing hamlets are under the active process of erosion. This caused serious vulnerability to livelihoods of poor.

The prevalence of disease among the poor people and their livestock is also a trend in vulnerability to the lives and livelihoods. Due to poor health and sanitary conditions, outbreaks of diseases like diarrhea, dysentery, cholera, hepatitis, fever etc. are quite common among the poor people due to their overcrowding and contiguous living-cum- ill sanitation. Besides, many of the young people of the villages go to other states for wage earning and suffer from AIDS causing a big threat to their own lives and livelihoods.

2. Shocks:

Shocks are unpredictable events affecting livelihoods such as natural disasters including floods, cyclones, tsunamis and disease epidemics. These natural disasters effect on people's lives and properties. Many lives are lost and physical infrastructure and assets are wiped out such as loss of fishing gear, roads, bridges and transport linkages being washed away, there by again limiting access to health and education services and employment opportunities in other sectors. According to Haque and Blowfield (1997) "Coastal fishing communities are more susceptible to weather condition than any farming communities. Not only has the size of catch affected by the weather, rain and storms prevented artisanal fisher folk from setting out to sea".

The important parameters under this category in the present study include (i) natural calamites (ii) hartals / strike - bandh and (iii) piracy in the sea in the order of rank as perceived by the respondents of coastal communities under study in the Ganjam district.

All the six villages under study are prone to frequent cyclones and floods. Besides the storms and floods in almost every year, the devastating super cyclone (accompanied by tidal surge) of 1999 and tsunami of 2004 caused severe damage to the lives and livelihoods of the villagers. This made many of the villagers homeless with consequent loss of their assets, non delivery of the fish catch because of blocked of the roads and communication for a long period due to flood.

Coastal poor livelihoods are also affected by frequent hartals and other political unrest. During these days, the perishable products like fish get damaged and the poor people have to sell those at a very cheap price. Another kind of

shock is piracy in the sea that seriously affects the livelihoods of poor fishers. Now a- days, piracy has seen a rapid increase as compared to the past. In addition, theft of livestock and poultry is also prevalent in the villages. Another kind of shock is accident on the sea and road. In almost every year, there are reports of accident in the sea due to which the poor either loose their lives or limbs.

3. Seasonality:

Seasonality includes recurrent changes throughout the year that influences people's access to assets and livelihood outcomes. The major fishing season may occur during rainy season, thereby limiting the cash income to a relatively short period per year, imposing a strain on the house hold cash flow and house hold food security during the lean season. Transport of fresh fish might be more unreliable in the rainy season as roads may become flooded. Other aspects of seasonality include fluctuation in prices, marketing opportunities, health (e.g. higher risk of malaria during rainy season) and availability of alternative employment opportunities.

In the present study, the vulnerable parameters under this category include (a) limitation of peak fishing season (b) lack of information networking facilities (c) lack of organized retail marketing place and (d) lack of facilities for fish utilization. Among these parameters, limitation of peak fishing season ranks first followed by lack of facilities for fish utilization and lack of organized retail market place. The parameter "lack of information networking facilities" did not give much attention by the respondents of fishing communities of the villages under study.

The livelihoods of the poor stakeholders of coastal villages are at a very high exposure to seasonal fluctuation. The fishers as well as the peasants, petty traders etc. of the coastal villages are quite vulnerable to seasonal fluctuations, as the coastal life is characterized by a high degree of seasonality and uncertainty. The major fishing season is only for 5 months (mid September. to mid February.) and the catch is relatively thin at the beginning and towards the end of this period. Moreover the catch per unit effort is declining day by day and since they are getting a scanty amount of fish, and consequently a reduced income, even in the peak season.

	Sana Arjipalli	Bada Arjipalli	Haripur	New Buxipalli	Gopalpur	Purunabandl
hocks	1. Super Cyclone-1999 2.Tsunami-2004 3.Flood-Every year	1. Super Cyclone-1999 2.Tsunami-2004 3.Flood-Every year 4.Prnacy in the Sea 5 Hartals Strikes Bandha	1.Super Cyclone-1999 2.Tsunami-2004 3.Flood-Every year 4.Prnacy in the Sea 5 Hartals Strikes Bandhs	1.Super Cyclone-1999 2.Tsunami-2004 3.Flood-Every year 4.Prnacy in the Sea 5 Hartals Strikes Bandhs	1.Super Cyclone-1999 2.Tsunami-2005 3.Flood-Every year 4.Prnacy in the Sea 5 Hartals Strikes Bandha	1.Super Cyclone 1999 2.Tsunami-2004 3.Flood-Every ye
rends	1. Declining Fish Catch 2. Land erosion by Sea. 3. Loss of Biodiversity.	1. Declining Fish Catch 2. Land erosion by Sea. 3. Loss of Biodiversity.	1. Declining Fish Catch 2. Loss of Biodiversity.	1. Declining Fish Catch 2. Land erosion by Sea. 3. Loss of Biodiversity.	1. Declining Fish Catch 2. Loss of Biodiversity.	1. Declining Fish Catch 2. Loss of Biodiversity.
easonality	1. Imitation of peak fishing season. 2. Lack of information networking facilities 3. Fluctuating sale price and place of marketing 4. Social issues	1. Imitation of peak fishing season. 2. Lack of information networking facilities 3. Fluctuating sale price and place of marketing 4. Social issues	1. Imitation of peak fishing season. 2. Lack of information networking facilities 3. Fluctuating sale price and place of marketing 4. Social issues	1. Imitation of peak fishing season. 2. Lack of information networking facilities 3. Fluctuating sale price and place of marketing 4. Social issues	1. Imitation of peak fishing season. 2. Lack of information networking facilities 3. Fluctuating sale price and place of marketing 4. Social issues	1. Imitation of p fishing season. 2. Lack of information networking facil 3. Fluctuating sa price and place marketing 4. Social issues 5. Lack of faciliti for fish utilisatio
thers	1. Cumbersome procedure for Bank loan	1. Cumbersome procedure for Bank loan	1. Cumbersome procedure for Bank loan	1. Cumbersome procedure for Bank loan 2. Lack of exposing capacity building	1. Cumbersome procedure for Bank loan	1. Cumbersome procedure for Ba loan 2. Lack of exposi visit for capacity building

In sum, when people are unable to deal with these trends, shocks and / or seasonal changes they will become increasingly vulnerable. It is important to keep in mind that the vulnerability context can differ among the different social groups on the levels of vulnerability which is related to their individual combination of assets available and accessibility to them. Policy interventions may be required to prevent people from becoming more vulnerable and therefore, unable to cope with shocks, trends and seasonal changes. Similar report was presented by Tietze *et al.* (2007).

The average score and rankings of the vulnerable items of the fishing communities of Gopalpur coast is mentioned in Table 2.

Table 2: Average score and ranking of vulnerable items of fishing communities of Gopalpur coast.

Sl.No	Vulnerable Parameters	Total score	Rank
01	Ban period of Fishing	7	XV
02	Specific ban period due to bio conservation	1	XVI
03	Natural calamities like cyclones and floods	120	I
04.	Social issues viz: disease	39	XIII
05	Decline in fish catch	105	V
06	Piracy in Sea	74	IX
07	Hartals / strikes and bandh	86	VIII
08	Lack of information networking facilities	11	XIV
09	Lack of facilities for fish utilization and preservation	95	VII
10	Loss of bio diversity	54	XII
11	Fluctuating sale price	116	II
12	Lack of organized retail marketing place	63	XI
13	Limitation of peak fishing season	102	VI
14	Cumbersome procedure for bank loan	109	IV
15	Lack of exposure for capacity building	67	X
16	Erosion and environmental degradation	111	III

From the present investigation it was observed that natural calamities like floods, cyclones and tsunamis are the most vulnerable to the poor fishermen community followed by fluctuating sale price of the product and erosion and environmental degradation. Besides, the cumbersome procedure for obtaining bank loan was in 4th rank followed by decline in fish catch and limitation of peak fishing season. General ban period of fishing (15th April to 1st June every year) and specific ban period due to bio conservation like turtle etc were considered as least vulnerable to the fishing communities. The traditional fishermen are not generally affected by this ban period. Similar report was presented by Pattanaik (2006) for the fishing communities of chilika lake. Salagrama (2006) had also reported the trends in poverty and livelihoods in coastal fishing communities of Orissa state.

Vulnerability context of fishermen community of different perception level:

The vulnerability to fisherman communities differs with different social groups of varied perception level. In the present study, as much as 15.8% of the differential score constituted the low and high perception of samples, individually leaving the rest in between, under medium level. However, the low perception level fishermen group has different vulnerability than high perception level (Table 3).

Table 3: The vulnerability context of fishermen communities of different perception level.

Sl No.	Vulnerability parameters	Low		Medium		High	
		Average scores	Rank	Average Score	Rank	Average Score	Rank
1	Ban period of fishing	0.05	XI	0.06	XII	0.05	XII
2	Specific ban period due to Bio conservation	0	XII	0.01	XIII	0	XIII
3	Natural calamities	1.00	I	1.00	I	1.00	I
4	Social issues	0.42[a]	IX	0.3[b]	X	0.32[b]	IX
5	Decline in fish catch	0.95	II	0.95	III	0.95	II
6	Piracy in the sea	0.68[a]	VI	0.57[b]	VIII	0.18[c]	X
7	Hartals/Strike and Bands	0.65	VII	0.60	VII	0.64	VI
8	Lack of information networking facilities	0.05[a]	XI	0.10[b]	XI	0.11[b]	XI
9	Lack of facilities for utilisation	0.88	III	0.79	VI	0.74	V
10	Loss of Biodiversity	0.57	VIII	0.60	VII	0.59	VIII
11	Fluctuating sale price	1.00	I	1.00	I	1.00	I
12	Lack of organized retail marketing place	0.32[a]	X	0.55[b]	IX	0.63[c]	VII
13	Limitation of peak fishing season	0.95	II	0.90	V	0.92	III
14	Cumbersome Bank load	0.84	IV	0.96	II	1.00	I
15	Lack of experience for capacity building	0.79	V	0.91	IV	0.89	IV

a, b, and c : Different superscripts in rows indicate significant difference ($p<0.05$)

From the Table 3 the following observations were noted.

Natural calamities like flood, cyclones and fluctuating sale price of fish and fishery products are considered as most vulnerable followed by decline in fish catch and limitation of peak fishing season for all the social groups of fishermen community. Similar observation was made by Salagrama and Mahapatro (1998) and Ireland (2004). The social issues such as diseases like AIDS etc are more vulnerable for low social groups than the medium and high level($P<0.05$). Piracy in the sea is another important vulnerable parameter for the fishers. For the low social group it was ranked 6^{th} while for medium 8^{th} and high social group it was 10^{th}. This indicated that low social fisher group are more susceptible to piracy in the sea than the higher group. Looking to the average score obtained under this category there is significant difference between low, medium and high social group ($p<0.05$).

Availability of organized retail marketing (ORM) place is another vulnerable parameter. There is significant difference on the vulnerability among different social groups ($P<0.05$). The higher social group fishers consider the ORM place as most vulnerable followed by medium groups and lastly the low social groups, perhaps does not consider this as vulnerable. Similarly lack of information networking facilities is considered more vulnerable to higher social group followed by medium and low social level and the difference is significant between low and other social groups ($P<0.05$). Further, the higher social group fishers consider the cumbersome procedure for obtaining bank loan as most vulnerable followed by medium and low social levels. Similar observations have been reported by FAO (2002) and Perere (2003).

Conclusion:

From the present study, natural calamities (like flood, cyclones) and fluctuating sale price of fish and fishery products were considered most vulnerable to the fishermen communities along Gopalpur coast followed by decline in fish catch for all the social groups of fishermen community. Social issues such as diseases like AIDs were more vulnerable for low social groups and availability of organised retail marketing (ORM) place was considered vulnerable by higher social group.

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Assessment of Integrated Child Development Scheme in Coochbehar district of West Bengal

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Malnutrition, poor health, as well as illiteracy are widely prevalent among low-income groups of the population in almost all the developing countries. Poverty is the major cause of under-nutrition. To combat the challenge Govt. of India has announced and implemented the programme, Integrated Child Development Scheme (ICDS) in 1975**(Srinivasan, 1991**). ICDS takes a holistic view of the development of the child and attempts to improve both pre-natal and post-natal environment. ICDS provides health, nutrition, immunization, preschool education, health and nutrition education, and referral services to young children and their mothers **(Kavitha, 2004).** Children in their formative years of 0 to 6 and women between 15 to 45 years are covered by the programme, as these are child bearing years in the life of women and their nutritional and health status have a bearing on the development of the children. ICDS also empowers mothers to take better care of their children. During the Eighth, Ninth and Tenth Five Year Plan periods, the outreach of ICDS services increased enormously, and several initiatives were taken to improve the quality of services, the goal being universalization with quality. Government of India increased the budgetary allocations for ICDS so that more Projects could be started in hitherto unreached areas, and World Bank, UNICEF, CARE India, USAID and other international agencies provided support in many ways (**Ghosh, 1989).** During the Eleventh Five Year Plan (2007-2012), nutritionally backward states would be the focus of special attention, and micronutrient supplementation/ fortification would be used as a strategy to combat specific micronutrient deficiencies. The involvement of Panchayat, women's self help groups (SHGs), NGOs, corporate and business houses, and other civil society organizations usher in public-private partnership in the true spirit of the concept. Now, around 13.56 lakh AWC are prevalent in India. According to Govt.

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figure AWC in West Bengal are 1.16 lakh. In Coochbehar it around 3656.

Objective :

To assess the performance of ICDS programme among the service provider and beneficiaries.

Materials and Methods:

The present study was conducted with a view to access the performance of ICDS in health and nutrition programme, taken into account the role, performance of service provider and the recipient of the service i.e. the beneficiaries with the help of some socio-economic and socio-personal attributes of ICDS provider and beneficiaries.

The present study was conducted in block Tufanganj I under Cooch Behar district of West Bengal. The district, block were purposively selected. The total numbers of gram panchayats were fourteen, out of which two gram panchayats have been selected randomly. In this two gram panchayats there were fourty eight ICDS centers, among which ten centers have been selected for the present study randomly and from this ten centers ten service provider, ten ICDS worker (anganwadi) have also been selected for randomly as sample. Out of total beneficiaries 20 beneficiaries were selected as sample for the present study. The data was collected with the help of structure schedule both personal interview technique and participatory method have been adopted for collection of information for selected beneficiaries.

The collected data were processed with the help of statistical tools like coefficient of correlation, clubbing of variables (factor analysis) for drawing conclusion for the present study.

Results and Discussion:

Table-1 presents the coefficient of correlation between the 16 antecedent variables. The variable how to reach or **Eagerness to reach(X_1)** to beneficiaries has highly significant positive correlation with the variable Low birth weight of children (X_{11}) and has negative significant correlation with Advice given to pregnant mother(X_4) , Extracurricular activities (X_6) , Food items generally served (X_9) and No. of Infants/ centre (X_{10}) respectively.

The variable **List of pregnant women (X_2)** has highly positive significant correlation with the variables like Extracurricular activities imparted to child (X_6), Food items generally served (X_9), Total ANC received (X_{14}) and Number of handicapped children (X_{15}) respectively.

The variable **Advice given to pregnant women (X_3)** has significant positive correlation with No. of mother providing breastfeeding (X_{12}) and Number of visit(X_{13}). It has also significant negative correlation with

Adopting appropriate child care behavior (X_7).

The variable **Advice to nursing mother (X_4)** has negative significant correlation with Number of visit (X_{13}).

The variable **Extracurricular activities (X_6)** has positive significant correlation with number of items served (X_8) and Food items generally served (X_9), and has negative significant correlation with Low birth weight of children (X_{11}) respectively.

The variable **Adopting appropriate child care behavior (X_7)** has negative significant correlation with Number of visit (X_{13}).

The variable **Food items generally served (X_9)** has positive significant correlation with Number of infants / centre (X_{10}) and has negative significant correlation with Low birth weight children (X_{11}) respectively.

The variable **Low birth weight children (X_{11})** have significant negative correlation with Number of handicapped child in a centre(X_{15}).

In Table-2 24 antecedent variables have been correlated to find out the relationship between them. It revealed that, the variables Social participation (X_8) and Mass media exposure(X_{13}) has positively significant correlated with Age (X_1) and Caste (X_2), Farm power (X_{11}), has negatively correlated with **Age (X_1).**

The variable **Caste (X_2)** has positive significant correlation with Extra curricular activities imparted to child(X_{18}).

The variable **Primary occupation (X_3)** have positive significant correlation with Farm power (X_{11}) and Material possession (X_{12}), and has significant negative correlation with social participation(X_8).

The variable **Education (X_5)** has significant negative correlation with Food items generally served (X_{19}).

The variable **Family type (X_6)** have positive significant correlation with family size (X_7), Farm power (X_{11}) and significant negative correlation with Social participation (X_8) , Mass media exposure(X_{13}) and lesson taught to child (X_{17}).

The variable **Family size(X_7)** has significant negative correlation with Social participation (X_8), Mass media exposure (X_{13}), Lesson taught to child (X_{17}) has positive significant correlation with no. of service (X_{18}).

The variable **Mass media exposure (X_{-13})** has significant positive correlation with Social participation (X_8) and the variable Farm power(X_{11}) has significant negative correlation with Social participation(X_8).

The variable **House (X_9)** has positive significant relationship with Material possession (X_{12}).

Table-1: Correlation coefficient within the 16 Antecedent variables of ICDS Worker (AWW/AWH)

	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}
X_1	Eagerness to reach 1.00	List of pregnants	Advice to pregnant women	Advice to nursing mother	No. of lesson	Extracur ricular	Child care behaviour	No. of served days	No. of items	No. of infants/centre	Low birth weight child	No. of Breastfeeding mother	No. of visit	Total ANC
X_2	-0.47	1.00												
X_3	-0.29	0.52	1.00											
X_4	-0.64**	0.33	0.50	1.00										
X_5	-0.30	0.21	0.10	0.25	1.00									
X_6	-0.66**	0.70**	0.31	0.44	0.19	1.00								
X_7	-0.13	-0.05	-0.57*	-0.21	0.08	0.45	1.00							
X_8	-0.14	0.29	-0.03	0.11	0.26	0.56*	0.29	1.00						
X_9	-0.70**	0.58*	-0.17	0.37	0.32	0.64**	0.47	0.22	1.00					
X_{10}	-0.59*	0.26	-0.34	0.22	0.47	0.35	0.51	-0.01	0.89***	1.00				
X_{11}	0.56*	-0.35	-0.07	-0.50	0.39	-0.55*	-0.26	0.15	-0.58*	-0.35	1.00			
X_{12}	0.26	0.36	0.603*	-0.19	0.04	-0.10	-0.39	-0.35	-0.36	-0.40	0.28	1.00		
X_{13}	-0.32	0.29	0.68**	0.73**	0.17	-0.02	-0.66**	-0.43	0.04	0.01	-0.26	0.29	1.00	
X_{14}	0.17	0.59*	0.16	0.09	-0.05	0.28	-0.10	0.52	0.13	-0.21	0.03	0.25	-0.06	1.00
X_{15}	-0.15	0.56*	0.18	0.13	-0.31	0.28	0.02	-0.29	0.32	0.05	-0.57*	0.44	0.22	0.46
X_{16}	-0.12	0.24	0.02	0.09	0.11	-0.16	-0.21	-0.27	0.39	0.51	-0.07	-0.07	0.35	-0.07

The variable **Farm power (X_{11})** has positive significant correlation with Material possession (X_{12}) and negative significant correlation with No. of lesson taught to child (X_{17}).

The variable **Material possession (X_{12})** has significant positive correlation with Outside communication (X_{14}).

The variable **Mass media exposure (X_{13})** has positive significant value with No. of lesson taught (X_{17}) and negative significant correlation with Adopting appropriate child care behaviour(X_{20}).

The variable **Food items generally served (X_{19})** has negative significant correlation with No. of service (X_{21}).

The variable **Adopting appropriate child care behavior (X_{20})** has highly significant positively correlated with Total ANC received (X_{23}).Also it has positive significant correlation with No. of visit after delivery(X_{22}).

The variable **Total no. of ANC received (X_{23})** has negative significant correlation with No. of meeting (X_{24}).

Table-2: Correlation coefficient within the 24 Antecedent variables of ICDS Beneficiaries

	X_1	X_2	X_3	X_5	X_6	X_7	X_8	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}	X_{15}	X_{16}	X_{17}	X_{18}	X_{19}	X_{20}	X_{21}	X_{22}
VARIABLES	Age	Caste	Primary occupation	Education	Family type	Family size	Social participation	House	Farm power	Material possession	Mass media exposure	communication	Eagerness to reach	Advice received	Lesson taught	Extracurricular activities	Food items served	Childcare behaviour	No. of Services	No. of visit
X_1	1.00																			
X_2	-0.416*	1.00																		
X_3	-0.37	0.17	1.00																	
X_5	-0.08	0.27	-0.31	1.00																
X_6	-0.24	0.36	0.28	-0.26	1.00															
X_7	-0.16	0.36	0.28	-0.17	0.899***	1.00														
X_8	0.438**	-0.29	-0.477**	0.24	-0.526**	-0.391*	1.00													
X_{10}	0.09	0.09	-0.08	0.00	-0.06	0.00	0.17	1.00												
X_{11}	-0.575***	0.14	0.587***	-0.10	0.39*	0.36	-0.521**	0.11	1.00											
X_{12}	-0.13	-0.18	0.587***	-0.30	0.03	0.04	-0.05	0.472**	0.606***	1.00										
X_{13}	0.387*	-0.20	0.16	-0.03	-0.387*	-0.44**	0.443**	0.21	-0.32	0.36	1.00									
X_{14}	-0.22	-0.08	0.00	0.04	-0.31	-0.36	0.14	0.21	0.28	0.423*	0.02	1.00								
X_{15}	-0.20	0.15	0.31	-0.33	0.25	-0.07	-0.31	-0.12	0.12	0.06	0.02	0.26	1.00							
X_{16}	0.18	-0.18	-0.26	-0.15	0.34	0.36	0.17	0.18	-0.21	-0.01	-0.15	0.07	0.04	1.00						
X_{17}	0.17	-0.03	-0.24	-0.09	-0.435*	-0.579***	0.19	0.13	-0.427*	-0.03	0.406*	0.26	0.09	-0.21	1.00					
X_{18}	-0.22	0.387*	0.19	0.12	0.28	0.37	0.00	-0.38	-0.06	-0.30	0.01	-0.36	0.03	-0.10	-0.07	1.00				
X_{19}	-0.03	-0.06	0.09	-0.492**	-0.30	-0.16	0.24	0.05	-0.18	0.09	0.17	0.10	-0.16	0.13	0.26	0.07	1.00			
X_{20}	-0.01	-0.20	-0.32	0.02	-0.26	-0.10	-0.04	-0.30	-0.13	-0.31	-0.498**	0.06	-0.14	-0.05	-0.10	-0.13	0.08	1.00		
X_{21}	0.37	0.19	-0.07	0.34	0.35	0.431*	-0.18	-0.17	0.08	-0.17	-0.23	-0.19	-0.25	0.11	-0.26	0.09	-0.484**	0.05	1.00	
X_{22}	-0.03	-0.27	-0.05	0.33	-0.21	-0.08	0.18	0.05	0.23	0.19	0.09	0.35	-0.29	-0.13	0.00	0.07	-0.03	0.28	0.12	1.00
X_{23}	0.02	-0.32	-0.17	0.21	-0.32	-0.04	0.30	0.00	0.09	0.03	-0.26	0.05	-0.36	-0.05	-0.30	0.10	0.00	0.541***	-0.03	0.413*
X_{24}	-0.08	0.26	0.473**	-0.30	0.26	-0.08	-0.21	-0.02	0.06	0.22	0.29	0.07	0.673***	-0.04	0.33	-0.07	-0.09	-0.34	-0.06	-0.36

*** Significant at 1% level of significance

**Significant at 5% level of significance

* Significant at 10% level of significance

Table-3: Factor analysis for clubbing of variables into factor based on factor loading for ICDS Worker (AWW/AWH)

Factors	Variables Accounted	Factor loading	% of variance	Cumulative %	Factor rename
Factor 1	• Eagerness to reach (X_1) • Extracurricular activities (X_6) • Food items generally served (X_9) • No. of Infants/centre (X_{10}) • Low Birth Weight child (X_{11})	-0.86 0.83 0.86 0.72 -0.72	27.29	27.29	**Child care and capacity**
Factor 2	• Advice to pregnant women (X_3) • Advice to nursing mother (X_4) • Childcare behavior (X_7) • No. of visit (X_{13})	0.82 0.73 -0.78	18.81	46.10	**Mother care**
Factor 3	• List of pregnant women (X_2) • No. of Services ICDS provide (X_8) • Total no. of ANC (X_{14})	0.90 0.59 0.77 0.92	13.26	59.36	**Pro-natal care**
Factor 4	• No. of mother providing breastfeeding (X_{12}) • No. of handicapped child(X_{15})	0.90 0.69	12.53	71.89	**Mother child health**
Factor 5	• No. of lessons (X_5)	0.90	11.18	83.07	**Communication**
Factor 6	• No. of meeting (X_{16})	0.92	10.88	93.95	**and Interaction status**

Factor analysis is a data reduction analysis while predicting the **Child care and capacity** only five factors i.e. Eagerness to reach (X_1), Extracurricular activities (X_6), Food items generally served (X_9), No. of Infants/centre (X_{10}), Low Birth Weight child (X_{11}) are to be considered.

In table-3 the Factor-1 has accommodated the following variables and has been renamed as **Child care and capacity**. The factor has contributed 27.29 percent of variance of the predictable character.

The Factor 2 has accommodated the following variables i.e. Advice to pregnant women (X_3), Advice to nursing mother (X_4), Childcare behavior (X_7) and No. of visit (X_{13}) has been renamed as **Mother care**. The factor has contributed 18.81 percent of variance of the predictable character.

It has been found that The Factor 3 has accommodated the following variables i.e. List of pregnant women (X_2), No. of Services ICDS provide (X_8), Total no. of ANC (X_{14}) has been renamed as **Pro-natal care**. The factor has contributed 13.26 percent of variance of the predictable character.

The Factor 4 has accommodated the following variables i.e. No. of breastfeeding mother(X_{12}), No. of handicapped child (X_{15}) has been renamed as **Mother child health** and contributing variance percentage was 12.53.

It has been found that The Factor 5 has accommodated only one variable i.e. No. of lessons (X_5) with variance percentage 11.18 and the Factor 6 also has accommodated only one variable i.e. No. of meeting (X_{16}) and contributing variance percentage was 10.88.And both factor have been renamed as **Communication and Interaction status**.

Table-4: Factor analysis for clubbing of variables into factor based on factor loading for ICDS Beneficiaries.

Factors	Variables Accounted	Factor loading	% of variance	Cumulative %	Factor rename
Factor 1	• Family type (X_6) • Family size (X_7) • Lesson taught (X_{17})	0.92 0.92 0.81	17.59	17.59	**Family composition**
Factor 2	• Caste (X_2) • No. of visit (X_{22}) • Total no of ANC (X_{23})	-0.63 0.77 0.79	11.00	28.59	**Pre- natal care**
Factor 3	• Primary occupation (X_3) • Social participation (X_8) • Farm power (X_{11}) • Advice received (X_{16})	0.76 -0.61 0.64 -0.68	10.72	39.31	**Occupational status**
Factor 4	• Education (X_5) • Food items generally served (X_{19}) • No. of services (X_{21})	0.81 -0.83 0.78	10.64	49.95	**Education**
Factor 5	• House (X_{10}) • Material possession (X_{12}) • Outside communication (X_{14}) • Extra-curricular activities (X_{18})	0.86 0.59 0.59 -0.78	10.44	60.39	**Social status and communication**
Factor 6	• Mass media Exposure (X_{13}) • Childcare behavior(X_{20})	0.78 -0.83	9.20	69.59	**Child care**
Factor 7	• Age (X_1)	-0.86	9.00	78.59	**Age**
Factor 8	• Eagerness to reach (X_{15}) • No. of meeting (X_{24})	0.88 0.83	8.96	87.55	**Beneficiary Identification**

In Table-4 the Factor-1 has accommodated the following variables i.e. Family type (X_6), Family size (X_7), Lesson taught (X_{17}) has been renamed as **Family composition**. The factor has contributed 17.59 percent of variance of the predictable character.

It has been found that The Factor 2 has accommodated the following variables i.e. caste (X_2), No. of visit (X_{22}) and Total no of ANC (X_{23}) has been renamed as **Pre- natal care** with variance percentage 11.00.

The Factor 3 has accommodated the following variables i.e. Primary occupation (X_3), Social participation (X_8), Farm power (X_{11}) and Advice received (X_{16}) could renamed as **Occupational status** and has contributed 10.72 percent of variance of the predictable character.

It has been found that the Factor 4 has accommodated the following variables i.e. Education (X_5), Food items generally served (X_{19}), No. of services (X_{21}) has been renamed as **Education** with variance percentage 10.64.

The Factor 5 has accommodated the following variables i.e. House (X_{10}), Material possession (X_{12}), Outside communication (X_{14}), Extra-curricular activities (X_{18}) renamed as **Social status and communication** and has contributed 10.44 percent of variance.

The Factor 6 has accommodated the following variables i.e. Mass media exposure(X_{13}), Childcare behavior(X_{20}) has been renamed as **Child care.** The factor has contributed 9.20 percent of variance of the predictable character.

It has been found that The Factor 7 has accommodated only one variable i.e. Age (X_1) and has been renamed as **Age** with variance percentage 9.00.

It has been found that The Factor 8 has accommodated the following variables i.e. No. of means to identify (X_{13}), No. of meeting (X_{24}) and has been renamed as **Beneficiary Identification** with variance percentage 8.96.

Conclusion:

The performance of ICDS worker/ Anganwadi worker is found to be positive and significant in so many cases which were reflected in correlation of coefficient analysis, specially, low birth weight of children, food items served to the pregnant women, anti natal checkup, number of handicapped children, advice mother providing breast feeding, number of food items generally served and the number of infants enrolled in Anganwadi centre. Similarly factor analysis explain the success on ICDS/Anganwadi worker in the areas on the basis of factor loading only six factor had been identified as child care and capacity, mother care, pro-natal care, mother child health and communication and interaction status. The benefits of ICDS have been rendered to those who have the social participation, mass media exposure, farm

power, material position, family size, house type, food items generally served, adopting appropriate child care behavior through training provided by the ICDS worker. In case of factor analysis of ICDS beneficiaries there are eight factors has been identified after cluubing the variables on the baosis of factor loading, they are Family composition, Pre- natal care, Occupational status, education, social status and communication child care, age, beneficiary identification.

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Re-emphasizing the Women's Empowerment through the frontier Livelihood option of Poultry Enterprise Management

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As an aftermath of refocusing the alternative livelihood options to restore livelihood security in rural India, the poultry enterprise management is gaining momentum in this direction day by day. . Rural poultry production (backyard) units require very little hand feeding and pro- vides handsome returns with minimum investment. Thus rural poultry farming not only generates income, employment opportunities to small farmers including women but also brings about improvement necessary to uplift the life of rural communities (Gminder, 2003). In case of poultry enterprise, the gender dynamics in rural areas can also plead the attention of planners, policy makers and social scientists. Women have their efficiency in case of dealing with the complex things in a multidimensional social situation. A Government report (GOI, Planning Commission, 2007) indicates that 85 per cent of the rural women are engaged in livestock activities. Most of the work involving poultry enterprise management is considered the traditional responsibility of women. Women have a great deal of information about local feed resources and a good working knowledge of bird behaviour, feed preferences and production characteristics. Through experience the women have developed feeding practices to suit different types of poultry birds. Poultry production system is extensive in nature characterized by rearing of small flocks, which are owned and managed by women and children for nutritional requirement. Apart from the traditional poultry production, small-scale commercial poultry farms are also

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located in the Peri-urban areas producing broilers and table eggs (Sanyang, 2012). Despite significant contributions of women in the poultry enterprise management, those engaged in the formulation of policies have often tended to neglect the productive role of women. But still the role of women is marginalized, undervalued and unrecognized. There is a tendency among the administrators and policy makers to see men as farmers and women as farmer's wife and highlight their supportive roles rather than productive roles.

As a consequence the biasness of the development planners in agricultural planning process can be enumerated as the women are the consumers not the producers, restricted from the outside activity and doing the auxiliary work in productive enterprises. But her role as an active worker and producer is rarely acknowledged though it is significant for the family's survival (Reddy, 2003). In such a resilient research climate there is a need to reemphasize the role of farm women in poultry enterprise management. Keeping above in view, the present study was conducted to explore the areas of women's empowerment through their involvement in decision making process of poultry enterprise management as the alternative vocation of women through appraising the efficiency index of women in poultry enterprise management as the alternative vocation of rural India under a definite socio-cultural milieu.

Methodology

The present study was conducted in Ghoragachha and Basantapur villages under Chakdah block of Nadia district in West Bengal. Purposive as well as random sampling procedures were adopted. The districts, blocks and villages were purposively selected for the study due to the availability of appropriate respondent in abundance for the present study. An exhaustive list of respondents from the selected villages was prepared with the help of block and village officials. The respondents for the study were selected randomly from the exhaustive list prepared for the purpose. The causal variables like age, education, occupation, family size, family education status, land holding, social participation, economic status, farm power, communication channel, material possession, utilization pattern of communication channel, animal population, constraint-based enterprise performance, performance in livelihood activity based on perceived problem, scientific orientation in livestock management, decisiveness in financial affair of the enterprise, bird population, farm implements were selected, operationalised and measured. The consequent variable efficiency index of poultry enterprise management was selected, operationalised and measured

simultaneously for the study. The data were collected with the help of pre-tested structured interview schedule. The collected information was processed into the statistical tools like coefficient of correlation and path analysis for drawing conclusion.

Results and discussion

Table1 presents the correlation coefficient of efficiency index of women in poultry enterprise management with eighteen causal variables. From the table it is clear that the variables like caste, land holding, family education status, economic status, house type, material possession, utilization pattern of communication channel, animal population, constraint based enterprise performance, performance in livelihood activity based on perceived problem, scientific orientation, farm implement and bird population are significantly correlated with the efficiency index of women in poultry enterprise management.

Caste and the efficiency index of women in poultry enterprise management

Caste is the element of social stratification in a particular society. The social being is stratified into different categories with the help of their caste. In the present study, the caste is categorized into three (3) distinct categories namely: General, S.C. and S.T. Mostly the women respondents of the research area belong to the General caste category. The women have no other option to contribute to their family income. They have the only way of contributing towards their family income through poultry enterprise management. It is the best alternative option of women for maintaining their livelihood. The Muslim dominated general caste women are mostly attached with the scientific and traditional poultry rearing of their area which ultimately contributes to the efficiency index of women in poultry enterprise management. That is why the variable caste is positively and significantly associated with the efficiency index of women in poultry enterprise management.

Land holding and the efficiency index of women in poultry enterprise management

In the rural social system land holding is the indicator of social prestige and esteem as well as the economic status. The individual with higher amount of land exposes herself/himself to the different information sources and their human psyche is much more responsive to the activities which give impetus to their earning. Not only that but also the knowledge and wisdom are also attached with the higher land holder in the rural society. That is why the variable land holding is positively and

significantly associated with the efficiency index of women in poultry enterprise management.

Family education status and the efficiency index of women in poultry enterprise management

Family education establishes a platform for any knowledge intensive venture. Family is the basic unit to develop the acumen in any perspective. It also helps in building the capacity to take care of any complex ideas. Though poultry management is very primitive vocations of rural society still the family education gives support to the women for rearing poultry scientifically to uplift their family income. That is why the variable family education status is positively and significantly associated with the efficiency index of women in poultry enterprise management.

Economic status and the efficiency index of women in poultry enterprise management

Economic status reflects the financial condition of an individual in a social system. An individual with higher economic status has a higher tendency to expose herself/himself to different sources of information. Economic status reflects the cosmopoliteness of an individual so that the individual can imbibe with different information for taking risk in case of adapting any innovative idea. That is why the economic status is positively and significantly associated with the efficiency index of women in poultry enterprise management.

House type and the efficiency index of women in poultry enterprise management

House type is the indicator of social status and economic status in a rural society. In the present study, the house type is categorized into the categories like- hut, kutcha, mixed, pucca and mansion. The weightage is given on the basis of the market value. The higher score of house type implies the higher efficiency of rearing poultry in a scientific manner. It also reflects that the higher women efficiency index of poultry enterprise management contributes to the increased annual income of the family which leads to the improved house type. That is why the variable house type is positively and significantly associated with the efficiency index of women in poultry enterprise management.

Material possession, farm implement and the efficiency index of women in poultry enterprise management

Material possession and farm implement are also indicators of social status. The higher material possession and farm implement reflects the higher risk taking ability, venturesomeness of an

individual. In other words, the efficient management of any enterprise contributes to the higher level of material possession and farm implement. That is why; the variables material possession and farm implements are positively and significantly associated with the efficiency index of women in poultry enterprise management.

Utilization pattern of communication channel and the efficiency index of women in poultry enterprise management

The utilization pattern of communication channel helps an individual to mobilize the related information in a rural social system. It nurtures the cosmopoliteness, venturesomeness and risk taking capacity in the behaviour of an individual. The developed outlook and exposure with the help of communication channel utilization helps in earning logical and relevant information about the plausible alternative. In the study area poultry rearing is the alternative livelihood vocations for betterment of women's economic condition. That is why the variable utilization pattern of communication channel is positively and significantly associated with the efficiency index of women in poultry enterprise management.

Animal population and the efficiency index of women in poultry enterprise management

In the present study animal population helps in nurturing the animals in an appropriate manner within the rural system. The more number of animals can be nurtured and managed by efficient women. The poultry enterprise can also be managed efficiently by the women who can manage more number of animals in their home effectively. As a result the animal population is positively and significantly correlated with efficiency index of women in poultry enterprise management.

Constraint based enterprise performance and the efficiency index of women in poultry enterprise management

The poultry enterprise is purely managed by the women folk. The constraints faced by the women in case of managing the enterprise, ultimately hampers the performance of the enterprise. So efficient overcoming of the constraints increases the enterprise performance. That is why the variable constraint based enterprise performance is positively and significantly correlated with efficiency index of women in poultry enterprise management.

Performance in livelihood activity based on perceived problem and efficiency index of women in poultry enterprise management

In the study area the livelihood activity of women is poultry enterprise management which contributes to the family earning. The perceived problem solution increases the performance of the livelihood activity. In other words, the increased efficiency of the women in case of solving the perceived problem associated with the livelihood activity increases the performance. That is why the variable performance in livelihood activity based on perceived problem is positively and significantly correlated with efficiency index of women in poultry enterprise management.

Scientific orientation and efficiency index of women in poultry enterprise management

Scientific orientation is psychological attribute of an individual which orient the individual scientifically for adopting an alternative vocation. It helps in capturing an alternative vocation for the betterment of their economic status. The efficient poultry rearing is basically a psychological process rightly banks upon cognitive and functional component for being tuned with acceptance and acclimatization of alternative vocation towards generating modified lifestyle. That is why the variable scientific orientation is positively and significantly correlated with efficiency index of women in poultry enterprise management.

Bird population and the efficiency index of women in poultry enterprise management

Bird population is the number of birds reared by a particular farm woman. It is the indicator of the size of the enterprise. The higher number of birds can be managed efficiently by an efficient and proficient woman. That's why the bird population is significantly and positively associated with the efficiency index of women in poultry enterprise management.

Table 2 reflects the path analysis to decompose the total effect of antecedent variable on the consequent variable into direct, indirect and residual effect of antecedent variable on the consequent variable, efficiency index of farm women in poultry enterprise management. It is found that the variable economic status has yielded the highest direct effect. It is discernible that economic status has gone supportive in augmenting the level of efficiency index of women in poultry enterprise management. The economic status supports the logic and rationale to become venturesome for banking upon the new alternative vocation and thereby has wielded a clear and convincing effect

on the efficiency index of women in poultry enterprise management. The other two variables in order are farm implement and scientific orientation. In case of indirect effect the economic status has exerted the highest indirect effect on the efficiency index of women in poultry enterprise management. The economic support or resource support in the form of economic status needs to have the ability to mitigate the uncertainty if any for adopting the alternative vocation. The other two variables in order having indirect influence are material possession and farm implement. It is found that the variable economic status has gone instrumental to channel the highest indirect effect of as many as fifteen (15) variables to prove its imbibing and associational role in case of characterizing the consequent variable, efficiency index of women in poultry enterprise management. The residual effect being 0.727, it is to infer that 72.7% of variation in consequent variable, efficiency index of women in poultry enterprise management still has been left unexplained. This should further suggest that inclusion of more relevant and contextual variables could have been explained more variations than what has been explained in present study.

Conclusion

In the changing global scenario of agriculture and allied sector, the paradigm has been shifted from the frontier agriculture to the back yard sustainable agriculture with a clear penchant towards market led sustainable agriculture. The sustainability emphasizes the construct of productivity, profitability and equity of resources. Though the women are the prime mover of scientific poultry enterprise but still the policy makers have the biasness to brand the women folk as an inside activity performer. This concept inculcates the new paradigm of women empowerment by increasing the efficiency of women in case of activity performance. In the era of globalization the women farmers also contribute to the value chain of any production system. The women involvement in decision making is now evolving like anything. The women participation and empowerment bestows the swashbuckling effect of women's performance in any activity conduction and organization. Rather to say the women are the prime mover of scientific agricultural and allied practices. The present study also re-emphasizes the intrinsic essence of women involvement in decision making process on poultry enterprise management. Developed poultry enterprise can be ascertained

with the help of higher economic status, higher level of land holding, enriched family education, developed house type, appropriate utilization of communication channel, positive scientific orientation etc. The journey was started on the ripples of meander of women perception to explore their efficiency index and associated correlates in case of poultry enterprise management. In future for developing any policy in the study area the policy makers should concentrate upon the prerogative of the women's efficiency in managing the enterprise.

Tables

Table 1. Correlation coefficient analysis between efficiency index of women in poultry enterprise management and eighteen causal variables

Variables	Coefficient of correlation
Age($X_{1)}$	0.148
Caste(X_2)	0.282**
Farm size(X_3)	0.122
Land Holding(X_4)	0.296**
Family Education(X_5)	0.473**
Family Type(X_6)	0.196
Economic Status(X_7)	0.414**
House Type(X_8)	0.542**
Material Possession(X_9)	0.532**
Social Participation(X_{10})	-0.077
Utilization Pattern of Communication Channel(X_{11})	0.569**
Animal Population(X_{12})	0.570**
Constraint based enterprise performance(X_{13})	0.486**
Performance in livelihood activity based on perceived problem(X_{14})	0.479**
Scientific orientation in livestock rearing(X_{15})	0.654**
Bird population(X_{16})	0.394**
Decisiveness in financial affair of enterprise(X_{17})	0.138
Farm Implement(X_{18})	0.417**

*Significant at 5% level of significance

**Significant at 1% level of significance

Table 2 Path analysis of efficiency index of women in poultry enterprise management with respect to 18 antecedent variables

Variable	Total Effect(r)	Direct Effect(□)	Indirect Effect(r-□)	Substantial indirect effect		
				I	II	III
Age(X_1)	0.148	0.002	0.146	X_{18} 0.538	X_7 -0.533	X_{15} -0.185
Caste(X_2)	0.282	-0.197	0.479	X_7 -0.888	X_{18} 0.823	X_{15} -0.185
Family Size(X_3)	0.122	0.016	-0.333	X_6 0.403	X_7 -0.355	X_{18} 0.190
Land holder(X_4)	0.296	-0.126	0.422	X_7 -2.665	X_{18} 2.280	X_{14} 0.243
Farm Education(X_5)	0.473	0.582	-0.109	X_7 -2.203	X_{18} 1.709	X_{15} -0.428
Farm type(X_6)	0.196	0.438	0.531	X_7 -0.426	X_{18} 0.253	X_{14} -0.106
Economic Status(X_7)	0.414	-3.553	3.967	X_{18} 3.039	X_5 0.360	X_{14} 0.323
House Type(X_8)	0.542	0.253	0.289	X_7 -2.700	X_{18} 2.248	X_{15} -0.480
Material Possess(X_9)	0.532	0.294	3.678	X_7 -2.452	X_{18} 1.994	X_{15} -0.428
Social Participation(X_{10})	-0.077	-0.413	0.336	X_7 -1.208	X_{18} 0.791	X_5 0.291
Utilization Pattern of Communication Channel(X_{11})	0.569	0.249	0.32	X_7 -1.954	X_{18} 1.773	X_{15} -0.458
Animal Population(X_{12})	0.57	-0.158	0.016	X_7 -1.386	X_{18} 1.235	X_{15} -0.480
Constraint based enterprise performance (X_{13})	0.486	0.271	0.215	X_7 -2.274	X_{18} 1.773	X_{14} 0.392
Performance in livelihood activity based on perceived problem(X_{14})	0.479	0.622	-0.143	X_7 -1.848	X_{18} 1.583	X_{15} 0.369
Scientific Orientation in Livestock Rearing(X_{15})	0.654	-0.738	0.358	X_7 -1.492	X_{18} 1.361	X_5 0.338
Bird Population(X_{16})	0.394	0.04	0.354	X_7 -0.426	X_{18} 0.380	X_{15} -0.140
Decisiveness in financial affair of enterprise (X_{17})	0.138	0.497	-0.359	X_7 0.959	X_{18} 0.886	X_{15} 0.250
Farm Implement(X_{18})	0.417	3.166	0.713	X_7 -3.141	X_{15} -0.317	X_5 0.314

Residual effect=0.727

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A Study on the Role of Women Self Help Groups in Empowerment and Capacity Building of farm women

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Abstract

The major farm and on farm activities that were under taken by the respondents were dairy farming, mushroom cultivation, and crop production in case of members and post harvest, mushroom cultivation and tree planting. There was distinct difference between the SHG members and non members so far as the involvement in farm activities was concerned. The extent of involvement in case of members was maximum in economical, social and decision making activities while it was found to be maximum in social activities in case of non members. There was significant relationship in the socio economic status of the SHG member's empowerment. Education, training, social participation and extension contacts were found to be mostly dominating the areas of empowerment. Whereas social constraint were found to be major functional difficulty selected in functioning of the SHG. The respondents were of the view that lack of family and organizational support, proper training facility, and proper maintenance of records were the main bottlenecks in effective functioning of the SHG in the state of Chhattisgarh. While some welcoming suggestions were given by the respondents such as effective co-operation of bank members with self help group members.

Key Words: SHG, Capacity building, empowerment, farm women

Introduction

Empowerment is a multi-dimensional process, which should enable farm women or group of women to realize their full identity and power in all spheres of life. It consists of greater access to knowledge and resources, greater autonomy in decision making to enable them to have greater ability to plan their lives, or to have greater control over the circumstances that influence their lives and free from shocks imposed on them by custom, belief and practice.

Self help groups have emerged as one of the major strategies for women's Empowerment and various schemes of

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the Government of India have shown that strong Women's groups could contribute substantially to the development and convergence of services and activities. Experience with various programmes and projects have highlighted the benefits of formation of women's groups for building confidence and focusing on developmental tasks. Different groups in various states all over the country have focused on skill development and awareness generation, promoting economic development through income generating activities, inculcating thrift and credit management activities among poor women.

Economic independence or access to an inherited or self-generated income is considered as the major means of empowerment of women, to a great extent this is true as economic dependence is the worst form of dependence. To enable women to stand on their own legs, this strategy is attempted and advocated by many governments in this third world. Women's income in a family is very important in relation to their full identity and powers in all spheres of life. However, as in the case of education, economic independence also may not give women the necessary decision making power and may not even make access to forums of decision making easy or smooth for them. The prevailing value system has put so many hurdles on the path for women's equality through economic empowerment even so the role of the economic factor cannot be minimized. The self-help group provides an appropriate platform for initiating and sustaining income generating activities.

Objectives

1. To study the farm and nonfarm activities taken up by the members through Women Self Help Groups.

2. To study the extent of involvement of farm women in empowerment and capacity building activities.

Methodology

The study entitled "A study on the Role of Women Self Help Groups in Empowerment and Capacity Building of Farm Women" was conducted in two blocks of Korba district in Chhattisgarh state taking 40 Women Self Help Groups and 120 respondents, out of which 80 were members of SHG while 40 were non members. With the objectives of study was to identify the participation in income generating farm and nonfarm activities, the extent of involvement of farm women in empowerment and capacity building activities. The data collected were analyzed with suitable statistical tools to revel the major findings.

Result & Discussion

Farm and nonfarm activities taken up by the members through Women Self Help Groups.

The members of self help groups take up various activities through their SHG. The researcher has taken steps to study the involvement of WSGH members in farm and nonfarm activities which provide them employment and income for better standard of living. Results obtained in this aspect are presented in the table below:

Table no: 1:Farm and nonfarm activities taken up by the members through Women Self Help Groups.

S. no	Activity	Mean score	Rank	Mean score	Rank
1.	Crop production	2.0	V	1.5	IV
2.	Tree planting	1.93	VII	1.8	III
3.	Dairy farming	2.40	I	1.4	V
4.	Poultry keeping	2.25	III	0.8	IX
5.	Sheep rearing	1.97	VI	1.1	VII
6.	Nutritional garden	1.64	IX	0.9	VIII
7.	Mushroom cultivation	2.37	II	1.9	II
8.	Post harvest	2.12	IV	2.0	I
9.	Value addition	1.89	VIII	1.2	VI
	Total mean	**2.06**		**1.4**	

t- value 4.714**

Results from the table-1 revealed that the members of WSHG were mainly involved in the activities like dairy farming, mushroom cultivation, poultry keeping and post harvest activities of crops in order of ranks, they also perform activities like crop production, sheep rearing, tree planting, value addition and nutritional garden.

The non members farm women mainly were involved in activities like post harvest, mushroom cultivation, tree planting and crop production in order of ranks. The members of SHG and non members had given different ranks to different activities except of mushroom cultivation; this indicated that members of WSHG were more engaged in

profitable economic enterprise than their counter part.

The calculated t value was found to be significant at 5 percent level of significance and confirms the distinctions between the two groups of respondents as to their involvement in different economic activities and the members were proving to be superior as compared to the non members.

Involvement in other areas of empowerment:

Apart from engagement in different enterprise activities the respondents were also associated with other areas of empowerment. Involvement of members and non members in other areas of empowerment are studied and presented in table below:

Table no: 2: Involvement in other areas of empowerment:

		Members		Non members	
S. no	Activity	Mean score	Rank	Mean score	Rank
1.	Control over resources	1.91	IV	1.68	VI
2.	Knowledge and skill	1.92	III	1.88	IV
3.	Financial involvement	2.21	I	2.11	II
4.	Linkage and co-operation	1.87	V	1.45	VII
5.	Marketing support	1.79	VI	1.92	III
6.	Resource management	2.01	II	2.33	I
7.	Community management	1.67	VII	1.69	V
	Total mean	1.91		1.86	

t- value 0.5036*

Results from the table-2 revealed that the members of WSHG were mainly taking up the nonfarm activities up to a greater extent in financial involvement, resource management, knowledge and skill development, in order of ranks; they also perform activities like control over resource, linkage and cooperation, marketing activities along with community management.

The non member farm women were mainly involved in resource management, financial involvement, marketing support in order of ranks; they also perform activities like knowledge and skill, community management, control over resources.

The calculated t value was found to be significant at 1% level of significance and conformed the difference between the two groups of respondents as to their involvement in different areas of empowerment and the members were proving to be superior to the non members.

Extent of involvement of farm women in empowerment and capacity building activities.

The extent of involvement of members and non members in other areas of empowerment was studied and is presented in table shown below.

Table no:3: Opinion on Capacity building activities:

S. no	Activities	Members Mean	Rank	Non members Mean score	Rank
1.	**Social**				
a.	Social participation	2.16	III	1.56	II
b.	Social identity	2.34	I	1.23	IV
c.	Education of children	2.18	II	1.67	I
d.	Cosmopolitanisms	1.99	IV	1.32	III
e.	Health care	1.90	V	1.11	V
	Total	2.11	2	1.37	1
2.	**Economical**				
a.	Occupational status	2.45	II	1.34	III
b.	Food habits	1.87	IV	1.45	I
c.	Financial position	2.11	III	1.21	V
d.	Expenditure on ceremonies	1.76	V	1.23	IV
e.	savings	2.65	I	1.43	II
	Total	2.65	1	1.33	2
3.	**vocational**				
a.	Linkage with experts	2.32	I	1.20	I
b.	Competency in vocation	2.12	II	1.11	II
c.	Life style	1.64	III	1.09	III
	Total	1.98	3	1.13	4
4.	**Structural**				
a.	Home structure	1.97	II	1.21	III
b.	Material possession	2.13	I	1.13	IV
c.	Land holding	1.21	V	1.45	I
d.	Mobility	1.89	III	1.23	II
e.	Recreation and entertainment	1.58	IV	1.11	V
	Total	1.23	4	1.23	3
	Average mean	**2.01**		**1.29**	
		t value8.811**			

Results from the table above revealed that the members of WSHG were mainly involved in the economical activities like savings, occupational status, financial position and expenditure on ceremonies. Followed by social activities such as social identity, education of children, social participation and cosmopolitanisms. Vocational activities then comes next with linkage with expert and lifestyle and at last structural activities with material possession, home structure, mobility with land holding.

The non members farm women mainly were involved in social activities such as education of children, social participation, cosmopolitanisms, social identity in order of ranks, followed by economical activities such as food habits, savings, occupational status, and expenditure on ceremonies. Then structural activities were followed by vocational activities in rank of order. The members and non members had given different ranks to different activities. This indicated that members of WSHG were more engaged in empowerment and capacity building activities than the non members

The calculated t value was found to be significant at 5 percent level of significance and confirms the distinctions between the two groups of respondents as to their involvement in different empowerment activities. And the members were proving to be superior as compared to the non members.

Conclusion

The members of WSHG were mainly involved in the activities like dairy farming, mushroom cultivation, poultry keeping and post harvest activities of crops in order of ranks, they also perform activities like crop production, sheep rearing, tree planting, value addition and nutritional garden. The non members farm women mainly were involved in activities like post harvest, mushroom cultivation, tree planting and crop production in order of ranks.

The members of WSHG were mainly taking up the nonfarm activities up to a greater extent in financial involvement, resource management, knowledge and skill development, in order of ranks; they also perform activities like control over resource, linkage and cooperation, marketing activities along with community management.

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Group Dynamics and Perception of Members of Self Help Groups

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Abstract

The self help groups bring out the possibility of women in moldings the community in right perspective and explore the initiatives of women in taking up entrepreneurial ventures. Self help groups empower women and train them to take active part in the socio-economic progress of the nation and make them sensitized, self made and self disciplined. The result showed that 100 percent of SHG members got training on agriculture, 37.5 percent of SHG gets training on livestock, 55 percent gets training on education, 27.5 percent gets training on fisheries. 60 percent gets training on poultry, 85 percent SHG members gets training on marketing while 80 percent members gets training on mushroom cultivation.

Key Words: Group dynamics, Perception, Self Help Groups

Introduction

Empowerment of women has now become a key issue in the Government's Five-Year Plans-by organizing women in to Self Help Groups to make the beginning of a major process of empowering women. In recent years, SHGs have become significant institutions for rural development. It is now being increasingly realized that instead of targeting the individual in the process of development, it would be more useful to adopt the approach of group development.

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The group approach makes available the collective wisdom and combined resources for any task. Self help groups enhance the equality of status of women as participants, decision makers and beneficiaries in the democratic, economic, social and cultural spheres of life. In all stages of economic and social activities, involvement of women becomes essential. They encourage women to take active part in the socio-economic progress of our nation. The self help groups bring out the possibility of women in moldings the community in right perspective and explore the initiatives of women in taking up entrepreneurial ventures.

Self help groups empower women and train them to take active part in the socio-economic progress of the nation and make them sensitized, self made and self disciplined. Self help groups may remove the social limitations of women such as superstition and may contribute for their dominant role in decision making. With this background, a critical study of the evaluation of the SHGs will be the immense use in knowing the functioning, prospects and problems in relation to the empowerment farm women through SHG. Thus the present study has been formulated with the following specific objectives

Objectives

1. To find out the group dynamics effectiveness of the members and non members of SHG.
2. To study the opinion of members and non members towards SHG.

Methodology

The study was conducted in 4 blocks comprising of 8 villages of Kendrapada district of Odisha state. A total of 240 SHG members and non-members were selected at random for the research study. Among them 160 were members of various Self Help Groups and 80 were non-members for comparision. Ex-post facto survey was conducted with a structured and pre-tested schedule and data obtained was interpreted for final conclusion.

Result and Discussion

Group dynamics effectiveness of the members and non members of SHG.

1. Collective efficacy:

Collective efficacy of respondents was studied and presented in the table shown below.

Table no:1 Collective Efficacy of Respondents:

S. no	Particulars	Members		Non members	
		Mean Score	Rank	Mean score	Rank
1.	Members are willing to join and do their share of work	2.11	I	1.32	I
2.	Members of groups as a whole solves any problems	1.98	IV	1.11	IV
3.	Members are always able to discuss any problem that arises	1.77	VI	1.01	VI
4.	Members are confident that their group members can perform any task	2.01	II	1.21	III
5.	Members have ability to tackle any problem as a group	1.89	V	1.10	V
6.	Members are committed towards collective goals	2.00	III	1.23	II
	TOTAL	**1.96**		**1.16**	

t value- 5.274**

Results from the table above revealed that the members of WSHG were involved in collective efficacy and their ranks were as follows according to their mean members were willing to join and do their share of work, members were confident that their group members can perform any task, members were committed towards collective goals, members were always able to discuss any problem that arises and similarly the rank were given to the non members also which was same except in members were confident that their group members can perform any task and members were committed towards collective goals.

The members and non members were given different ranks to different activities and according to the total mean one can clearly say that members were more empowered as compare to the non members.

The calculated t value was found to be significant at 5 percent level of significance and confirms the distinctions between the two groups of respondents as to their involvement in different economic activities. And the members were proving to be superior as compared to the non members.

2.General perceived self efficacy:

General perceived self efficacies of the respondents were studied and the results obtained are shown in the table below.

Table no:2: General Perceived Effecacy of Respondents:

S. no	Particulars	Members Mean score	Rank	Non members Mean score	Rank
1.	Members can solve any difficult problem if they try	1.89	V	0.91	VII
2.	Easy for members to stick to aims and accomplish goals	2.01	I	0.13	III
3.	Members when in trouble can think of solution	2.00	II	1.22	I
4.	Members can find means to get what they want	1.90	IV	1.09	V
5.	Members can deal with unexpected events	1.87	VII	1.11	IV
6.	Can solve problems with necessary efforts	1.88	VI	1.14	II
7.	They can find several solution	1.98	III	1.01	VI
	TOTAL	**1.89**		**0.96**	

t value- 6.459**

Results from the above table showed the general perceived efficacy of the members which were mainly easy for members to stick to aims and accomplish goals, members when in trouble can think of solution, they can find several solution, members can find means to get what they want, members can solve any difficult problem if they try in order of ranks. The non members farm women were mainly empowered in thinking of a solution were able to solve problems with necessary efforts, members were stacked to their aims and goals, and members were able to deal with unexpected events.

Results from the above table showed that the mean value of the members were much higher than the non members. The

calculated t value was found to be significant at 1 percent level of significance and confirms the distinctions between the two groups of respondents as to their involvement in different economic activities. And the members were proving to be superior as compared to the non members.

Opinion of members and non members towards SHG functioning:

1.Trainings:

Training is an important component of group capacity building. Number of training given to group members on various aspects of economic activity is an indicator of effective group functioning. Training improves the knowledge and skills to handle the group activities properly. Results of the investigation are presented in table below.

Table no:3: Training Areas:

S. no	Trainings	Frequency	Percentage
1.	Agriculture	40/40	100/100
2.	Livestock	15/40	37.5/100
3.	Education	22/40	55/100
4.	Fisheries	11/40	27.5/100
5.	Poultry	24/40	60/100
6.	SHG-book keeping	14/40	35/100
7.	Marketing	34/40	85/100
8.	Mushroom cultivation	32/40	80/100

The table above showed that 100 percent of SHG members gets training on agriculture, 37.5 percent of SHG gets training on livestock, 55 percent gets training on education, 27.5 percent gets training on fisheries. 60 percent gets training on poultry, 85 percent SHG members gets training on marketing while 80 percent members gets training on mushroom cultivation. The results

indicated that the WSG members mainly received training on vocational aspects to increase their knowledge on profitable aspects.

2. Frequency of conduction of meeting:

Frequency refers to the periodicity of the meeting. This can be ascertained from the meeting register of the group.

Table no. 4: Frequency of Conducting Meeting:

S. no	Periodicity	Frequency	Percentage
1.	Weekly	11	27.5
2.	Monthly	22	55
3.	When required	7	17.5
	Total	**40**	**100**

The table shown above revealed that most of the SHG conduct 55 percent meeting monthly followed by 27.5 percent conduct weekly meeting and only 17.5 percent conduct meeting only when required.

3. Attendance :

Presence of members in time in meeting provides opportunity to the members to participate fully group transaction. Attendance means the regularity and irregularity of the respondents in attending the group meeting. Results obtained to their effect are presented in the table below.

Table no. 5 : Attendance of Members

S. no	Attendance	Frequency	Percentage
1.	Up to 50	3	7.5
2.	50-75	12	30
3.	Above 75	25	62.5
	Total	**40**	**100**

It is revealed from the table shown above that majority of meetings(62.5 percent) of SHG registered above 75 percent of attendance followed by 30 percent SHG which registered 50-75 percent of attendance and only a mere 7.5 percent of SHG registered less than 50 percent of attendance.

4. Frequency of maintenance of register:

Frequency of maintaining register shows the regularity in work of any SHG. The results sre presented in the table below.

Table no: 6 Frequency of Maintenance of Register:

S. no	Register maintenance	Frequency	Percentage
1.	Regularly	40	100
2.	Occasionally	0	0
	Total	**40**	**100**

The data presented above revealed that 100 percent of SHG maintains regular register which facilitates its regular work.

Conclusion

The result showed that 100 percent of SHG members got training on agriculture, 37.5 percent of SHG gets training on livestock, 55 percent gets training on education, 27.5 percent gets training on fisheries. 60 percent gets training on poultry, 85 percent SHG members gets training on marketing while 80 percent members gets training on mushroom cultivation.

The result revealed that most of the SHG conduct 55 percent meeting monthly followed by 27.5 percent conduct weekly meeting and only 17.5 percent conduct meeting only when required.

It is also revealed that majority of meetings (62.5 percent) of SHG registered above 75 percent of attendance followed by 30 percent SHG which registered 50-75 percent of attendance and only a mere 7.5 percent of SHG registered less than 50 percent of attendance.

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