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EDITORIAL

Dear Readers

In the context of this rapidly changing, highly competitive global environment, as well as changes in the state and regional demographics and shifted funding streams, extension must recognize and respond to the challenges and opportunities that impact our work. It is at this exciting and critical juncture that Extension presents for a clear vision for its stakeholders and provides strategic guidelines for its research, education faculty and field professionals. In this changing and competitive global market place, it is not only imperative that we assess our current situation, set goals and develop organizational capacity to reach these goals, but that we set the stage for the kind of transformative change required to make the Extension organization and its work truly effective. Along with a formalized institutional authentication of goals and strategies, strategic plan must be prepared for every extension effort to present a common vision, language and understanding. This plan can guide our work and foster the kind of dynamic and cohesive environment that will inspire and equip our Extension workforce to collectively address complex needs and boldly deliver on our mission.

Dr. R. K. Raj
Chief Editor

CONTENTS

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Perceived Reaction of Youths towards Farming as Means of Livelihood

Sasmita Panda & Dr. C. Satapathy
Research Associate and Director
Amity Humanity Foundation, Bhubaneswar, Odisha

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ABSTRACT

Youths are the future of country. Their participation in livelihood system particularly in agriculture is of greater importance. The present scenario reveals that with increase in education the youths are moving in search of jobs. The result has been lack of competent man power in farming occupation. The dislike for agriculture of the youths stands on the reasons of agriculture not profitable for educated persons, dislike to work with soil and animals and uncertainty of production. Lack of farmer-friendly policy, continuous land fragmentation and lack of facility for agri-business are the major constraints to motivate youths for agriculture. The provision like strong marketing facilities, insurance policy and risk coverage would be helpful to keep youth in agriculture.

Key Words: *Agribusiness, Climate hazards, Livelihood, Mechanized Farming, Youth*

Introduction:

At present agriculture does not appear to be sustainable livelihood system. There are multiple factors of social, economic, cultural and political reasons contributing towards diversification from farming. The farmers who are old or above middle aged, somehow or other are sticking to their parental occupation where the youth exhibit negative reaction to the farming. On the basis of such events they cannot sustain their living standard. In India at rural sector the youth population within 35 years is consisting of 51.39% male and rest 48.61% female. The huge population accounts for 13.87% of the total population within age group of 13-19 years, 8.73% 20-24 years and 18.45% within 25-35 years of age.

The youths do not stick to agriculture profession because of non- stable income, non professional growth and non - recognition by the society. The feeling is reflected and strengthened as evidenced by high suicidal rate of farmers accounting to 2, 56,913 by the year 2010.

Objectives of the study:

Keeping these considerations in views a study was conducted in Odisha based on the following objectives.

To determine

1. Perception of youths towards farming as means of living.

2. Reasons for declining of interest towards farming

3. Constraints in operation of farming as livelihood system.

4. Expectation of youths from govt. to opt for farming in business mode.

Review of Literature:

Gouda and others (2013) in their study on Impact of integrated pest management technologies concluded that rural youths involved in cotton cultivation have demonstrated substantial profit in farming.

Singh and Sharma (2013) in a study of rural youth in agriculture and rural development in Rewa district of Madhya Pradesh concluded that the problems of youth are unavailability of employment in rural areas. Added to this unavailability of training centers to provide training for improves in agriculture, profit and year round income flow as the reasons for migration into cities. More wages and less risk are the incentive for youth to move outside.

Ini. A. Akpabio (2013) in the study of Agriculture extension, agriculture development and youth employment in Nigeria reported that value orientation and capacity development, innovative and dynamic production system in agriculture sector will attract youth for agriculture.

Vinay Kumar and et. al. (2013) suggested that young people have enormous potential for innovation, entrepreneurship and risk taking. A strategy in farming should involve technology and training from management pint of view as means of generating increased income. It will provide social reorganization to youth.

Kadam and et. al. (2013) in a study of Retaining rural youth in farming concluded that creation of remunerative economic opportunities for young people in agriculture would provide opportunities for them to be in farming.

Sailaja (2013) reported from Maharashtra that young farmers as producers have a greater capacity for innovation and entrepreneurship. This capacity may better equip them to address the emerging requirements of agriculture and the rural non farm economy. The participation of youth in decision making is advised to be emphasized.

Satapathy and Mishra (2013) in their study, Techno economic co-relates for retaining youth in agriculture pleaded for crop insurances, strong market link, farm mechanization, input facilities and incentives to retain youth in agriculture.

Materials & Methods

The study was conducted covering six districts of the state namely Khurda, Nayagarh, Kendrapara, Puri, Sambalpur and Jagatsinghpur with total sample size of 250. The sample size is given below.

Table: 1 Sample Selection

Sl. No.	District	Number of sample	% of the total
1.	Khurda	41	16.40
2.	Nayagarh	42	16.80
3.	Kendrapara	42	16.80
4.	Puri	56	22.40
5.	Sambalpur	41	16.40
6.	Jagatsinghpur	28	11.20
	Total	**250**	**100.00**

The sample was selected at random fulfilling the criteria like (1) belonging to rural areas, (2) below age group of 35 years, (3) must have education up to middle school standard and above, (4) having experience in farming, (5) in search of alternative job and (6) experiencing dissatisfaction with farming.

The randomized samples were personally interviewed to obtain relevant information. A scoring system of analysis was adopted to quantifying the qualitative response and the result so obtained are present here with.

Results & Discussion

Findings:

1. Reasons of dislike towards Agriculture:

The present youths express dissatisfaction to take up farming as livelihood for variety of reasons. The reactions of the sample about disliking for farming have been analyzed as given in table 2

The randomized samples were personally interviewed to obtain relevant information. A scoring system of analysis was adopted to quantifying the qualitative response and the result so obtained are present here with.

Findings:

1. Reasons of dislike towards Agriculture:

The present youths express dissatisfaction to take up farming as livelihood for variety of reasons. The reactions of the sample about disliking for farming have been analyzed as given in table 2

Table: 2 Reasons of dislike towards Agriculture

Sl. No.	Reasons for dislike	Mean Score	Rank
1	Low social prestige	2.28	X
2	Not remunerative	2.66	V
3	Hazards of climate	2.68	III
4	Ample job outside farm	2.30	IX
5	Not a skilful job	2.26	XI
6	Work with soil and animals	2.72	II
7	No scope for upward social mobility	2.50	VIII
8	Not good for educated persons	2.76	I
9	Lack of year round income	2.57	VII
10	Difficult to compete	2.67	IV
11	Difficult to meet family requirements	2.62	VI

Data in Table 2 reveal that farming is not a good profession for educated youth because they have to work with soil and animals. Hazards of climate are found to be a constant discouraging factor followed by difficult to compete for living with farming occupation. The other reasons cited are, it is not remunerative, difficult to meet family requirements, absence of year round income with no scope for upward social mobility, ample jobs available outside farm, low social prestige and not involving skill oriented activities. However, these are the reasons for which the youths move for city based job, construction work, business and engagement in industrial sector.

2. Constraints in Operation of farming in livelihood system:

Farming as a family occupation is going on after generation to generation in rural sector of Odisha. The good farmers with better return are attached with social prestige. But the youth perceive serious constraints in management of farm as has been reflected in table given below.

Table: 3 Constraints in Management of farms

Sl. No.	Constraints	Mean score	Rank
1	Low return ratio	2.45	VI
2	More of risk and hazards	2.65	IV
3	Lack of facilities for agribusiness	2.68	III
4	Lack of farmer support policy	2.72	I
5	Uneconomical farm size	2.12	X
6	Lack of effective farmer co-operative societies	2.34	IX
7	Non-remunerative farm technology	2.41	VIII
8	High cost of inputs and labor	2.42	VII
9	Lack of social security at old age	2.51	V
10	Continuous land fragmentation	2.71	II

Results reveal that lack of farmer support policy is mentioned as the main constraint in farming enterprise. Continuous land fragmentation, lack of facilities for agri-business, more of risk and hazards are the following reasons for which the youth are not interested to take up farming. The other constraints include are, lack of social security at old age, low return ratio from farming, high cost of inputs and labor that do not permit youths to take up farming for living. The other successive constraints are mentioned to be non remunerativeness of farm technology, lack of effective farmer's co-operative societies and an economical farm size. These factors create negative attitude in the minds of the youth to step into farming business.

3. Expectations of youth from govt. to opt. for farming:

The farming cannot progress without adequate support of the govt. At present State and National govt. are providing inputs in various forms to support the farming community. However, the sample youths expressed the following expectations to attract them into farming business.

Table: 4 Expectations from Government

Sl. No.	Variables	Mean score	Rank
1.	Credit in time with low rate of interest	2.40	VI
2.	Availability of quality inputs	1.24	IX
3.	Strong marketing facilities	2.76	I
4.	Strong insurance policy	2.67	II
5.	Mechanized farming system	2.60	IV
6.	Product linked to industries	2.12	X
7.	Risk coverage	2.64	III
8.	Remunerative well proven technology	2.48	V
9.	Intensive extension support	2.00	XI
10.	Old age pension	2.30	VII
11.	Tax free business	2.28	VIII

A look at the table reveals that there are 11 expectations from the govt. to make farming attractive and profitable. Strong marketing facilities, insurance policy and risk coverage are top most issues that youth need consideration by the Govt. The subsequent expectations are, mechanize farming system, well proven technology, and credit with low rate of interest and old aged pension for social security to satisfy the requirements of youth to take up farming. The other factors mentioned are, tax free from business, availability of quality inputs, establishment of quality inputs and establishment of product linked industries at different localities.

4. Suggestions for improvement in farming livelihood system:

Youth desire some modifications and changes not only in farming system but also in social system to contain youth in farming. The suggestions are summarized in table below.

Table: 5 Suggestions for making farming attractive

Sl. No.	Suggestions	Frequencies	Percentage
1.	Production Control	170	68.00
2.	Export oriented farming	242	96.80
3.	Strong local market facilities	237	94.80
4.	Buy back system for all commodities	132	52.80
5.	Commodity group approach in production system	75	30.00
6.	Urban amenities at village	92	36.80
7.	Irrigation facilities	88	39.20
8.	Infrastructure in terms of cold storage, transport etc.	143	57.20
9.	Continuous power supply and subsidy provision	155	62.00
10.	Farmers friendly policy	162	64.80
11.	No farming less than 1 hect. land	68	27.20

The youth feel that the present day farm business needs export oriented farming and strong local marketing facilities to create a confidence for assured income. The other suggestions include production control to escape from distress sale and farmers friendly policy. The other suggestions are continuous power supply, subsidy provision, infrastructure in terms of cold storage and transport and buy back system for all commodities. The suggestions like urban amenities at village, commodity group approach in production system and not allowing farmers to operate for farm with less than 1 hect. of land.

Conclusion:

The study conducted with randomized sample of 250 youths under age group of 30 years from six important districts of Odisha lead to arrive at the following conclusion.

1. Mismatching of education of persons to work with soil and animals, hazards of climate, difficult to compete in the business, less remunerative character of farming and difficult to meet family requirements are the reasons for dislike of youths towards farming.
2. Lack of farmers support policy, continuous land fragmentation, lack of facilities for agri- business, risk and hazards, lack of social security are the major constraints to retain youths in farming for livelihood.
3. Strong marketing facilities, insurance policy, risk coverage, mechanized farming, regulatory technologies are the major expectations from govt. to take up farming.

The suggestions for better farming enterprise in Odisha include export oriented farming, strong marketing facilities, strong production control system, farmer as friendly policy, infrastructure, irrigation and commodity group approach. However no farming less than 1 hect. of land is subject to debate as by the sample.

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Study on Livelihood Options among the Tribal in Rayagada District of Odisha

M.Samarath*, P.Swain, K.Shweta**, B.C.Das****
Dept. of Veterinary & A.H. Extension
CVSc & A.H. OUAT, Bhubaneswar

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ABSTRACT

Every year, a large chunk of workforce from Nuapada district are compelled for distress migration to work in the brick kilns of Andhra Pradesh, Uttar Pradesh andChhattisgarh. In order to find out the important factors causing distress migration among bonded labourers inNuapada district of Odisha, the present study was carried out with a sample size of 50 respondents selected randomly from one migratory destination i.e. suburbs of Raipur in Chhattisgarh.The primary data was collected with the help of pre-structured interview schedule. The results of the study revealed that, majority of the respondents stronglyagreed that social factors (43.6%), economic factors (61.2%), livelihood factors (66.2%), indebtedness factors (66.8%) and, support and servicefactors (67.8%) had a bearing on their migration.Among different factors of migration studied, support and service factors got the first rank followed by livelihood factors,indebtedness factors, economic factors and social factors, respectively.

Key Words : *Distress migration, Bonded labourers, Nuapada District*

Introduction

1. Prioritization of livelihood options

Nine livelihood options in the tribal communities such as agriculture, horticulture, animal husbandry, collection of NTFP's, fishery, Govt./semi-govt/private job, agricultural labour, non-agricultural labour and caste-based occupation have been identified. Opinions of government officials working in the tribal study areas have been taken and again triangulated with local tribal people for validating the said nine options. The tribal respondents were asked to rank the above nine livelihood options basing on suitability with respect to more profit, less time consuming, feasibility, compatible to their socio-economic, socio-cultural and socio-environmental factors, availability of technical guidance and support of financial institutions. The data were collected, analyzed statistically with help of Garret's ranking technique and result is shown in the table below.

Table 1. Prioritization of livelihood options by tribal respondents

Sl. No	Livelihood Options	Mean Score	Rank
1	Agriculture	72.36	I
2	Horticulture	64.83	III
3	Animal Husbandry	57.24	IV
4	NTFP's collection	36.36	VII
5	Fishery	53.80	IX
6	Agricultural labour	34.63	VIII
7	Non-agricultural labour	32.78	X
8	Govt/Semi govt/Private job	65.11	II
9	Caste-based occupation	45.11	VI

The above table reveals that agriculture as livelihood option was ranked first, followed by government/semi-government/private job as second, horticulture ranked third, animal husbandry ranked fourth, fishery ranked fifth, caste- based occupation of the respondents ranked sixth, NTFP's collection ranked seventh, agricultural labour ranked eighth and non-agricultural labour ranked ninth, respectively.

2. Analysis of variance of SWOT scores of different livelihood options

Average values of SWOT scores on different livelihood options are presented in Table-2 and the mean squares/ANOVA of strength, weakness, opportunity and threat of livelihood options are presented in the following tables.

Table 2. Mean ± SE of SWOT scores for different livelihood options

Livelihood options	N	Strengths	Weaknesses	Opportunities	Threats
Agriculture	120	18.09^{a}± 0.16	18.89^{c} ± 0.13	15.60^{b}± 0.18	16.95^{b}± 0.47
Animal Husbandry	120	19.70^{b}± 0.15	19.25^{c} ±0.17	17.60^{d}± 0.18	14.60^{a}± 0.18
Forestry	120	19.25^{b}± 0.17	16.89^{a} ± 0.13	16.60^{c}± 0.18	14.95^{a}± 0.47
Fishery	42	17.97^{a}± 0.27	17.88^{b} ± 0.22	15.97^{b}± 0.27	16.88^{b}± 0.22
Wage labour	120	19.16^{b}± 0.16	17.98^{b} ± 0.17	14.60^{a} ± 0.18	17.95^{b}± 0.47
Total	522	18.96± 0.08	18.22 ± 0.82	16.09 ± 0.10	16.18 ± 0.20

*Means with different superscripts along the column (for a factor) indicate significantly (P<0.05)

Strength

Overall mean scores of strength, weakness, opportunity and threats on all livelihood options were calculated as 18.96± 0.08, 18.22 ± 0.82, 16.09 ± 0.10 and 16.18 ± 0.20, respectively. The mean scores with regard to strength of agriculture, animal husbandry, forestry, fishery and wage labour were estimated as 18.09± 0.16, 19.70 ± 0.15, 19.25 ± 0.17, 17.97 ± 0.27 and 19.16 ± 0.16, respectively, with significant difference among them (Table -2). The strength of animal husbandry, forestry and wage labour livelihood options were found to be higher than other two livelihood options.However, there was no significant difference between the former three livelihood options. The strength of agriculture and fishery were found similar but numerically the strength of agriculture was higher than that of fishery, which was found to have the lowest strength in the present study.

Table 3. ANOVA of strength scores of different livelihood options

Factors	Sum of Squares	Df	Mean Square	F
Between Groups	213.520	4	53.380	15.889**
Within Groups	1736.926	517	3.360	
Total	1950.446	521		

**p<0.01

Weakness

The mean scores with regard to weakness of agriculture, animal husbandry, forestry, fishery and wage labour were estimated to be 18.89 ± 0.13, 19.25 ±0.17, 16.89 ± 0.13, 17.88 ± 0.22 and 17.98 ± 0.17, respectively, with significant difference among them (Table 4). The weakness on animal husbandry and agriculture livelihood options were found to be higher than other three livelihood options. However, there was no significant difference between the former two options. The weakness of wage labourandfishery were found to be similar but stronger than that of forestry, which was found to have the lowest weakness in the present study.

Table 4. ANOVA of weakness scores of different livelihood options

Factors	Sum of Squares	Df	Mean Square	F
Between Groups	406.779	4	101.695	36.096**
Within Groups	1456.546	517	2.817	
Total	1863.326	521		

**p<0.01

Opportunity

The mean scores with regard to opportunity on livelihood options viz. agriculture, animal husbandry, forestry, fishery and wage labour were estimated to as 15.60± 0.18, 17.60± 0.18, 16.60± 0.18, 15.97± 0.27, 14.60 ± 0.18, respectively, with significant difference among them (Table 4.4.4). The opportunity onanimal husbandrylivelihood option was found to be the highest, followed byforestry. There was significant difference between the former two options. The opportunity of fishery and agriculture were found similar but stronger than that of wage labour, which was found to have the lowest opportunity in the present study.

Table 5. ANOVA of opportunity scores of different livelihood options

Factors	Sum of Squares	df	Mean Square	F
Between Groups	600.592	4	150.148	600.592**
Within Groups	2148.176	517	4.155	
Total	2748.768	521		

**p<0.01

Threat

The mean scores with regard to threat of agriculture, animal husbandry, forestry, fishery and wage labour were estimated to as 16.95± 0.47, 14.60± 0.18, 14.95± 0.47, 16.88± 0.22 and 17.95± 0.47, respectively, with significant difference among them (Table 4.4.5). The threat on wage labour livelihood option was found to be the highestamongall livelihood options, followed by agriculture and fishery. However, there was no significant difference among the former three options. The threat of forestry and animal husbandry were found to be similar but animal husbandry as a livelihood option has the lowest weakness in the present study.

Table 6. ANOVA of Threat scores of different livelihood options

Factors	Sum of Squares	df	Mean Square	F
Between Groups	951.493	4	237.873	11.892**
Within Groups	10341.580	517	20.003	
Total	11293.073	521		

**p<0.01

3. Correlational analysis of strength, weakness, opportunity, threat and annual income of tribal respondents

Pearson's correlation coefficients among total SWOT scores of livelihood options and annual income of respondents are presented in Table 7.

Table 7. Zero order Pearson's correlation coefficient among SWOT scores of livelihood options and annual income

Variables		Strength	Weakness	Opportunity	Threats	Income
Strength	Correlation		0.671	0.677	0.529	0.023
	Significance level		.000	.000	.000	.801
	df		118	118	118	118
Weakness	Correlation	0.671		0.644	0.450	-0.025
	Significance level	.000		.000	.000	.788
	df	118		118	118	118
Opportunity	Correlation	0.677	0.644		0.603	-0.080
	Significance level	.000	.000		.000	.387
	df	118	118		118	118
Threats	Correlation	0.529	0.450	0.603		-0.084
	Significance level	.000	.000	.000		.362
	df	118	118	118		118
Income	Correlation	0.023	-0.025	-0.080	-0.084	
	Significance level	.801	.788	.387	.362	
	df	118	118	118	118	

The degree of association between annual income and strength was estimated as 0.023. Corresponding values with weakness, opportunity and threat were found to be -0.025, -0.080 and -0.084. None of the above correlations were found to be significant. So it is revealed that very weak association existed between annual income and SWOT of livelihood options viz. agriculture, animal husbandry, forestry, fishery and wage labour.Further, very strong and significant degree of association among four components of SWOT was revealed in the present study ranging. The correlation coefficient between strength and weakness was estimated as 0.671, which was found to be significant. Corresponding values between strength vs opportunity and strength vs threat were 0.677 and 0.529, respectively which were also significant. Similarly, weakness showed strong and significant relationship with opportunity and threats having estimates of 0.644 and 0.450, respectively. Further, opportunity was found to have strong, positive and significant degree of association with correlation coefficient of 0.603 in the present study.

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Information Management Behavior of Hubrid Paddy Seed Growers

B. Mishra, J. Rani* and S. Das**

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Introduction

It refers to how frequently a farmer is regularly using various sources in acquiring, processing and dissemination of information on Hybrid rice seed production technology. For example contact with Personal-cosmopolite channels (department of agriculture officials, University scientists, Representatives of private agencies),contact with Personal-localite channels (family members, friends & relatives, progressive & experienced farmers), contact with Impersonal-cosmopolite channels (farm broadcasts, telecasts, agricultural magazines,) etc.Classification of the respondents on basis of information management behavior.

Table 1 Classification of respondents on basis of Information Management Behavior

Sl. No.	Statement	Regularly		Often		Occasionally	
		F	%	F	%	F	%
1	How frequently you contact Personal -Cosmopolite channels.	83	75.45	27	24.54	00	00
2	How regularly you contact Personal -localite channels to acquire hybrid rice seed production information	84	76.36	26	23.63	00	00
3	How regularly you contact Impersonal -cosmopolite channels to acquire hybrid rice seed production information	00	00	63	57.27	47	42.72
4	How regularly you evaluate information on hybrid rice seed production.	86	78.18	22	20	2	1.81
5	How regularly you treat (consulting experts) information on hybrid rice seed production	85	77.27	14	12.72	11	10
6	How regularly you store (Memorizing, Literature and Audio & Video materials) information on hybrid rice seed production	71	64.54	20	18.18	19	17.27
7	How regularly you disseminate hybrid rice seed production information through Individual contacts	84	76.36	16	14.54	10	9.09
8	How regularly you disseminate hybrid rice seed production information through Group contacts	73	66.36	37	33.63	00	00
9	How regularly you disseminate hybrid rice seed information through Mass contacts	42	38.18	54	49.09	14	12.72

It is revealed that 75.45% of the respondents have contact with Personal-cosmopolite channels regularly, rest 24.54% of the respondents often contact personal cosmopolite channels.76.36 % of them contact Personal–localite channels to acquire hybrid rice seed production information. Majority (77.27%) of the respondents regularly consult experts for obtaining information on hybrid rice seed production, 64.54% of tem store (Memorizing, Literature and Audio & Video materials) information regularly. As high as 76.36 % of the respondents disseminate information on hybrid rice seed production through individual contacts regularly followed by 66.36% of the respondents do rthis through group contact regularly and 33.63 % of them often follow this method.

Table2 Overall distribution of respondents on basis of Information management behavior

Sl. No.	Information management behaviour	Class interval	F	%
1	Low	13-19	24	21.81
2	Medium	19-25	39	35.45
3	**High**	**25-31**	**47**	**42.72**

* Ex. PG. Scolar, ** Asst. Prof. Department of Extension education, CA, OUAT, BBSR-3

The high level of information management behaviour as in the table indicates that majority of the respondents relied on personal cosmopolite channels like representatives of private agencies followed by personal localite channels like progressive farmers and friends. The low levels of formal schooling, trainings undergone as well as medium level of farming experience might have forced them to fall under medium category with regard to this variable.

Training undergone

Training is an organized activity aimed at imparting information and/or instruction to improve the performance of the respondents or and help them to attain a required level of knowledge.

Table 3 Classification of respondents on basis of training undergone

Sl. No.	Training received	Class interval	F	%
1	High	10-15	34	28.33
2	Medium	5-10	36	30
3	**Low**	**1-5**	**40**	**36.36**

It is evident from the table that 36.36 % of the respondents have received very less nos of training and rest of them have received comparatively more nos. of training on hybrid seed production of paddy.

Social participation

It refers to the degree of involvement of the Respondents from mere non-member of holding organizational positions and the degree to which the individual respondent is involved as member or active member or committee member or office bearer in social and political organizations such as village panchayat, cooperative society, farmer's forums, youth club, SHGs etc.

Table 4 Classification of respondents on basis of social participation

Sl. No.	Statement	No membership		Ordinary membership		Office bearer	
		F	%	F	%	F	%
1	Cooperative society	37	33.63	73	63.36	00	00
2	Gram panchayat	26	23.63	84	76.36	00	00
3	Social organization	49	44.54	21	19.09	40	36.36
4	Religious organizsation	35	31.81	75	68.18	00	00
5	Cultural organisation	15	13.63	95	86.36	00	00
6	Educational organization	49	44.54	61	55.45	00	00

It is revealed that majority (86.36%) of the respondents are members in the cultural organisation, 68.18 %of the respondents participate in religious programme, and 76.36% of them respondents are members in gram Panchayat. About 63.36% of the respondents have membership in cooperative society, 36.36% are office bearer in social organisation, 44.54 % of the respondents have no membership in social organization and 55.45 % of the respondents visit to educational institutions.

Table 5 Overall distribution of respondents on basis of social participation

Sl. No.	Social participation	Class interval	F	%
1	Low	6-9	26	23.63
2	Medium	9-12	12	10.90
3	**High**	**12-15**	**72**	**65.45**

High (65.45 %) level of social participation is due to the fact that there is availability of organization in the study area and majority of the respondents having membership in cooperative societies, religious, cultural, social and educational organization.

Extension contact

From table 6 it is revealed that 56.36% of the respondents have contact with agriculture extension officers, majority of the respondents (56.36%) have contact with Official of state department of agriculture and officials of NGO, hardly10 % of the respondents have contact with scientist of Agriculture University

Table 6 Classification of respondents on basis of extension contact

Sl. No.	Statement	No membership		Ordinary membership		Office bearer	
		F	%	F	%	F	%
1	Agricultural extension officer	48	43.63	62	56.36	00	00
2	Official of state department of agriculture	48	43.63	62	56.36	00	00
3	Scientist of agriculture university	99	90	11	10	00	00
4	Officials of NGO	48	43.63	62	56.36	00	00
5	Official of private firms	24	21.81	86	78.18	00	00
6	Bank officials	25	22.72	85	77.27	00	00

Table 7 Overall distribution of respondents on basis of Extension contact

Sl. No.	Extension contact	Class interval	F	%
1	Low	6-8	14	12.72
2	Medium	8-10	33	30
3	**High**	**10-12**	**63**	**57.27**

The high level of extension contact (57.27%) is maintained by the farmers could be due to medium farming experience and high level of information management behavior.

Farming Experience

The respondents were classified into three categories based on class interval, frequency, and percentage.

Table 8 Distribution of respondents on basis of Farming experience

Sl. No.	Farming Experience	Class interval	F	%
1	**Low**	**1-5**	**62**	**56.36**
2	Medium	5-10	48	43.63
3	High	>10	00	00

As it is seen from the table that majority (56.36%) of the respondentshad lowfarming experience followed by medium (43.63%), no respondents have high farmingexperience in adoption of hybrid seed production technology of paddy.

Achievement Motivation

The following statements with frequency and percentage are given below:

Table 9 Distribution of respondents on basis of Achievement Motivation

Sl. No.	Statements	S A		A		UD		D		SD	
		F	%	F	%	F	%	F	%	F	%
1	One should set easy goals for one self &try to reach them easily	50	45.45	58	52.72	2	1.81	00	00	00	00
2	One should work like a slave until one is satisfied with the result	50	45.45	58	52.72	2	1.81	00	00	00	00
3	Work should come first even if one cannot get rest	60	54.54	47	42.72	3	2.72	00	00	00	00
4	There is no need to put more efforts because everything is determined by god	00	00	00	00	5	4.54	69	62.72	36	32.7
5	When working in the group one should try to excel others in similar talks	60	54.54	47	42.72	3	2.72	00	00	00	00
6	One should use all efforts and success in occupation even if one has been neglectful of families	60	54.54	47	42.72	3	2.72	00	00	00	00

It is repaved that 45.45 % strongly agree that one should set easy goals for one self &try to reach them easily. 52.72 % agree to the statement that one should set easy goals for one self &try to reach them easily and to the statement that one should work like a slave until one is satisfied with the result, followed by 54.54% of the respondents stronglyagree to the statement that Work should come first even if one cannot get rest.

About 62.72 % of the respondents strongly disagree to the statement that there is no need to put more efforts because everything is determined by god followed by 54.54% of the respondents strongly agree to the statement that while working in the group one should try to excel others in similar talks. Majority of the respondents (54.54%) strongly agree to the statement that one should use all efforts and success in occupation even if one has been neglectful of families.

Table 10 Overall distribution of respondents on basis of achievement motivation

Sl. No.	Achievement Motivation	Class interval	F	%
1	Low	18-22	30	27.27
2	Medium	22-26	28	25.45
3	**High**	**26-30**	**52**	**47.27**

From the above table it is revealed that majority of respondents (47.27%) having high level of achievement motivation, followed by 27.27 % with low level of achievement motivation and 25.45 % with medium level of achievement motivation.

Scientific orientation

Table 11 Distribution of respondents on basis of scientific orientation

Sl. No.	Statements	S A		A		U		D		SD	
		F	%	F	%	F	%	F	%	F	%
1	Improved methods of hybrid rice seed cultivation gives better result to a farmer than traditional ones	70	63.63	37	33.63	3	2.72	00	00	00	00
2	A farmer with lot of experience should also use new methods of hybrid rice seed production as recommended	60	54.54	47	42.72	3	2.7	00	00	00	00
3	A good farmers experiences with new ideas of farming	60	54.54	47	42.72	3	2.7	00	00	00	00
4	Traditional methods of farming have to be changed in order to raise the standard of living	70	63.63	37	33.63	3	2.7	00	00	00	00
5	Though it takes time for the farmers to learn new methods of hybrid rice seed production , it is worth the effort	70	63.63	36	32.72	4	3.63	00	00	00	00

From the table table it is revealed that 63.63% of the respondents strongly agree that improved methods of hybrid rice seed cultivation gives better result to a farmer than traditional ones and of the respondents 54.54% strongly agree with the statement that a farmer with lot of experience should also use new methods of hybrid rice seed production as recommended.

About 63.63% of the respondents strongly agree that 'Traditional methods of farming have to be changed in order to raise the standard of living', though it takes time for the farmers to learn new methods of hybrid rice seed production.

Table 12 Overall distribution of respondents on basis of scientificorientation

Sl.No.	Scientific orientation	Class interval	F	%
1	Low	10-15	3	2.72
2	Medium	15-20	27	24.54
3	**High**	**20-25**	**80**	**72.72**

From the above table above it is revealed that high level of scientific orientation among majority (72.72%) of the respondents could be due to the medium to high levels of achievement motivation and extension contacts. Hybrid seed production could be considered as one of the premier technology in crop cultivation.

The farmers practicing this technology voluntarily sensitized towards application of modern scientific technological knowledge in theirfield. The Hybrid rice seed production draws the attention of technological know-how and application of scientific knowledge in the process during various operations.

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Ensuring Sustainable Livelihood - a case of Farmer First Project

H. K.De, M. K. Das, N. Panda and S. Shasani
ICAR-Central Institute of Freshwater Aquaculture
Kausalyaganga, Bhubaneswar, Odisha 751 002

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ABSTRACT

Under farmer FIRST project about 400 beneficiary farmers were provided access to improved agricultural technologies in Khordha district. Skill training and demonstration of modules on improved technologies on Crop, Horticulture, Livestock and Fishery were conducted. Following DFID framework (1999) the impact on livelihoods of farmers was measured through finding comparative position of physical, social, financial, human and natural assets of the farmers before and after adoption of the interventions.Data was collected from 87 randomly selected beneficiaries. The mean value of overall standard of living of adopted farmers derived through addition of the index values of five assets was worked out to be 2.84in post-adoption period against 2.41 in pre-adoption period. The project had a positive and highly significant impact on the livelihood of the beneficiaries.

Keywords: *Livelihood, Impact, Farmer, Agricultural technologies*

Introduction

The Farmer FIRST approach considers putting the farmer in driver's seat in matters of problem identification, prioritization, conduct of experiment and its management. This approach focuses on enriching knowledge and integrating technologies in the farmers' conditions and to enhance farmer-scientist interface. This project is unique in its approach which creates a platform for all the scientists irrespective of their disciplines, to get an opportunity to regularly interact with the rural farm environment and thus, collect valuable feedback on problems, priorities, opportunities and status of agriculture and agricultural technology at the ground level and develop suitable technology modules for different farm situations. Emphasis of the project was on farmers' farm, innovations, resources, science and technology. Small holders, landless and farm women are specially being addressed through technology integration modules.

The project, being implemented by ICAR-Central Institute of Freshwater Aquaculture, Bhubaneswar has covered 4 villages in Khordha district i.e., Kantia Talasahi, Kantia uparasahi (Block-Jatani), Jagannathpur (Block-Balianta) and Dorbanga (Block-Balipatna). In total the project has involved more than 400 beneficiaries from 2016-17. Modules on improved technologies on Crop, Horticulture, Livestock and Fishery are being demonstrated. Skill training and technical backup was provided to the beneficiaries. Aiming at sustainable agriculture along with profit maximization, 4 fish based integrated farming systems were developed where different enterprises like fishery, horticulture, poultry and vermicompostingwere integrated.Integrated farming that includes aquaculture can be broadly defined as the concurrent or sequential linkages between two or more farming activities, of which at least one is aquaculture (Edwards, 1993).Integrated aquaculture–agriculture isreported to have improved the livelihoods of small-scale farmers in Bangladesh. Given the inherent local adaptability of the IAA approach, this concept offers a promising alternative – and thus should be considered and tested – in other developing countries(KhondkerMurshed-E-Jahan *et. al*, 2011). Improved technological modules like integrated nutrient management in paddy, green gram in rice fallow (TARM 1), scientific carp culture, backyard poultry strain (Kaveri/Vanaraja), introduction of photo insensitive variety of cauliflower var. Fujiyama and introduction of bush type Frenchbean var. Falguni were demonstrated and performance was recorded.

A livelihood is a means of deriving a just and dignified living by the society, family and individuals (Ellis, 2000). A livelihood can be urban or rural depending upon the context in which families derive their living(Scoones, 1998). Majority of the people in the study area are small and marginal farmers and involved in farming as a primary means of earning a living. Agriculture, fish farming, animal husbandry and non-farm activities are some of the common livelihoods. The livelihoods of these people are at times challenged due to frequent visit of natural calamities.Rural livelihood is complex and wide-ranging (Ashley *et al*, 2003). The farmer first project emphasized - providing access to advanced agricultural technologies, building capacities, enhanced farmer-scientist interface and institutional innovations.These interventions assume significance forattaining sustainable rural livelihoods. Through this study an attempt was made to assess the impact of improved agricultural practices on livelihood of adopted farmers.

Materials and Method

The impact assessment of this projecton farming situation and livelihood of farmers was carried out covering a randomly selected sample of 87 farmers in the adopted villages of Farmer FIRST project in the Khordha district of Odisha during 2016-17. A structured interview schedule based on DFID framework was developed and data was collected by personal interview method. The same interview schedule was introduced before i.e., in 2016-17 and after the intervention i.e., in 2019-20. The impact on livelihoods was measured through finding comparative position of physical, social, financial, human and natural assets of the farmers before and after adoption of the interventions.

The physical assets included type of housing, sanitation, conveyance, availability of electricity, cooking and communication facilities. The social assets mainly referred to the recognition, social and political participation, active involvement in developmental works, common services used and group membership pattern. The financial assets were measured on the basis of parameters like sources of income, kinds of savings and investments, lending and borrowing. The human assets involved language competencies, literacy level, management skill and mobility. The natural assets were the possession of natural resources of farm family, viz. farm size, irrigated land, livestock holding, poultry and fishpond. Overall, the standard of living of farmers was assessed on the basis of their assets holding before and after adoption of the technology. Thus, the value of overall standard of living ranged from 5 to 25.

Standard of living of beneficiary farmer is expressed as

$$Li = \sum (Pi+Si+Fi+Hi+Ni)$$

i = 1, 2, 3…… 87

$$P_i = \frac{\sum_{i=1}^{87}\sum_{j=1}^{7} PA_{ij}}{\sum_{i=1}^{87}\sum_{j=1}^{7} S_{max}}$$

Where

Pi- Physical Asset index

PA- Physical asset

Smax- Highest score

j- Indicates the parameters measuring physical assets, viz. no. of rooms in house, type of roof of the house, sanitary/latrine condition, type of vehicles-owned, electric power usage, cooking facilities and telephone connectivity

$$S_i = \frac{\sum_{i=1}^{87}\sum_{k=1}^{4} SA_{ik}}{\sum_{i=1}^{87}\sum_{k=1}^{4} S_{max}}$$

Where

Si- Social Asset index

SA- Social asset

Smax- Highest score

k- Indicates the parameters measuring social assetsviz. respect/recognition in village, participation in local political issues, use of common facilities at the locality, membership in common bodies / clubs / groups

$$F_i = \frac{\sum_{i=1}^{87}\sum_{l=1}^{4} FA_{il}}{\sum_{i=1}^{87}\sum_{l=1}^{4} S_{max}}$$

Where

Fi- Financial Asset index

FA- Financial asset

Smax- Highest score

l-Indicates the variables measuring financial assets, viz. sources of income(agriculture, agricultural labour, livestock, fish farming, business, salary, etc.), kinds of savings (bank, post office, chit fund, group fund, etc.), kinds of investment (insurance, deposits in bank/finance company, bonds, etc.), lending

$$H_i = \frac{\sum_{i=1}^{87}\sum_{m=1}^{4} HA_{im}}{\sum_{i=1}^{87}\sum_{m=1}^{4} S_{max}}$$

Where

Hi- Human Asset index

HA- Human asset

Smax- Highest score

m- Indicates the variables measuring human assetsviz. communication ability, education/ literacy, management skills(ability to manage agriculture, livestock, fish farming, business, marketing, etc.), travel /mobility

$$N_i = \frac{\sum_{i=1}^{87}\sum_{n=1}^{4} NA_{in}}{\sum_{i=1}^{87}\sum_{n=1}^{4} S_{max}}$$

Where

Ni- Natural Asset index

NA- Natural asset

Smax- Highest score for each asset

n-Indicates the variables measuring natural assets viz. landholding, irrigation sources, livestock holding, poultry birds holding, fish pond

Appropriate statistical tools like mean, standard deviation and paired t test are used.

Results and discussion

Socio-economic status of the respondents

Around 15 percent of the respondents were below 35 years and the rest were above 35 years. Ninety-three percent of the respondents were male. Around 32 percent of the respondents belong to scheduled caste and scheduled tribe, 43 percent belong to general and the rest were in socioeconomically backward categories. Around 18 percent of the respondents were illiterate and 78 percent attended school education. Around 64% of the respondents had a family size upto four and 36% had a bigger family size. Farming is the main source of income for 95 percent of the respondents. About 86 percent of the respondents were below poverty line. About 60 percent of the respondents own a holding size of less than 2 acres. One third of them have holding size 2-4 acres. Seventy seven percent of the respondents consult other farmers for advice on farming.

Table 1: Physical Asset Index

Parameters	Obtained Score		
	After	Before	Difference
No. of rooms	250	225	25
Roof of house	391	327	64
Sanitary latrine	270	217	53
Vehicle	305	291	14
Electricity	267	242	25
Cooking stove	314	234	80
Telephone	348	346	2
Total Score	**2145**	**1882**	**263**
Maximum Possible Score	3045	3045	3045
P_i	**0.71**	**0.62**	**0.09**

Among the physical parameters major differences observed in cooking stove, roof of houses, sanitary latrine etc. Changes were also observed in terms of having electricity connection, number of rooms etc.

Table 2: Social Asset Index

Parameters	Obtained Score		
	After	Before	Difference
Respect/recognition in village	363	310	53
Participation in local political issues	283	236	47
Using common facilities at locality	398	386	12
Membership in common bodies	208	159	49
Total Score	**1252**	**1091**	161
Maximum Possible Score	1740	1740	1740
S_i	**0.72**	**0.63**	**0.09**

Recognition and membership in association were the two parameters that recorded significant difference. Other social parameter registering improvement was participation in local political sphere.

Table 3: Financial Asset Index

Parameters	Obtained Score		
	After	Before	Difference
Sources of income	208	193	15
kind of savings	195	160	35
kind of investment	222	141	81
Borrowing	253	194	59
Total Score	**878**	**688**	**190**
Maximum Possible Score	1740	1740	1740
F i	**0.50**	**0.40**	**0.10**

Among the financial parameters investment marked significant increase. During the same period borrowing too has increased. This is probably as a consequence of additional resources required by the farmers for practicing advanced agricultural technologies and also for diversification of their enterprises.

Table 4: Human Asset index

Parameters	Obtained Score		
	After	Before	Difference
Communication ability	243	211	32
Education	321	305	16
Management skills	232	161	71
Travel	178	137	41
Total Score	**974**	**814**	**160**
Maximum Possible Score	1740	1740	1740
H i	**0.56**	**0.47**	**0.09**

Table 4 reveals that managerial skills, communication and engagement with multiple stakeholders for the purpose of buying input, selling produce and other production related functions have increased. Mobility and travel too increased which is indicative of rising socio-economic status. Khondker Murshed-E-Jahan et.al,(2011) emphasized on farmers' understanding of the farm as a system of interconnected enterprises and their decision-making capacity.

Table 5: Natural Asset index

Parameters	Obtained Score		
	After	Before	Difference
Land	126	118	8
Irrigated land	166	129	37
Livestock	184	150	34
Poultry	173	129	44
Fish pond	106	97	9
Total Score	**755**	**623**	**132**
Maximum Possible Score	2175	2175	2175
N i	**0.35**	**0.29**	**0.06**

Backyard poultry as an income generating enterprise was introduced among small farmers including women. Possession of adult birds (egg layers and broilers) and small ruminants (goat, sheep etc.) has also increased. Fish pond did not witness much increase as it requires high investment in excavating ponds. Land under assured irrigation too has increased due to other schemes implemented by state Government. Steps to promote the mainstreaming of adaptation into livelihood improvement may potentially deliver better results when combined with adaptive management of natural resources and agro ecosystems.(AFD, ADB, DFID et al., 2003)

Table 6: Livelihood index (including physical, social, financial, human and natural) of the farmers before and after of the intervention of the project

Indices of Assets	After	Before	Difference	% Gain
Physical (Pi)	0.71	0.62	0.09	15
Social (Si)	0.72	0.63	0.09	14
Financial (Fi)	0.50	0.40	0.10	25
Human (Hi)	0.56	0.47	0.09	19
Natural (Ni)	0.35	0.29	0.06	21
Livelihood index	**2.84**	**2.41**	**0.43**	**18**

It is evident from the Table 6 that there was improvement in all the five types of assets measuring the changes in the livelihood of farm families during post-adoption period. The gain was found maximum in the financial assets (25%), followed by natural assets (21%), human assets (19%), physical assets (15%) and social asset (14%). All assets of farm families increased considerably. The high improvements in financial and natural assets indicate the betterment of living as well as economic conditions. Overall gain in livelihood is worked out to be 18 %.Livelihood improvement is not just about the positive change towards better quality of life and human wellbeing, but it takes into account the local and global change which determines the livelihood (Pandey, 1996).

The mean value of overall standard of living of the respondents derived through addition of the index values of five assets indicated it to be 2.41 during pre-adoption and it increased to 2.84 during post-adoption period. Being a dynamic process, the livelihood diversification depends on many factors having spatial and temporal variations. This process of change varies from farmer to farmer and over the space and time (Ghosh et al., 2011). Therefore, integration of improved technology through Farmer FIRST project is not exclusive, but one of the factors influencing the changes in livelihood of farmers. (Mehta, 2009) too emphasised that adoption of appropriate agricultural technology holds the key for development of rural economy.

Table 7: Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	99% Confidence Interval of the Difference				
				Lower	Upper			
AFTER_PA- BEFORE_PA	3.023	3.389	.363	2.066	3.980	8.319	86	.000
AFTER_SA- BEFORE_SA	1.851	2.385	.256	1.177	2.524	7.238	86	.000
AFTER_FA- BEFORE_FA	2.184	2.683	.288	1.426	2.942	7.592	86	.000
AFTER_HA- BEFORE_HA	1.839	2.658	.285	1.088	2.590	6.453	86	.000
AFTER_NA- BEFORE_NA	1.517	2.057	.220	.936	2.098	6.881	86	.000

After implementation of the project i.e. after providing critical inputs, interface with scientists along with technical back up of advanced technologies, the livelihood of the beneficiary farmers has improved leading to enhancement of standard of living of the farmers.It is evident from Table no. 7 that all the five indices of livelihood namely physical asset (Pi), social asset (Si), financial asset (Fi), human asset (Hi) and natural asset (Ni) have increased significantly ($p<0.01$). Thus the project indicates a positive and highly significant impact on the livelihood of the beneficiaries. Dey et al. (2010) found that adoption of integrated agriculture aquaculture resulted in increased diversification and higher cropping intensity. Wang (2018) also suggested that increased household livelihoods play an important role in improving land space utilization efficiency, resource conservation and use, and the ecological environment.

Conclusion

The Farmer FIRST project implemented by ICAR-Central Institute of Freshwater Aquaculture has brought in significant improvement in livelihood of the beneficiary farmers. Access to improved agriculture and allied sector technologies coupled with technical backup and institutional innovations have contributed towards this. As per the premise the Farmer FIRST project is to be institutionalized. This suggests that this approach of direct interface with farmers for developing and applying appropriate technology modules for different agro-ecosystem must receive due attention.

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A Hawk Eyed View on Socio-economic Status of Beneficiaries and Concurrent Evaluation of Technological Modules under Farmer FIRST Project

Lipi Das, S.K. Mishra and R. K. Behera[3]
(email: lipi.icar@gmail.com)

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Introduction

The Farmer FIRST Programme (FFP) is an ICAR initiative to move beyond the production and productivity, to privilege the smallholder agriculture and complex, diverse and risk prone (CDR) realities of majority of the farmers through enhancing farmers-scientists interface. The focus is on farmer's Farm, Innovations, Resources, Science and Technology (FIRST). The ICAR-NRRI, Cuttack has been implementing this FFP project in four selected village cluster since last two years. The objectives of the present evaluative study were to know the socio-economic status of beneficiary farmers, and to assess the effects of module-wise technological interventions against proposed action, in order to implement future interventions in right direction to maximize their effects. The socio-economic variables *viz*., age, education, family type, family size, occupation, farming experience, land-holding, source of irrigation and social participation etc. were taken into consideration. The different technological modules included (i) *crop-based module* (rice, pulse); (ii) *horticulture-based module* (vegetables) and (iii) *animal husbandry-based module* (poultry).

Keywords: *Socio-economic; rice; Impact, FFP, Odisha*

Materials & Methods

The study was conducted in the NRRI Farmer FIRST project cluster comprising of four adopted villages of Cuttack district of Odisha, *viz*., Satyabhamapur, Biswanathpur, Ganeswarpur and Laxminarayanpur of Salipur block of Cuttack district during the agricultural year 2016-17. Stratified random sampling technique was adopted for the study of socio-economic status and purposive sampling for evaluation of module wise proposed action plan. For socio-economic study 200 rice farmers (60 nos. each from two larger villages namely, Satyabhamapur & Biswanathpur and 40 nos. each from two smaller villages namely, Ganeswarpur & Laxminarayanpur) were taken up. For evaluation of (a) *Crop-based module*, data were collected from the beneficiaries of respective crops *viz*., 200 nos. for rice, 16 for black gram, 34 for green gram; (b) for *Horticulture-based module*: 37 nos. for okra, 15 for brinjal, 26 for bitter gourd, 31 for tomato, 23 for ridge gourd, & 110 for pumpkin; and (c) for evaluation of *Animal husbandry module*, data were collected from 30 poultry women beneficiaries.

Results & Discussion

Socio-economic Characteristics

The findings of the study (Table-1) showed that majority of the farmers were middle aged (42.00%); had upto high school level of education (24.00%) and lived in joint families (62.00%). The respondents were mostly involved in agriculture as their primary occupation (98.50%) with majority having about 11-20 years of farming experience (40.00%). Majority of the respondents had marginal land holding of upto 1 ha (68.00%) with canal as the major source of irrigation (56.00%). Most of the respondents had social participation as member/office bearer of only one organization (53.00%). Extension tools, demonstration on specific farming technologies, electronic media, mobiles and e-resources can be used to improve knowledge of farmers so that they can participate in more farmers' organization and ultimately improve in socio-economic status will be possible. Agri-entreprenureship can be developed by giving

economically viable technologies on farming on improved technologies, so that diversification in occupation within the farm families will be encouraged. It is also essential to create awareness about the new schemes and their benefits provided under government.

Table- 1: Socio-economic characteristics of Farmer FIRST beneficiaries (n=200)

Sl. No.	Variable	Category	Frequency	Percentage
1	Age	Young (<30)	70	35.00
		Middle (30 -50)	84	42.00
		Old (>50)	46	23.00
2	Education	Illiterate	14	7.00
		Functional literate	26	13.00
		Upto primary school	35	17.50
		Upto middle school	35	17.50
		Upto high school	48	24.00
		Above high school	42	21.00
3	Family Type	Nuclear	76	38.00
		Joint	124	62.00
4	Family Size	Small (up to 4 members)	65	32.50
		Medium (5 -8 members)	105	52.50
		Large (Above 8 members)	30	15.00
5	Primary Occupation	Agriculture	197	98.50
		Others	3	1.50
6	Secondary Occupation	Yes	18	9.00
		No	182	91.00
7	Farming Experience	Up to 10 years	28	14.00
		11 -20 years	80	40.00
		21 -30 years	50	25.00
		>30 years	42	21.00
8	Land Holding	Marginal (up to 1 ha)	136	68.00
		Small (1 to 2 ha)	45	22.50
		Medium (2 to 4 ha)	12	6.00
		Large (above 4 ha)	7	3.50
9	Source of Irrigation	Shallow tube well	4	2.00
		Bore well	81	40.50
		Canal	112	56.00
		Pond	3	1.50
10	Social Participation	Not a member of any organization	89	44.50
		Member of one organization	106	53.00
		Member of More than one Organization	3	1.50
		Office bearer	2	1.00

In *crop-based module*, paddy seeds of 21 newly released varieties *viz*., CR-Dhan 307 (Maudamani), CR-Dhan 200, CR Dhan-304, Sumit, CR-Dhan 409 (Pradhan Dhan), Reeta, Pooja etc. were demonstrated with proper technical guidance at right time by scientists of NRRI, Cuttack in the farmers' fields. By adopting these varieties the farmers found (Table-2) an increase of 18.4 t/ha (48.26%) i.e., 3.81 t/ha to 5.64 t/ha in average productivity of rice as compared to their local or previously grown varieties like Pradhan (local variety), Pooja, CR-1018, Swarna. Among all these varieties, the rice variety CR-Dhan 307 (Maudamani) performed best with average productivity of 6.02 t/ha, an advantage of 2.5 t/ha (58.01%) over local popular varieties.

Table- 2: Impact of Farmer FIRST Project on crop-based module (Paddy)

Variety	Rice Yield (in t/ha) before implementation of Farmer FIRST project	Variety	Rice Yield (in t/ha) after implementation of Farmer FIRST project
Pradhan (local variety)	3.62	Maudamani	6.02
Pooja	3.74	CR-Dhan 200	5.96
CR-1018	4.23	CR-Dhan-304	4.88
Swarna	3.62	Summit	5.71
Average Yield	3.81		5.64
Avarage Increase in Yield	1.84		
Average % Increase In Yield	48.26		
% Increase in Maudamani from Average Yield	58.01		

In case of pulses, the cumulative average yield of green gram (Var. IPM-2-3) in all four adopted villages was 2.99 q/ha and it performed best in Satyabhamapur with an average yield of 4.56 q/ha. Similarly in case of black gram (Var. PU-31), cumulative average yield in the villages was 4.57 q/ha and it performed best in Ganeswarpur with an average yield of 8.04 q/ha followed by Satyabhamapur (6.44 q/ha).

Table 3: Impact of Farmer FIRST Project on crop-based module (Pulses)

Sl. No.	Crop	Yield (q/ha)	Remarks
1	Black gram (Var. PU-31)	4.57	Ganeswarpur performed best with an average yield of 8.04 q/ha followed by Satyabhamapur (6.44 q/ha).
2	Green gram (Var. IPM-2-3)	2.99	Satyabhamapur performed best with an average yield of 4.56 q/ha.

The percentage increase in yield in case of vegetables were 24.26 per cent in Okra (Var. Arka anamika), 187.80 per cent in Brinjal (Var. VNR-B-5), 204.16 per cent in Tomato (Var. BSS-1004), 120.40 per cent in Ridge gourd (Var. Rama), 44.33 per cent in Bitter gourd (Var. Nakhara), 178.76 per cent in Pumpkin (Var. VNR-14/BSS-750), respectively as evident from the Table-3.

Table-3 : Yield advantage (% increase) of vegetables as influenced by adoption of technology

Sl. No.	Crop	Avg. yield (t/ha) (farmers practice)	Avg. yield (t/ha) (after adoption of technology)	Yield advantage (%↑) after technological intervention
1.	Okra	7.46	9.27	24.26
2.	Brinjal	18	51.8	187.80**
3.	Tomato	18.5	56.27	204.16*
4.	Ridge Gourd	5.93	13.07	120.4
5.	Bitter Gourd	5.91	8.53	44.33
6.	Pumpkin	14.5	40.42	178.76**

In case of Animal husbandry module, by rearing of 20 chicks, each woman farmer earned additional family income of over Rs. 3000 by selling meat of male birds (about 32 kg meat @ Rs. 100/kg) (*Vanaraja* breed) and about Rs. 1000 by selling eggs (125 nos. @ Rs.8/egg) in less than six months with a maximum investment of about Rs. 600.

Conclusion

After study and analysis it may be concluded that Farmers FIRST project is very much helpful for farm families for improvement of their socio-economic status and it should be continued simultaneously with taking constraints and suggestions regarding project implementation from farmers. The extension tools, demonstration on specific farming technologies, electronic media, mobiles and e-resources can be used to improve knowledge of farmers, so that farmers can participate in more numbers of farmers' organizations and ultimately there will be possible of an improvement in socio-economic status at grass root level. Agri-entrepreneurship can be developed by giving economically viable improved technologies on farming so that diversification in occupation within the farm families will be encouraged. It is also essential to create awareness about the new schemes and their benefits provided under government among farmers which will be helpful in their

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Linking Small Holder Farmer to Market- *Inclusive value chain Case Study*

Dr B. Satpathy, Senior Scientist & Head, KVK, Angul (OUAT)

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ABSTRACT

The concept of value chain is constantly changing and more particularly in food sector. Krishi Vigyan Kendra provides technical support in form of technology assessment, demonstration and capacity building programme.KVK directly supports small producers in rural small-scale value chains, mainly through Self Help Groups, multipurpose cooperatives and farmer producer groups. Strengthening the capacities and skills of such groups in selected food value chains, and support aimed at improving market-oriented production and processing and farmer friendly enterprise development, business-to-business linkages and access to microfinance or credit linkage. According to 18th livestock census, 2007, it is revealed that 123.09 lakh of cattle resource out of 230.57 livestock population is in Odisha. The cattle population is 60 percent of total livestock in Odisha. Milk is a perishable item, so it has to be made readily available to the customer at the right time. Incidentally though there is a large concentration of milch cattle such as cows and buffaloes in rural areas of Odisha, but the per capita ownership of cattle isn't large enough to justify organized milk generation and selling.

***Key words**: Value-chain, producer, value added products, producer-consumer, market linkage*

Introduction

Dairy sector occupies a vital position in the country's economy. It provides quality milk and milk products to people in both urban and rural areas. The industry is extended from the milk producers in the rural areas to the consumers in the urban areas all the way through performing various activities collectively called value chain.

Angul district covers a geographical area of 6232 square kilometers and stands as 11th largest district among 30 districts in the State. The ARD sector in the district plays a vital role for socioeconomic upliftment of rural poor's next to Agriculture. It not only helps the farmers for their income generation & self employment but also alleviate malnutrition through animal protein supplementation. The farmers are being benefited through different activities of the department such as Vaccination, Treatment, Artificial Insemination, Health camps, Deworming camps, Awareness camps, Fodder Cultivation, Training & Demonstration & supply of Banaraja chicks etc. Now through commercial livestock poultry farming like Dairy farming, Broiler farming, Layer Farming & Goatery farming a good no of entrepreneurs are engaged which in term providing employment to a good no of people. Due to population rise and industrialization the land use per head is gradually decreasing. So ARD sector if the only alternative source for income of the farmers.

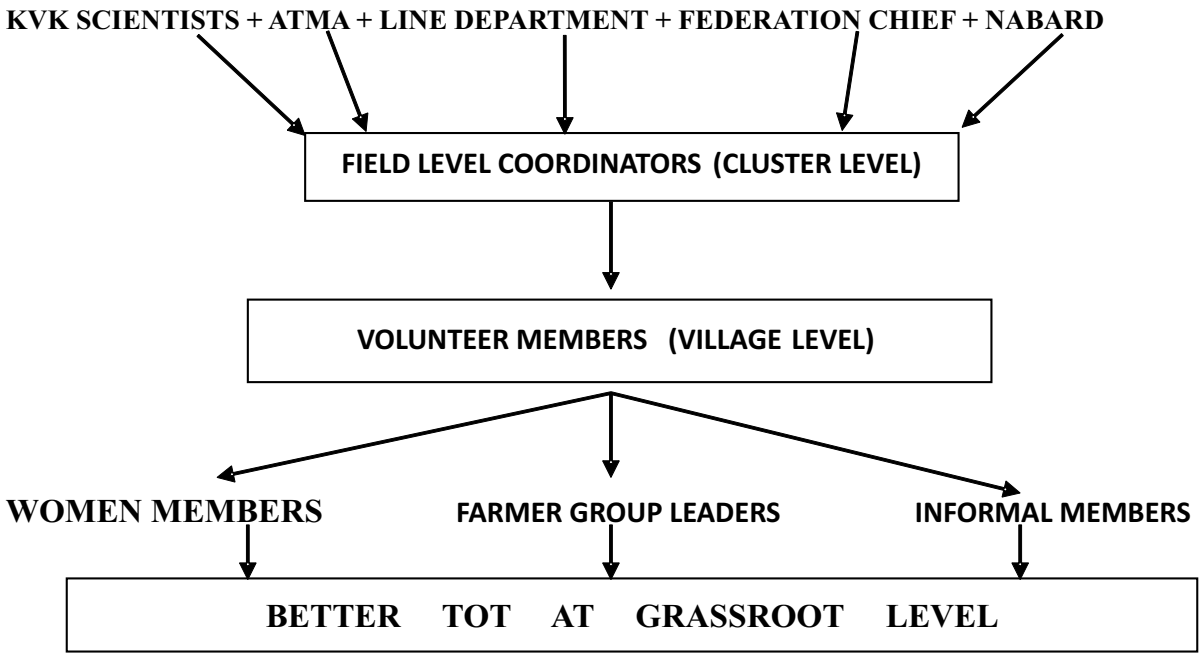
According to 2009-10 information, Odisha contributes to 2 to 3 percent of total milk production in India. In dairy farming, major marketable item is milk. India places itself as a global leader in relation to the milk producing nations, attaining a yearly output of 137.68 million tonnes of milk throughout the year 2013-14 in comparison to the 132.43 million tonnes in 2012-13 observing a expansion of 3.96 percent. It represents a relentless development in the accessibility of milk and milk products proposed for the rising population.

Objectives of the Study:

This particular study focuses on dissemination of technology to a small farmer group of 15 members organized in milk marketing in Banarpal block of Angul district through various stakeholders which will definitely improve the linkage of small farms to market with more profit.

Technology description/characteristics

Flow chart depicting involvement of all stakeholders in promotion



Activities Done By The Primary Producer

1.Procurement of milk 2. Adopting technical expertise 3. Acquiring training in new and scientific methods to increase productivity of milk in the state. 4. Proper storing/chilling of milk 5. Processing and marketing of milk 6.Value addition of surplus

Methodology for technology dissemination/ spread

- Prioritised area identified to address milk marketing issues (surveyed 12 such circles)
- Groups organised for Intervention at production points(2 commodity groups)
- Interventions to reduce cost of production
- Capacity building programmes
- Information symmetry between producer and consumers

Field performance (Results)

Before (Individual approach)	**After (Group Approach) Ist yr**	**After (Group Approach) 2nd yr**
15 members (avg. 31 ltrs./day/member	15 members (avg. 40 ltrs./day/member)	15 members (avg. 40 ltrs./day/member)
Total milk – 465 ltrs.@ Rs. 30/- =Rs.13.950	Total milk – 600 ltrs.@ Rs. 30/- =Rs.18,000/-	Total milk – 600 ltrs.@ Rs. 30/- =Rs.18,000/-
	100 ltrs. Sold @ 30/ltr.=Rs 3000/-	100 ltrs.— 8kg ghee@800=Rs.6400
	400 ltrs.- 80 kg cheese@260=Rs.20,800	300 ltrs.– 60 kg cheese@260=Rs 15600
	100 ltrs.— 8kg ghee@800=Rs.6400	200 ltrs – 1600 nos. sweets @10=Rs 16,000
Total= Rs.13.950	**Total= Total=** Rs. 30,200/-	**Total=** Rs. 38000/-

Outcome

In (2014)	In (2018)
Started as 08 member group	Reached to 15 members and formation of 4 such informal groups
Price realized per farmer was Rs 26/litre of milk	Price realized is Rs 30/ltr of milk and VAP(Rs 57/ltr.)
Very conventional	Scientific fodder with fodder, use of chaff cutter, Regular vaccination and other aspects

Impact: Progressive dairy farmers are motivated and coming forward for learning value addition technology, milk procurement centres are gradually increasing, saving of minimum 1 wage per day and So far 105 dairy farmers have registered under dairy advisory services.

The best part small and marginal farmers are getting fair price.

Future prospects/ Area of up-scaling

Farrmers Producers Organizations (FPOs) are a legalized form of farmer-owned institutions, which consists of farmer members with common interests and concerns. FPOs were evolved as new generation producer-led organization, to help them receive benefits of aggregation and economies of scale.

The main objective is to ensure better income for the producers through an organized system of their own. Small producers do not have the large marketable surplus individually (both inputs and produce) to get the benefit of economies of scale. These farmer members can be motivated and strengthened to be a part of this sector to realize their potential.

Our future action-

- Linking all the small farmers to structured and unstructured markets
- Group members connected to many parallel processors

More scope for value addition, linkage and growth of other ancillary things.

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Impact of Frontline Demonstrations as an effective tool for enhancing oilseed and pulse productivity in plateau ecosystems of Odisha

C Mishra, L Soren, S K Nath
Krishi Vigyan Kendra (OUAT), Deogarh, Odisha
e-mail:kvkdeogarh.ouat@gmail.com

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ABSTRACT

Pulses and oilseeds are the major crops after cereals in plateau areas of Odisha. Deogarh district coming under North western plateau agro climatic zone was purposively selected for the study as 52% of its total cultivated area is upland and is suitable for cultivation of pulses and oilseeds. New technologies on oilseeds and pulses cultivation are transferred to farmers through front line demonstrations (FLDs). Krishi Vigyan Kendra, Deogarh through its FLD programmes has introduced a number of new technologies in these crops which has increased its productivity substantially. The average yield of pigeonpea, greengram, sesamum, groundnut, sunflower FLD plots during the last five years was increased 69.4%, 39.34%, 47.36%, 44.2%, 41.33% respectively than the farmers practice. The net income and BC ratio was increased in similar manner. Farmers perceived seed treatment was least responsible for poor productivity of these crops than the selected ten other factors. Most of the socio-economic parameters found no significant relationship with the adoption of scientific technologies in oilseeds and pulses.

Key words: *FLD, Pulses, oilseeds, net return, productivity*

Introduction

Frontline demonstration (FLD) is one of the key extension tool for transfer of technologies for enhancement of productivity of crops (Samui et al,2000).They are the programmes undertaken by the development agencies or departments to popularize a tested frontier technology among the farmers for increasing the productivity keeping an eye to the net return available to farmer. After cereals, pulses and oilseeds are major crops of the nation in relation to the cultivated area as well as their role to stabilize food security. They are the indispensible components of a common Indian balanced human diet. Pulses are the main contributors of plant protein and oilseeds are regarded as the energy crops. The production and productivity of both pulses and oilseeds are far below satisfaction in the national scenario. Accoring to the Odisha economic survey (2018) the productivity of pulses in our state is only 5.26 q/ha and they are cultivated in 20.47 lakh ha. To provide 50 gm of pulse for every citizen per day our state requires 72 thousand tons of more production. The status of oilseeds is no better though launching of Technological Mission of Oilseeds (TMO) during 1986 has been able to increase the production of oilseeds to some extent (Nath *et al.* 2013). Still our state is facing an annual deficit of about 14.63 lakh tons of oilseeds against the requirement 21.62 lakh ton (Anonymous, 2013-14). Groundnut, mustard, sesamum, niger, sunflower, safflower, linseed are the major oilseed crops cultivated in Odisha. Groundnut, as the principal oilseed crop, contributes 3.92% of net cultivated area of the state, i.e. 2.68 lakh ha with an average yield of 15.3 q ha^{-1} (Anonymous, 2013-14). Among the pulses, pigeonpea, green gram, blackgram are the major pulses. A number of technological, agro-biological and economic constraints are responsible for poor performance of all the pulses in general and pigeon pea in particular even after the introduction of modern varieties coupled with improved crop production techniques and launching of several development programmes for pulses in India (Siddayya and Singh, 2005). The undulated upland and suitable ecosystems are the causes behind cultivation of oilseeds and pulses in plateau areas of Odisha. However the productivity is found at a usual state. FLDs are undertaken repeatedly in these crops in subsequent years to increase productivity through introduction of new technologies. Krishi Vigyan Kendras also use FLD as a mechanism to transfer scientific production technologies to farmers. Keeping in view, this study was undertaken with an objective to find out impact of FLDs in increasing productivity of oilseeds and pulses in plateau areas of odisha.

Materials & Methods

Plateau eco-systems in Odisha are generally endowed with uplands and an average annual rainfall of more than 1500 mm. Deogarh district coming under North-Western plateau agro-climatic zone has 53% of total geographical area covered by mountains, forest and hill tracts. 68% of the total cultivated area is rain-fed and

always susceptible to droughts and insecure crop production. From the total cultivated area of 66,950 ha, 35,506 ha (53%) is upland and 19,949 ha (30%) is medium land which has a larger scope of cultivation of oilseed and pulse crops. In this study, the productivity of the oilseed and pulse crops of Deogarh district was compared with the state of Odisha and the national average. Further, the factors of the poor productivity as perceived by the farmers were collected and ranked. For this purpose 60 oilseed and 60 pulse farmers were taken for the study who were the beneficiaries of the front line demonstrations of various oilseed and pulse crops of Krishi Vigyan Kendra, Deogarh. The yield gap of the farmers practice and demonstration plots was calculated. The economics of the demonstrated oilseed and pulse crops was also calculated from the cost of cultivation and the gross return. The cost benefit ratio of each crop was computed accordingly. The factors of poor productivity, as perceived by the sampled farmers were measured using Likert's five point scale. Completely disagree, partially disagree, completely agree, partially agree were allotted scores of 1, 2, 3, 4, 5 respectively. Rank analysis was done according to net scores obtained by each factor. The relationship between independent socio-personal variables of the respondents and adoption of new technologies was also studied using appropriate statistical tools.

Results and Discussion

Pulse cultivation scenario of the district

Green gram, black gram and pigeon pea are the major pulse crops cultivated in Deogarh district. The leading pulse crop, green gram is cultivated in all the major three seasons in 10,430 ha. The black gram is cultivated in 7990 ha and pigeon pea in 1280 ha. There is a bright scope of increasing the cultivated area of pigeon pea in the district owing to presence of large amount of uplands in barren during kharif season. The productivity of these three major pulse crops green gram, black gram and pigeon pea is 3.48, 3.75, 8.97q/ ha respectively (2013-14). The poor productivity of pulse crops is due to the very low seed replacement ratio (SRR) and non-adoption of scientific know-hows.

Oilseeds crops in the district

Sesamum, groundnut, mustard and sunflower are the major oilseed crops of Deogarh district. Sesamum, the leading oilseeds crop is cultivated in more than 7,740 ha of land throughout the year. Groundnut is mainly cultivated in kharif season; only a small area in Gohira catchment region and Brahmani river bank is used for late rabi (summer) groundnut cultivation. Sunflower is cultivated in about 400 ha in late rabi season. The performance of sesamum and groundnut in the scale of productivity is very poor. Using of degraded land and non-adoption scientific production procedures are the major factors of low productivity.

A comparison of productivity of oilseeds and pulses of the state and nation in comparison to the district (2013-14) is

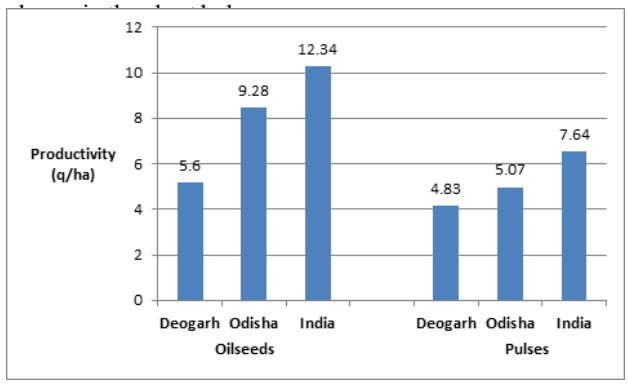

Fig. 1 : Comparative view of productivity of oilseeds and pulses

Krishi Vigyan Kendra (KVK) is a premier ICAR sponsored institution for transfer of agro-based technologies to farmers, farm women and rural youths to increase production, productivity and promote self-employment through upgradation of existing knowledge and skill. ICAR has developed a network of about 714 numbers of KVKs in most of the districts of rural India. KVK has the objectives to carry out on-farm research trials (OFT) to verify, test, validate and refine location specific technologies developed by National Agricultural Research System (NARS), popularise them which are economically profitable, ecologically sustainable, technically feasible and culturally compatible through frontline demonstrations (FLD), trainings to farmers, farm women and rural youths for self-employment and increase in productivity, aware and update the grass-root level extension agencies on the latest technologies and moreover act as a knowledge resource centre in the latest technologies of agriculture and allied sectors in the district (Patil and Kokate 2011). KVK, Deogarh since its inception, i.e. 2006-07 has been trying to increase productivity of oilseeds and pulses through its FLD programmes on oilseeds and pulses. In these programmes, all the scientific management practices, i.e. introduction of improved varieties, seed treatment, maintaining plant population, line sowing, INM modules, viz. application of PMS@5q/ha, gypsum 2.5 q/ha, soil test based fertilizer application and IPDM modules were generally implemented.Table1 indicates the yield performance of various crops undertaken in FLD programme by

Table 1: Impact of FLDs on FLD, oilseeds and pulses (Average of last five years)

Recommended Practice	Productivity		Profitability	
	Inc. in Yield (%) over FP	Yield gap (q/ha)	Net return (Rs/ha)	B C ratio
Pigeonpea (Varietal replacement, seed treatment, PMS, RDF & IPM practices)	69.4	5.0	48,200	2. 93
Green gram (Varietal replacement, *Rhizobium* inoculation, PMS, RDF and IPM schedule)	39.34	2.6	24,675	2. 45
Groundnut (Varietal replacement, *Rhizobium* inoculation, PMS, Gypsum, RDF)	37 .9	5.85	29,375	1. 65
Sesamum (Varietal replacement, seed treatment, PMS, & RDF)	47.36	1.8	36,500	2. 60
Sunflower (Varietal replacement, seed treatment, PMS, Gypsum, Boron & RDF)	41.33	3.1	29,765	2.45

The above table reflects on the effect of technological interventions in FLD programmes over the yield of farmer's practice during the last five years. It shows introduction of new improved varieties, soil reclamation methods and soil test based fertiliser application along with integrated pest management modules could increase the yield of oilseeds and pulse crops.

The poor productivity of oilseeds and pulses in the district are due to a number of factors. During the study, the respondents were asked to indicate their views on it, which were quantified and mentioned below in the table-2.

Table 2. Factors of poor productivity of oilseed & pulse crops in the district, as perceived by farmers (n=120)

Sl. No.	Factors as perceived	Net Score	Rank
1	Pulse & oilseeds are not regarded as the principal crop of the farmers	**3.84**	**I**
2	Seed replacement ratio is very poor	**2.75**	**V**
3	Unfertile lands are used for pulse and oilseed cultivation.	**2.90**	**IV**
4	Lack of awareness on seed treatment.	**1.46**	**XI**
5	No reclamation of the majority acidic soil	**2.12**	**VIII**
6	Severe crop–weed competition.	**3.24**	**III**
7	Non- application of PMS and gypsum in cultivation.	**1.5**	**X**
8	Integrated nutrient management practices are not followed.	**2.36**	**VII**
9	No proper strategy to control insect pests and diseases .	**2.70**	**VI**
10	Dry spell and non- availability of soil moisture in critical stages of crop	**3.68**	**II**
11	Most of oilseed and pulse crops are susceptible to abrupt climatic change factor.	**1.88**	**IX**

From the study it was found that pulse and oilseeds are not regarded as the principal crop of the farmers rather they are given secondary status to rice by the farming community of the district. Farmers perceived this as the major factor for poor productivity in these crops. The seed replacement ratio is very poor except the sunflower. In the district insesamum and pulses it is below 2%. Farmers were found using mostly the degenerated traditional varieties. The eroded, degraded and unfertile lands were found mostly used for pulse and oilseed cultivation. In kharif crops, severe crop–weed competition results in poor yield. Integrated nutrient management practices were not found followed by the farmers. Seed treatment breaks seed dormancy, enhances germination, improves vigour and seedling establishment, increases drought tolerance and enhances seed yield of crop under limited soil moisture (Singh 2000). Significant improvement in yield attributes like diameter of capitulum, number of filled seeds/capitilum and 1000-seed weight of the crop raised from treated seeds with chemicals over dry seeds (Sarkar and Pyra). Lack of awareness among the farmers on seed treatment and their benefits resulted in diseases in later stages of crop growth. This factor did not perceive as a major one by the farmers. 58% of the soil of the district was acidic. No reclamation of the majority acidic soil resulted in poor yield of crops. Paper meal sludge (PMS)and gypsum are the two cost effective ingredients for oilseed and pulse crops of the district for higher yield. During survey it was found that farmers were not aware about their merits. During the survey it was observed proper strategy was taken to control insect pests and diseases as most of the crops were given secondary status. Dry spell and non-availability of soil moisture in critical stages of crop production reduces productivity. In oilseed crops like sunflower, mustard they have proved detrimental to the crop. Most of oilseed and pulse crops are very susceptible to abrupt climatic change factors. The resource poor farmers were not convinced well about these factors which secured ninth rank in the factor analysis.

The socio-economic characterstics of the responding farmers were correlated with the adoption behaviour of technologies in oilseeds and pulse cultivation (Table 3)

Table 3. Correlation between the socio-personal factors and technological adoption in oilseeds and pulses cultivation of the respondents.

Sl. No.	Variables	Correlation Coefficient(r)
1	Age	**0.062**
2	Education	**0.2566***
3	Caste	**0.1128**
4	Ownership of land	**0.0427**
5	Farming experience	**0.1282**
6	Cosmopoliteness	**0.086**

***Significant at 5% level of probability**

Some socio-personal factors like age, education, caste, land holdings, farming experience and cosmopolite behaviour were compared with the adoption behaviour of different technologies in oilseeds and pulses cultivation. It was observed that most of these factors have non-significant association with adoption of new technologies in oilseeds and pulses cultivation. Even the land holding size has no significant relationship with the adoption of new technologies which corroborates the findings of Dash et.al., (2016).

Conclusion

Pulses and oilseed crops are integral part of Indian farming. They not only play a major role in securing food security but also provide employment and livelihood to many farm families living in underdeveloped areas of the nation, particularly in the plateau ecosystems. The lower productivity of these crops is mainly due to lack of availability of inputs, knowledge at their door step. They are the crops which can tolerate to climatic aberrations better than the major cereal crops. Government needs to take proactive steps to bridge the gaps between the farmers yield and the potential yield.

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Challenges And Opportunities Of Government Schemes For Farm Women

*Sabita Mishra, **Pujyasmita Nayak, ***Priyanka Mahankudo,
****C. Jeeva and *****A. Sarkar

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Introduction:

The farm women play triple roles like productive, reproductive & community. While performing roles, they face gender issues in social, political, economic and legal sectors. At the same time, without realizing their contribution, the planners and policy makers always bypass and ignore the women while formulating schemes and policies. As a result most of the schemes are not gender centric and not with women perspective. But, although late, now the policy makers and planners are gender sensitive and with their efforts, various women welfare schemes / programmes are being developed and implemented. But, a question arises that to what extent the women in rural India are aware of schemes and availed benefits out of these. Keeping this in view, an attempt was made to know the perception and access of farm women to various Government schemes with the following objectives.

Objectives of the study:

- To assess the knowledge of the farm women towards Government schemes/programmes
- To know the perceived constraints of farm women in availing benefits of schemes/programmes.
- To provide suggestions for successful implementation of these schemes/ programmes.

Review of Literature:

1. Chinna Ashappa and Hanamanthappa P. Sedamkar (2011) highlighted in their study that rural women entrepreneurs were unaware about policies and programmes of the Central and State Governments and also suggested to create awareness towards the programmes.
2. Faraha Nawaz (2012) observed lack of awareness among women is a major obstacle for development of rural women entrepreneurship in Bangladesh.
3. Harinarayana Rao (1991) has revealed rural women were not aware of the programmes such as DWACRA, IRDP, TRYSEM, etc.
4. Nayan and Borkakoty (2000) in a study conducted among the women entrepreneurs in Assam to find out the impact of EDP strongly argue that women can be the vital agents of change. Trained women can able to manage and reap the benefits of different schemes.
5. Sahu and Tripathy (2005) The rural women are the marginalized groups in the society because of socio-economic constraints and so they remain backward always. Through microfinance and formation of self-help groups, they were emerged as empowered group by lifting themselves from the morass of poverty and stagnation.
6. Sangeeta Arora (2011) professes that many commercial banks are taking much interest in developing schemes exclusively for women. Various leading public and private sector banks have been providing finance under different schemes to women entrepreneurs with a relief in interest rate.
7. Sunil Deshapande and Sunita Sethi (2010) highlighted women participation in entrepreneurship is gradually increasing due to change in attitude, mindset of society from conservative to modern one, daring and risk-taking abilities of women, support and cooperation by society members, changes and relaxations in government policies, granting various up-liftment schemes to women entrepreneurs.

Materials & Methods

The study was conducted in four districts such as Cuttack, Khordha, Koraput and Bargarh of Odisha during September-October, 2017. Total seven blocks were selected namely Baranga, Bhubaneswar, Jeypore, Koraput, Similiguda, Bargarh and Ambabhona covering ten villages. A total of 200 farm women respondents were randomly selected @20 per village for data collection while 20 official respondents were identified in block level. Personal data collection was done with the help of a developed, pre-tested, semi-structured interview schedule. Then it was analyzed with simple statistical tools and techniques.

* *Principal Scientist (AE), **** Principal Scientist (AE) and ***** Senior Scientist (Agril. Stat.), ICAR-CIWA, Bhubaneswar, ** & *** B. Sc (Ag) Students, Centurion University, Odisha*

Results and Discussion:

Socio-economic Profile of the respondents: Some of the socio-economic profile of the respondents was collected during data collection. It was found that majority of the respondents were from the age group of 25-35 years (40.50%), being literate 27.00%, landless 38.50%, **labour work as family occupation 46.00%, monthly family income within Rs.10,000 (70.00%) and social membership in WSHG and Anganwadi Centres (32.00%).**

Awareness and benefits from Central Government schemes: In this study, ten women welfare schemes under Central Government were listed and during data collection the respondents were asked whether they are aware of these schemes and benefits availed out of it. Their responses are well indicated in the following table.

Table 1 Awareness and benefits from Central Government schemes:

Sl. No.	Name of the schemes	Aware				Availed Benefits			
		Yes		No		Yes		No	
		F	%	f	%	f	%	f	%
1.	PradhanMantri Surakshit Matriva Abhiyan	70	35.00	130	65.00	104	52.00	96	48.00
2.	Beti Bachao, Beti Padhao Yojana	72	36.00	128	64.00	44	22.00	156	78.00
3.	Pradhan Mantri Ujjwala Yojana	130	65.00	70	35.00	104	52.00	96	48.00
4.	RajivGandhi Scheme for Empowerment of Adolescent Girls	58	29.00	142	71.00	71	35.50	129	64.50
5.	Support to Trainingand Employment for Self & Wage Employment	50	25.00	150	75.00	16	8.00	184	92.00
6.	Rashtriya Mahila Kosh	51	25.50	149	74.50	14	7.00	186	93.00
7.	Priyadarsini	30	15.00	170	85.00	38	19.00	162	81.00
8.	Mission Indradhanush	104	52.00	96	48.00	165	82.50	35	17.50
9.	National Mission for Empowerment of Women	7	3.50	193	96.50	0	0	200	100.00
10.	Janani Suraksha Abhiyan	130	65.00	70	35.00	122	61.00	78	39.00

Ten women welfare schemes under central government were listed under study. Out of which 65.00% of respondents are aware about only two schemes like Pradhan Mantri Ujjwala Yojana and Janani Suraksha Abhiyan while Mission Indradhanush was known to 52.00%. On the other hand, very few percentage of women know the schemes such as National Mission for Empowerment of Women (3.50%) and Priyadarsini 15.00%. Again, some of the programmes like Beti Bachao Beti Padhao Yojana, Rashtriya Mahila Kosh, RajivGandhi Scheme for Empowerment of Adolescent Girls-SABLA, Support to Training and Employment for Self & Wage Employment, Pradhan Mantri Surakshit Matriva Abhiyan were known among 20-50% women. Here, most of the women respondents were not aware about the Central Government schemes meant for them.

Likewise, the question of availing benefits from the above mentioned schemes was asked. Based on their reply, maximum benefit was not availed by the respondents in the areas of Support to Training and Employment for Self & Wage Employment (92.00%) and Rashtriya Mahila Kosh (93.00%) although 50.00% of them were aware about it. At the same time more than 50% benefit was availed in case of Pradhan Mantri Surakshit Matriva Abhiyan (52.00%), Pradhan Mantri Ujjwala Yojana (52.00%), Janani Suraksha Abhiyan (61.00%) and Mission Indradhanush (82.50%). The most unknown and ineffective scheme was National Mission for Empowerment of Women.

Table 2 Benefits availed by women from Central Government schemes

Sl. No.	Name of the schemes	Areas of benefits availed
1.	PradhanMantri Surakshit Matriva Abhiyan	✓ Free medical treatment during pregnancy
2.	Beti Bachao, Beti Padhao Yojana	✓ Free education in govt. schools ✓ Awareness to prevent female infanticide
3.	Pradhan Mantri Ujjwala Yojana	✓ Received LPG gas with subsidy
4.	Rajiv Gandhi Scheme for Empowerment of Adolescent Girls-SABLA	✓ School quality foods, uniform and cycle
5.	Support to Training and Employment for Self & Wage Employment	✓ Mushroom cultivation training ✓ MGNREGA implementation ✓ Job card ✓ Skill training on surf, shampoo and phenyl making
6.	Rashtriya Mahila Kosh	✓ Loan ✓ Deposit facility for gold in banks through Swarna Mudrikaran Yojana
7.	Priyadarsini	✓ Indira Awas Yojana ✓ Mo Kudia Yojana
8.	Mission Indradhanush	✓ Immunization Vaccines for children
9.	National Mission for Empowerment of Women	✓ Attained meetings for economic & social development by KVKs
10.	Janani Suraksha Yoj ana	✓ Financial assistance for delivery and post-delivery care ✓ Nutritious chateau, egg, iron tablets, free health care, etc

Awareness and benefits from Odisha Government schemes: Seven women welfare schemes under Odisha Government were listed and the awareness of the respondents about these schemes and benefits availed from it was documented which has been explained as follows.

Table 3 Awareness and benefits from Odisha Government schemes:

Sl. No.	Name of the schemes	Aware				Availed Benefits			
		Yes		No		Yes		No	
		f	%	f	%	f	%	f	%
1.	Mission Shakti	57	28.50	143	71.50	48	24.00	152	76.00
2.	Swadhar	5	2.50	195	97.50	0	0	200	100.00
3.	Mamata Scheme for Pregnant & Lactatinng Women	122	61.00	78	39.00	102	51.00	98	49.00
4.	Odisha Govt. Biju Kanya Ratna Yojana	14	7.00	186	93.00	0	0	200	100.00

5.	Kishori Shakti Yojana	52	26.00	141	70.50	81	40.50	119	59.50
6.	Mukhya Mantri Mahila Sasaktikaran Yojana	19	9.50	181	90.50	0	0	200	100.00
7.	Swarna Jayanti Grama Swarojagar Yojana	16	8.00	184	92.00	7	3.50	193	96.50

Out of seven women welfare schemes under Odisha Government, up to 10.00% of the women respondents were aware of the schemes like Swadhar (2.50%), Odisha Government Biju Kanya Ratna Yojana (7.00%), Swarna Jayanti Grama Swarojagar Yojana (8.00%) and Mukhya Mantri Mahila Sasaktikaran Yojana (9.50%).The highest percentage (61.00%) of them knew Mamata Scheme for Pregnant & Lactating Women. In considering the benefits, Mamata Scheme for Pregnant & Lactating Women was availed by 51.00% followed by Kishori Shakti Yojana (40.50%) and Mission Shakti (24.00%). None of the women availed any benefits out of Swadhar, Odisha Government Biju Kanya Ratna Yojana and Mukhya Mantri Mahila Sasaktikaran Yojana.

Table 4 Benefits availed from Odisha Government schemes

Sl. No.	Name of the schemes	Areas of benefits availed
1.	Mission Shakti	✓ Loan ✓ Training for SHG group
2.	Mamata Scheme for Pregnant & Lactating Women	✓ Rs.1400 for nursing & lactating women before through IGMSY ✓ Now Rs.5000 through Mamata scheme in 4 installments
3.	Odisha Govt. Biju Kanya Ratna Yojana	✓ About 9% interest against minimum deposit of Rs.100 per month for girl child under Sukanya Yojana which will be withdrawn only by daughter for her education and marriage
4.	Kishori Shakti Yojana	✓ Chateau, egg and lunch for girls (11 to 18 years) in schools
5.	Swarna Jayanti Grama Swarojagar Yojana	✓ Credit of Rs.5000 to 35000 in two installments ✓ Approved passbook by DRDA

Central Government Agricultural Schemes: Eight agricultural schemes under Central Government were listed and asked about the awareness and benefits availed by farm women the responses of which are reflected in the following table.

Table 5 Central Government Agricultural Schemes

Sl. No.	Name of the schemes	Aware				Availed Benefits			
		Yes		No		Yes		No	
		F	%	f	%	f	%	f	%
1.	National Mission on Agriculture Extension and Technology (NMAET)	0	0	200	100.00	0	0%	200	100.00
2.	Agricultural Technology Management Agency (ATMA)	43	21.50	157	78.50	25	12.50	175	87.50
3.	National Food Security Mission	20	10.00	180	90.00	8	4.00	192	96.00

4.	Agrisnet	28	14.00	172	86.00	13	6.50	187	93.50
5.	Pradhan Mantri Fasala Bima Yojana	39	19.50	161	80.50	6	3.00	196	98.00
6.	Weather based Crop Insurance	22	11.00	152	76.50	15	7.50	185	92.50
7.	Pradhan Mantri Krishi Sinchai Yojana	18	9.00	182	91.00	0	0	200	100.00
8.	Gramin Vandarana Yojana	30	15.00	170	85.00	0	0	200	100.00

As indicated above, almost all the eight schemes were very negligibly known to women (9.00% to 21.50%). Even none of them was aware of the National Mission on Agriculture Extension and Technology (NMAET) scheme. Regarding benefits, it was 3.00% to 12.50% in case of Pradhan Mantri Fasala Bima Yojana, National Food Security Mission, Agrisnet, Weather based Crop Insurance and Agricultural Technology Management Agency (ATMA). Likewise, 100.00% respondents had got no benefit out of National Mission on Agriculture Extension and Technology (NMAET), Pradhan Mantri Krishi Sinchai Yojana and Gramin Vandarana Yojana.

Table 6 Benefits availed under Central Government agricultural schemes

Sl. No.	Name of the schemes	Areas of benefits availed
1.	Agricultural Technology Management Agency (ATMA)	✓ High yield varieties ✓ Information about seed production ✓ Training on agriculture ✓ Exposure visit ✓ Participation in Krushi Mela / Exhibition ✓ Women participation
2.	National Food Security Mission	✓ Got Rs.800 to Rs.1100 for line sowing ✓ Quality pulses seeds for mix cropping
3.	Agrisnet	✓ Internet services ✓ TV/Radio programmes by KVKs Projectors facilities in villages
4.	Pradhan Mantri Fasala Bima Yojana	✓ About 30-40% availed
5.	Pradhan Mantri Krishi Sinchai Yojana	✓ Access of water in the farm ✓ Expanding cultivable area ✓ Promotion of water harvesting & management

Odisha Government Agricultural Schemes: Like Central Government, four agriculture schemes under Odisha government are listed in the following table.

Table 7 Odisha Government Agricultural Schemes

Sl. No.	Name of the schemes	Aware				Availed Benefits			
		Yes		No		Yes		No	
		f	%	f	%	f	%	f	%
1.	Biju Krushak Kalyan Yojana	54	27.00	146	73.00	12	6.00	188	94.00
2.	Watershed Development Program	3	1.50	197	98.50	0	0	200	100.00

3.	Farm Mechanization Scheme	5	2.50	195	97.50	6	3	200	97.00
4.	Rastriya Krishi Vikash Yojana	0	0	200	100.00	0	0	200	100.00

But it is interesting that only 27.00% of respondents knew Biju Krushak Kalyan Yojana while Farm Mechanization Scheme by 2.50%, Watershed Development Program by 1.50% and Rastriya Krishi Vikash Yojana was known by none of them. When the knowledge regarding agriculture schemes was very poor, its benefits was nil in case of Watershed Development Program and Rastriya Krishi Vikash Yojana. Only benefit in case of Biju Krushak Kalyan Yojana and Farm Mechanization Scheme was availed by 6.00% and of the respondents respectively.

Therefore, government should take care for awareness creation among women, proper implementation, monitoring and evaluation of the developed welfare schemes for empowerment of rural women.

Table 8 Benefits availed under Odisha Government agricultural schemes:

Sl. No.	Name of the schemes	Areas of benefits availed
Biju Krushak Kalyan Yojana		✓ 44% farmers availed Yojana card but no facility in the accredited hospitals
Watershed Development Program		✓ Major, medium, minor traditional irrigation projects are working
Farm Mechanization Scheme		✓ Agricultural machinery like Tractor, M. B. Plough, Winnower, Power tiller, Pump set, Harvester etc. with subsidy of Rs. 1100-1200/.

Problems of Farm women: During survey, the farm women were asked about the problems they face to get benefits out of different government schemes. Their multi answers were recorded and analyzed through Rank Order Analysis Technique which is reflected in the table below.

Table 9 Perceived problems of farm women

Sl. No.	Problems	Score	Rank
1	Lack of Information	128	I
2	Lack of Training	105	II
3	Lack of Mobility	11	VI
4	Lack of Communication Skill	94	III
5	Work Load	94	III
6	Less Social Contact	85	IV
7	Social-Cultural Barrier	31	V

The above table indicates that lack of information was the most prevalent problem followed by lack of training, lack of communication skill, work load, less social contact, social-cultural barrier and lack of mobility which they have ranked I, II, III, III, IV, V and VI respectively.

Suggestions of farm women: For better implementation of the schemes, the suggestions were collected from the respondents. Their multi answers were recorded and analyzed through Rank Order Analysis Technique which is reflected in the table below.

Table 10 Suggestions by farm women

Sl. No.	Suggestions	Score	Rank
1	Use of Information & Communication Technology (ICT)	67	V
2	Gender Sensitization	59	VI
3	Awareness Creation	180	I
4	Capacity Building	71	IV
5	Sharing Gender Roles	45	VII

6	Advisory Service	94	II
7	Women Friendly Policy	74	III

As per the above table, awareness creation was the most important suggestion given by women which has been ranked I followed by advisory service (II), women friendly policy (III), capacity building (IV), use of information & communication technology (V), gender sensitization (VI) and sharing gender roles (VII). These valuable suggestions should be taken into consideration to avail more benefits from the schemes by the women.

Conclusion: It has been observed through this particular study that even the schemes formulated for women welfare are not reaching them properly and they are not able to avail maximum benefits out of these. Therefore, greatest need of the hour is to change the social attitude towards women by providing equal opportunities to both the gender for gender mainstreaming in our society.

Recommendations:

1. There should be proper review of the existing government programmes and policies.

2. There should be awareness campaign for the villagers about different government schemes.

3. Develop write-up for all the relevant Government schemes/programmes containing detail information and distribute among various stakeholders.

4. Develop participatory schemes/programmes/policies with rural women based on their needs, preferences and issues.

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Extent of Participation In Milk And Milk Products, Food Processing And Preservation

***Dr (Mrs.) Sanghamitra Mohapatra,** Dr. Sangram Paramaguru**
*****Head**,** .Dept. of Extension Education and Communication Management,
Ethelind college of Home Science SHUATS, Allahabad, Uttar Pradesh,
**Senior Scientist and Head, Krishi Vigyan Kendra, Gajapati, O.U.A.T, Odisha

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ABSTRACT

During the last decade, research, extension, policy strategy and budgetary provision have been sensitive to the expansion of agribusiness for women sector. This calls for a scientific investigation so as to know the extent of empowerment being created among women owing to their participation with the sense of equality in land based agri-based enterprises. Hence, the present study is a step forward in this direction to ascertain their level of participation in the emerging agri-enterprises. A descriptive research design was followed to conduct the present study. The study indicated that majority of the respondents were participating in different agri-based enterprises (crop production, vegetable production, milk and milk products, food processing and preservation, poultry, handicrafts (basket weaving) masala making, vermi-composting). In crop production, most of the respondents were involved in storage practices, irrigation and harvesting of crops whereas in vegetable production most of the respondents were involved in harvesting and transplanting of seedlings. The results revealed a significant correlation between the rate of knowledge and participation of respondents. The women have benefitted quite well from their agri-based enterprises and got themselves highly empowered in social and economic spheres of their lives.

Key Words: *Extent of Participation, milk and milk products, food processing and preservation*

Introduction

Empowerment process is strengthened through educational interventions, transfer of technologies, feasibility trials and knowledge sharing. The DRWA, other ICAR institutes and KVKs have concentrated their researches, *inter alia*, to relieve women of the drudgery by providing time and labour saving tools. Besides, vocational trainings are being conducted to impart skills necessary to undertake different avocations. KVKs have trained more than two lakh farm women, girls and women extension workers. The strategies used by AICRP on Home Science have encouraged women to play key role in micro level planning, designing community infrastructure for information dissemination and mobilization of community resources (human and material) to gain benefits from the projects. Empirical evidence suggests that women have moved from beneficiaries to active partners in shaping empowerment. In the present scenario of globalization, liberalization and privatization of agricultural sector, the sustainable development and empowerment of farm women is considered as a key factor for development of any country (**Sharma, 2012).**

Recognizing the role of women in agriculture, Swaminathan has proposed to move the *Women Farmers' Entitlement Bill, 2011 i*n the *Rajya Sabha* that seeks, inter alia, access to water, credit and inputs, *pattas* for women farmers as a policy reform to create enabling environment **(Patel, 2012).**

Women Empowerment is the ability of women to exercise full control over their actions. This means control over material assets, intellectual resources and even over their ideologies. It involves, at the psychological level, women's ability to assert them which has, so far, been constricted by the 'gender roles' assigned to them especially in a culture like India which resists changes. Agriculture can be an important engine of growth and poverty reduction.

In addition to their role in agricultural production, women are gainfully employed in agri-based allied activities like dairying, animal husbandry, poultry, goatery, rabbit rearing, beekeeping, floriculture, horticulture, fruit preservation, post-harvest technology, value added food products, etc (**NAAS, 2001)**.

Rural livelihood in Uttar Pradesh is mainly based on agriculture and allied fields. According to Census 2011, about eighty per cent of the population living in rural sectors earns their living from agricultural enterprises covering field crops, horticultural crops, animal husbandry, fishery, forestry and cottage industry etc. The rural population essentially implies the presence of a significant proportion of women. The women equally contribute towards livelihood like men in all the land based enterprises but unfortunately like research and extension

component of rural development have passed women in matter of evolving gender based technologies and extension strategy. The present scenario at state as well as national level has emphasized to cover women section, to bring them to the mainstream of development.

Objective

1. To find out the personal and socio-economic characteristics of rural women involved in agri-based enterprises.

Materials & Methods

Allahabad district of Uttar Pradesh was purposively selected for the study. From Allahabad district Jasra and Karchana blocks were selected purposively 100 respondents were selected randomly from each block making a total sample size of 200 respondents. Descriptive research design was adopted to **determine** extent of participation of rural women in different agri-based enterprises. Chi-square and **Correlation** were used for analysis of data**.**

Results And Discussions

Extent Of Participation In Agri Based Entreprises

1. Preparation of Milk Products

Table: 1

Distribution of respondents according to extent of participation in preparation of Milk Products.

(N = 200)

Sl. No.	Practices	Extent of participation					
		Always		Sometimes		Never	
		F	P	F	P	F	P
1.	Milking	24	12.00	37	18.50	139	69.50
2.	Dahi Making	200	100.00	0	0.00	0	0.00
3.	Ghee making	200	100.00	0	0.00	0	0.00
4.	Paneer	23	11.50	147	73.50	30	15.00
5.	Khoa	10	5.00	191	95.50	1	0.50
6.	Chhanna making	2	1.00	121	60.50	77	38.50
7.	Storage	165	83.50	33	16.50	0	0.00
8.	Management	123	61.50	37	18.50	10	5.00
9.	Marketing	83	41.50	72	36.00	45	22.50

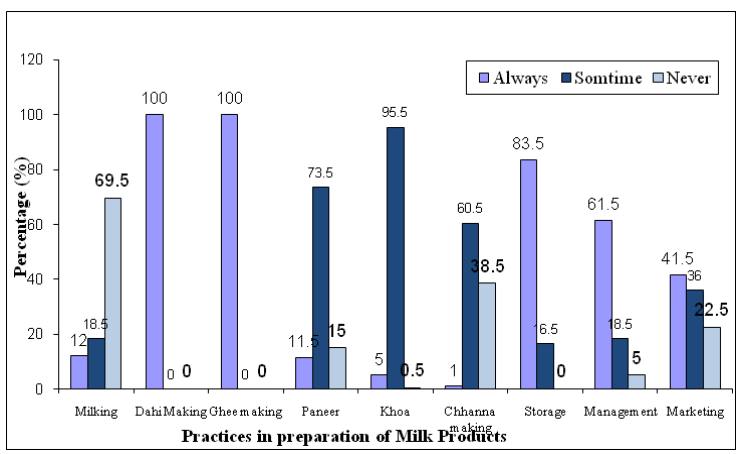

Fig.1. Distribution of respondents according to extent of participation in preparation of milk Products

From the table 4.18 and fig.4.18 it is clearly visible that only 12 per cent were involved in milking. It is astonishing to find that cent per cent respondents were involved in dahi and ghee making while 11.5, 5.0 and only one per cent were involved in paneer, khoa and chhanna making respectively. Majority of the respondents (83.5%) involved themselves in storage of milk and milk products whereas 61.5 per cent participate in management of the milk products. Less than half (41.5%) market their milk and milk products.

It may be due to fact that dairying is an important means of livelihood to millions of respondent farmers. The increasing demand for milk and milk products in recent years intensifies dairy farming as profitable enterprise for women. Milk production and processing of milk play a vital role in India's agricultural economy. Dairy enterprise has been regarded as an important socio-economic instrument to supplement the income and employment to the women. Women generally contribute more labour inputs in areas of fodder cutting, watering, cleaning and maintenance of animals and their sheds, manure collection, preparation of dung cakes, selling of milk and milk products as reported by **Arshad, *et al.* (2013).** Milking the animals and milk processing has also been attributed to the women folks to a greater extent. Instead of the seasonal income provided by crops, a dairy enterprise, once established or improved, can supply milk that is sold weekly or even daily for cash. In the vast majority of cases, that cash goes to the women of the household. Furthermore, research down the years has shown that money earned by women goes directly to support the family, paying for food, education and medicine.

The finding of the study are in concurrence with the findings of **Mishra and Mahalati (2008)** who explained that the role of a dairy enterprise not only in earning profit for the cattle breeders but also in utilizing idle resources, such as crop residues, and the labour force. The results of this study proved that taming dairy animals not only generates substantial income, but also has the potential to create more income than agriculture. It also proved that the by-products of dairying, such as manure, help to improve the fertility and productivity of landholdings. Based on the results, this study suggests that the government as well as the general public should take more initiatives to accelerate the dairy farming in the rural areas, so that the national objectives of more equal distribution and sustainable development can be attained.

1. Food processing and Preservation

Table: 2 Distribution of respondents according to extent of participation in Food processing and Preservation

(N = 200)

Sl. No.	Practices	Extent of participation					
		Always		Sometimes		Never	
		F	P	F	P	F	P
1.	Selection of raw material (Fruit)	157	78.50	38	19.00	5	2.50
2.	Processing	191	95.50	8	4.00	1	0.50
3.	Packaging (Bottling/Canning)	123	61.50	35	17.50	42	21.00
4.	Storage	172	86.00	22	11.00	0.6	3.00
5.	Management	68	34.00	87	43.50	45	33.00
6.	Marketing	95	47.50	49	24.50	66	33.00

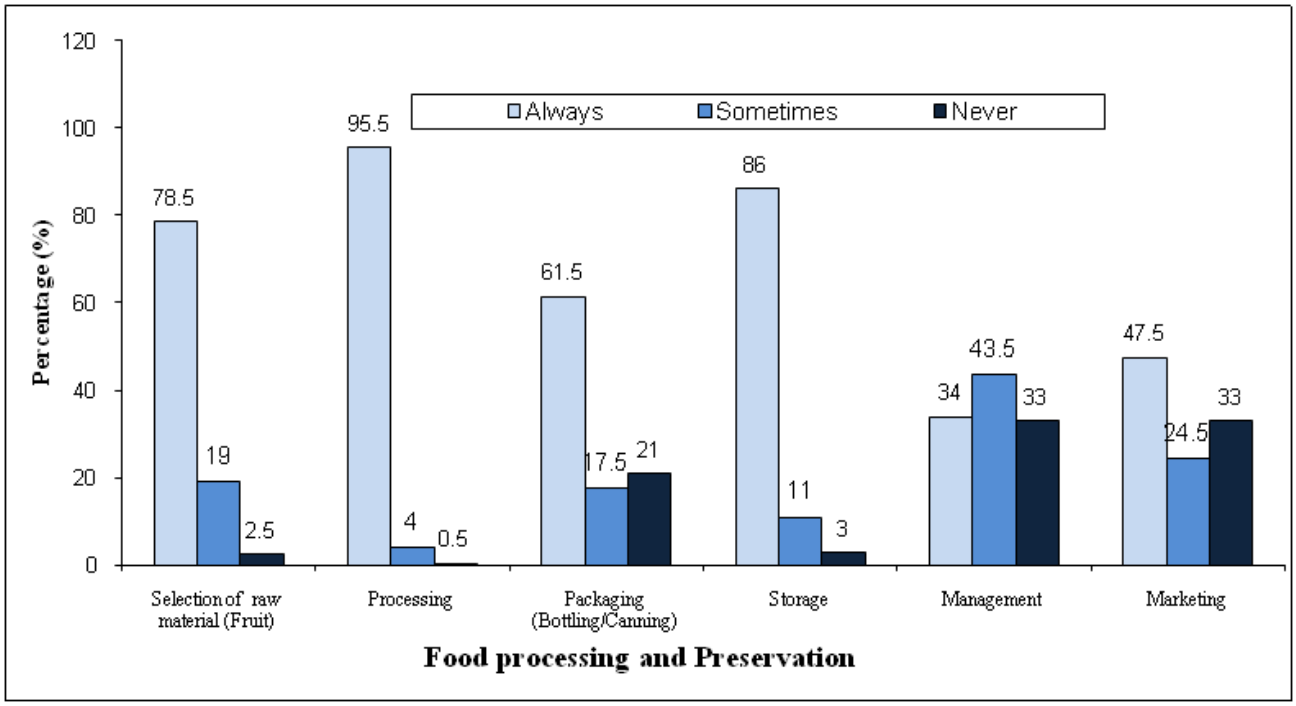

Fig.2. Distribution of respondents according to extent of participation in Food processing and Preservation

The result in the table shows that most of the women were involved in food processing and preservation. It is observed that 78.50 per cent select the raw materials for food processing whereas 95.50 per cent involve themselves in processing and preservation and 61.50 per cent pack their prepared products. Management of these activities was done by 34 per cent while 47.50 per cent market these prepared products.

It may be due to fact that while women produce more than 50 percent of the food worldwide according to FAO estimates. They also perform the overwhelming majority of the work in food processing in developing countries. Food processing contributes to food security through reducing food losses, contributing to diversity of diet and supplying important vitamins and minerals. In addition to the time-consuming tasks of grinding and pounding the staple grains, smoking fish and meats, women process and preserve the fruit and vegetable produce from their home gardens and from the forests. Moreover, women are almost universally responsible for preparing food for their households and thus for the nutritional well-being of its members.

Table 3

Association between empowerment and extent of participation of respondents in different agri-based activities

(N=200)

S.N.	Categories	Participation		Empowerment		Cal. Value χ^2	Tab. Value χ^2
		F	P	F	P		
1	Milk and milks products	181	90.50	189	94.50	12.46*	
2	Food processing and preservation	178	89.00	184	92.00	11.23*	**10.597**

The calculated value of chi-squares in between participation and empowerment of Milk and milks products and food processing and preservation activities were more than the Table value of chi-square (10.597) at 2 degrees of freedom and 5 percent probability levels indicate that there is a strong and positive association between the participation and empowerment of different activities undertook by the respondents of agri-based enterprises.

The detail description of chi-square values showed that the calculated value of chi-squares were significant in preparation of milk products (t cal=11.23, t tab=10.597) and food processing and preservation (t cal. =12.46, t tab. =10.597). These can be largely attributed to the fact that the level of participation and awareness level among respondents had increased to a certain extent by inculcating the effectiveness of knowledge of across all entrepreneurial activities. The traditional roles of women have undergone some changes due to economic needs, and some efforts were made to bring visibility and mainstream women's contribution to the overall growth and development of society.

Conclusion

The study indicated that majority of the respondents were participating in different agri-based enterprises (Milk and milks products and food processing and preservation). Majority of the respondents were involved in dahi and ghee making, storage of milk whereas in food processing, the sample women were involved in the raw material selection, processing and preservation of prepared products. There is a positive association between socio-economic status and participation of the respondents. The women have benefitted quite well from their agri-based enterprises and got themselves highly empowered in social and economic spheres of their lives.

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Factors Causing Distress Migration Among Bonded Labourers in Nuapada District of Odisha

Dr. Madan Mohan Manjhi[1], Dr. P. Swain[2], Dr. K. Shweta[3*] & Dr. B.C. Das[3]
1. Ex-PG Student, 2. Prof & Head & 3. Asst. Prof.,
Dept. of Vety. & A.H. Extension, C.V.Sc. & A.H., OUAT, Bhubaneswar
* Corresponding Author : e-mail – bulbul.shweta@gmail.com

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ABSTRACT

Every year, a large chunk of workforce from Nuapada district are compelled for distress migration to work in the brick kilns of Andhra Pradesh, Uttar Pradesh andChhattisgarh. In order to find out the important factors causing distress migration among bonded labourers inNuapada district of Odisha, the present study was carried out with a sample size of 50 respondents selected randomly from one migratory destination i.e. suburbs of Raipur in Chhattisgarh.The primary data was collected with the help of pre-structured interview schedule. The results of the study revealed that, majority of the respondents stronglyagreed that social factors (43.6%), economic factors (61.2%), livelihood factors (66.2%), indebtedness factors (66.8%) and, support and servicefactors (67.8%) had a bearing on their migration.Among different factors of migration studied, support and service factors got the first rank followed by livelihood factors,indebtedness factors, economic factors and social factors, respectively.

Key Words : *Distress migration, Bonded labourers, Nuapada district*

Introduction

Every year, a large chunk of workforce from Nuapada district migrates out ofthe state to work in the brick kilns of Andhra Pradesh, Uttar Pradesh andChhattisgarh. The migration is not with a purpose to make more money and gainaffluence; rather it's like an ordeal to repay the loan amount they have taken at thetime of urgent need like marriage of children, festival expenses and hospitalemergency. The poor labourersdon't get any work during the lean agricultural season from harvesting to sowing andtheir indebtedness compels them to work as bonded labourers in a distressed conditionin the brick kilns out of the state. These people are chiefly marginal farmers andlandless labourers. As they have meagre patches of land to cultivate, agrarianinterventions will be of no help to them. Much to their woe, there is no major or largeindustry in the district which could take care of their employment plight.

With this background, an attempt was made find out the important factors causing distress migration among bonded labourers inNuapada district of Odisha.

Materials & Methods

Fifty migrant bonded labourers were selected randomly from one migratory destination i.e. suburbs of Raipur in Chhattisgarh. The migrants were selected on the basis of their experience inmigration(minimum of three years' continuous migration).

The primary data was collected through interview method with the help of pre-structured interview schedule. The factors for distress migration were grouped into 5 categories viz. social factors, economic factors, livelihood factors and factors related to support and service, and factors of indebtedness.A total of 50 statements weredeveloped (10 from each category of factors) for collection of data. The responses of the respondents were recorded in a five-point continuum scale and scoring was done as 5, 4, 3, 2 and 1 respectively for Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree which were analysed and the results are presented herewith.

Results and Discussion

1. Social factors of migration

Data in the Table-1reveals that 43.6 per cent of migrant bonded labourers stronglyagreed that social factors had a bearing on their migration followed by 16.4 per centsimply agreeing to the fact. However, 2.4 per cent remained neutral. 13.6 per centrespondents disagreed that social factors had a bearing on their migration and 24 percent had strongly disagreed to it.This indicates that social factors had some role inmigration but not all the role.

Table – 1: Distribution of respondents as per factors of distress migration (N=50)

Sl. No.	Factors	Response (%)				
		SA	A	UD	DA	SD
1	Social Factors	43.6	16.4	2.4	13.6	24.0
2	Economic Factors	61.2	18.8	3.4	9.4	7.2
3	Livelihood Factors	66.2	20.8	4.4	6.0	2.6
4	Indebtedness Factors	66.8	13.4	0.6	13.6	5.6
5	Support and Service Factors	67.8	22.4	5.2	3.4	1.2

(SA-Strongly Agree, A-Agree, UD-Undecided, DA-Disagree, SD-Strongly Disagree)

2. Economic factors of migration

From the data in Table-1, it is revealed that 61.2 per cent ofmigrant bonded labourers strongly agreed that economic factors had a bearing ontheir migration followed by 18.8 per cent simply agreeing to the fact. However, 3.4 percent remained neutral. 9.4 per cent respondents disagreed that economic factors hada bearing on their migration and 7.2 per cent had strongly disagreed to it.This indicates that people mighthave migrated without getting any income generating activities in their locality.

The findings of the studyare in tandem with the findings of Panigrahi (2009) that 76 per cent ofthe migrations occurred due to an advance loan taken by the migrants.

3. Livelihood factors of migration

Table-1 reveals that 66.2 per cent of migrant bonded labourers stronglyagreed that livelihood factors had a bearing on their migration followed by 20.8 percent agreeing to the fact. However, 4.4 per cent remained neutral. 6 per centrespondents disagreed that livelihood factors had a bearing on their migration and 2.6per cent had strongly disagreed to it. This indicates that meagre income from agriculture, the major source of livelihood was unable to check migration.

4. Indebtedness factors of migration

From the data in Table-1, it is revealed that 66.8 per cent of migrant bondedlabourers strongly agreed that indebtedness factors had a bearing on their migrationfollowed by 13.4 per cent simply agreeing to the fact. However, 0.6 per cent remainedneutral. 13.6 per cent respondents disagreed that indebtedness factors had a bearing ontheir migration and 5.6 per cent had strongly disagreed to it.It indicates that indebtedness that contributed to the migration, might be attributed to lack of any savings at the time of emergencies. Lack of surplus income might have led to debt bondage in case of migrants.

This corroborates the findings of Guerin (2012) who reported that 71per cent of migrations were debt bondage in nature.

5. Support and service factors of migration

Table-1 clearly indicates that, 67.8 per cent of migrant bonded labourers strongly agreed that support and servicefactors had a bearing on their migration, followed by 22.4 per cent simply agreeing tothe fact. However, 5.2 per cent remained neutral and 3.4 per cent respondentsdisagreed that support and service factors had a bearing on their migration, and 1.2per cent had strongly disagreed to it.This reveals that there existed unscrupulous moneylenders who charge exorbitant rates and govt. was not in any hurry to check them. The exploitation of the respondents by the labour contractor moneylenders might be due to their lack of education and awareness. As support and service factors got overwhelming response against the govt., either it may be attributed to govt. bashing just out of instinct or govt. is callous to the plight of the migrant bonded labourers.

6. Comparative analysis of factors of distress migration among migrantbonded labourers

In order to know the extent of migration in relation to the five categories of factors,the mean score was calculated for each category of factorand an attempt was made to compare all these mean scores. Accordingly, a rankscale was prepared in a descending order starting from highest to lowest. Theresponses were also summed up for each type of response in each category and agraph was plotted for the same. The details of these analyses are presented in the table below

Table 2.Ranking of factors of migration as responded by migrant bondedlabourers

Sl. No.	Factors	Mean Score	Rank
1	Social Factors	3.42	V
2	Economic Factors	4.17	IV
3	Livelihood Factors	4.42	II
4	Indebtedness Factors	4.22	III
5	Support and Service Factors	4.52	I

Table above revealed that support and service factors got the first rank with a score of 4.52 followed by livelihood factors with a score of 4.42. Indebtedness factorsbagged the third position with 4.22, economic factors fourth with 4.17 and socialfactors came last in the list with a mean score of 3.42.

Support and service factorstopping the list may be attributed to the negative attitude of the migrants who ventedtheir anger by govt. bashing. Livelihood factors coming next to it might be due to thefact that migrants were in a 'survival strategy' mode. They first saw the food securityfor their families and then went for any other task.

Conclusion

The results of the study revealed that, majority of the respondents stronglyagreed that social factors (43.6%), economic factors (61.2%), livelihood factors (66.2%), indebtedness factors (66.8%) and, support and servicefactors (67.8%) had a bearing on their migration.Among different factors of migration studied, support and service factors got the first rank followed by livelihood factors,indebtedness factors, economic factors and social factors, respectively.

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