Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Assessing the impact of forest resource accounting through participatory approach in West Bengal

M. M. Adhikary*, K. Pradhan** and S. K. Acharjee*

Introduction

At the advent of Sustainable Forest Management, the participation of the local people or the local community plays the pivotal role for managing the forest resources in a nutshell. The positive impact of the community participation in forest management implies the forest regeneration, monitoring and evaluation of the forest resources. In the present arena, the coordinated approach of forest department and the local people helps to carried out the researches on the forest resources to build knowledge and to construct techniques for getting maximum benefit from the forest fringes through optimum utilization of the forest resources. Under such a research climate, it is very helpful to conduct studies on the patterns of the ecological change in natural forests for planning forest management process in different strata. To endow with the vegetation status in localized perspective is very much essential for grass-root level planning in Joint Forest Management to understand and equip with the dynamic and varied environmental perspectives. In this regard Vegetation monitoring proved to be one of the most important tools for the local community wherein the people had amalgamated their indigenous technical knowledge with the modern scientific information in managing the forest resources.

Conceptual framework

The participatory vegetation monitoring is a process by which one can assess the species diversity and productivity of a given forest fringe with the active involvement of the local people.

[&**] Professor, Department of Agricultural Extension, BCKV, Krishi Viswavidyalaya, Nadia, West Bengal*
[2]Asstt. Professor, UBKV, Pundibari, Cooch Behar, West Bengal

Objectives of Participatory Vegetation Monitoring:

- To assess the scientific parameters of a forest for measurement by involving the local people like:
  a) Girth at Breast Height (GBH) / Diameter at Breast Height (DBH)
  b) Height of a tree
  c) Species richness
  d) Canopy cover
- To prepare indigenous baseline and standardize parameters;
- To identify local forest management options;
- To develop Participatory Forest Management strategy for tangible output.

Site Selection

Traditional method: Selection of site by throwing stone in any direction of the forest.

Materials required

- Measuring tape (cms)
- A long pole/ Abney level altimeter
- Color brush
- Rope (53 mts. long)
- Four iron pegs

Methods:

a) Tapping local knowledge on vegetation: This process helps to tap the local knowledge available in the forest fringes regarding the vegetation present in the forest with the help of local people through participatory mode. This knowledge helps the local people as well the forest policy makers to construct the a development plan on the basis of the forest resources available in the particular area by amalgamating the modern scientific forest management plan with the traditional management practices.

b) Scientific method: The method had been developed to analyse the forest resources in a given area of a whole forest embedded with the specific selected area analysis. The quadrate method had been discussed to analyse the resources in 10 x 10 sq.m area for getting an empirical idea regarding the forest resources present in the given forest.

Quadrate method: Tree quadrate: 10 X 10 m^2, counting the number of the trees and their corresponding height and GBH (Girth at Best Height)

Shrub quadrate: 5 X 5 m^2, counting the shrub species and identifying them.

Herb quadrate: 1X1 m^2, counting the herb species and identifying them.

Analysis

- Tree quadrate:

  1) Average number of tree,

  2) Average GBH and Basal area $(GBH)^2/ 4ð$

  3) Average Height

  4) Biomass

  5) Species density

- Shrub quadrate: 1) Species density and identification

  2) Biomass

- Herb quadrate: 1) Species density and identification

  2) Biomass

- Canopy cover estimation by line transect method

Displaying of Information, obtained by Participatory Vegetation Monitoring

a) Tree (10m X 10m)

Name of the tree	July				November				March			
	Avg. No.	Avg. GBH (cm)	Avg. Height (Ft)	No. of climbers	Avg. No.	Avg. GBH (cm)	Avg. Height (Ft)	No. of climbers	Avg. No.	Avg. GBH (cm)	Avg. Height (Ft)	No. of climbers

b) Shrubs (5m X 5m)

Name of the shrub	July	November	March
1			
2			
3			

c) Herbs (5m X 5m)

Name of the herbs	July	November	March
1			
2			
3			

METHODOLOGY OF THE PRESENT STUDY

The research had been conducted in five Forest Protection Committee (FPC) areas under the Bishnupur Soil Conservation Forest Division in Bankura Distrct of West Bengal. The area had been selected purposively as the forest resources are very much income generating in this area. The five FPCs are: Talbandhi, Jhantibani, Shyamnagar, Chowkan and Nakaijhuri. The data were collected with the participatory method. The analysis were done according to the method of participatory vegetation monitoring. Ample participation had been expected from the villagers and their participation was also desirable during the process of data collection.

RESULTS AND DISCUSSION

The results had been presented below according to the Forest Protection Committee available during the process of data collection. The number of tree and species density and the biomass in the 10 x 10 sq.m forest areas had been depicted. The discussions had been made under the subhead impact of Participatory Vegetation Monitoring.

1. Jhantibani:

Akashmoni (Acacia auriculiformis) Plantation

➢Tree quadrate:

1) Average number of tree: 27

2) Average GBH and Basal area (GBH) ^{2}/ 4ð: 28.3793cm, 64.064735cm^2

3) Average Height: 31.55 ft.

4) Biomass: 531.3286 Kg/100m^2

5) Species density: 0.27/m^2

➢Shrub quadrate:

1) Species identification

Nil

➢Herb quadrate:

1) Species identification

Mutha (Cyperus sp.)

Durba (Cynodon dactylon)

2. Shyamnagar:

a) Sal (Shorea robusta) Natural

➢Tree quadrate:

1) Average number of tree: 15

2) Average GBH and Basal area (GBH) ^{2}/ 4ð: 38.26667cm, 116.48142cm^2

3) Average Height: 26.2 ft.

4) Biomass: 967.43541 Kg./ 100 m^2

5) Species density:0.15 / m^2

➢Shrub quadrate:

1) Species identification

Kend (*Diospyros montana*)

Sida (*Sida cordifolia*)

Bench (*Flacourtia indica*)

Kalmegh (*Andrographis paniculata*)

➢Herb quadrate:

1) Species identification

Anantamul (*Hemidesmus indicus*)

Mutha (*Cyperus sp.*)

Durba (*Cynodon dactylon*)

b) Ucalyptus Sp. Plantation

➢Tree quadrate:

1) Average number of tree:11

2) Average GBH and Basal area (GBH) ^{2}/ 4ð: 41.2cm, 135.0236cm^2

3) Average Height: 28.2 ft.

4) Biomass: 1121.7064 Kg./100m^2

5) Species density: 0.11/m^2

➢Shrub quadrate:

1) Species identification

Baichi (*Flacourtia indica*)

Kend (*Diospyros montana*)

Lilajhupi (*Cassia tora*)

Bhutbhairab (*Gardenia latifolia*)

➢Herb quadrate:

1) Species identification

Jhirkunda (*Andropogon aciculatus*)

Durba (*Cynodon dactylon*)

Anantamul (*Hemidesmus indicus*)

3. Nakaijhuri:

a) Ucalyptus Sp. Plantation

➢Tree quadrate:

1) Average number of tree: 8

2) Average GBH and Basal area (GBH) ^{2}/ 4ð : 36.625cm, 106.70153cm^2

3) Average Height : 29 ft.

4) Biomass : 886.06673 Kg./ 100m^2

5) Species density: 0.08/ m^2

➢Shrub quadrate:

1) Species identification

Bhutbhairab (*Gardenia latifolia*)

Baichi (*Flacourtia indica*)

Siakul (*Zizyphus oenoplia*)

➢Herb quadrate:

1) Species identification

Durba (*Cynodon dactylon*)

Mutha (*Cyperus sp.*)

Golpata (*Tinospora cordifolia*)

Anantamul (*Hemidesmus indicus*)

b) Sal (Shorea robusta) Natural

➢Tree quadrate:

1) Average number of tree: 18

2) Average GBH and Basal area (GBH) ^{2}/ 4ð: 41.6470cm, 137.9698cm^2

3) Average Height: 26.5 ft.

4) Biomass: 1146.2188Kg/100m^2

5) Species density: 0.18/m^2

➢Shrub quadrate:

1) Species identification

Baichi (*Flacourtia indica*)

Kul (*Zizyphus jujuba*)

Siakul (*Zizyphus oenoplia*)

Sida (*Sida cordifolia*)

Khejur (*Phoenix acaullis*)

Palash (*Butea frondosa*)

Kend (*Diospyros montana*)

Bhabri (*Wedelia chinensis*)

➢Herb quadrate:

1) Species identification

Durba (*Cynodon dactylon*)

Mutha (*Cyperus sp*)

Golpata (*Tinospora cordifolia*)

Anantamul (*Hemidesmus indicus*)

4. Chowkan:

Sal (Shorea robusta) Natural

➢ Tree quadrate:

1) Average number of tree: 14

2) Average GBH and Basal area (GBH) ^{2}/ 4ð : 27.6667cm, 60.8876cm^2

3) Average Height: 20.9285ft.

4) Biomass : 514.89506 Kg./ 100m^2

5) Species density: 0.14/ m^2

➢ Shrub quadrate:

1) Species identification

Baichi (*Flacourtia indica*)

Kul (*Zizyphus jujuba*)

Siakul (*Zizyphus oenoplia*)

Sida (*Sida cordifolia*)

Khejur (*Phoenix acaullis*)

Palash (*Butea frondosa*)

Kend (*Diospyros montana*)

Atang (*Combretum decandrum*)

Sirish (*Albezia lebbek*)

Bahera (*Termenalia chibula*)

➢Herb quadrate:

1) Species identification

Mutha (*Cyperus rotundus*)

Banalu (*Diascorea elata*)

Bakhar (*Premna harbacea*)

5. Talbandhi:

Sal (Shorea robusta) Natural

➢ Tree quadrate:

1) Average number of tree: 5

2) Average GBH and Basal area (GBH) ^{2}/ 4ð: 43.8cm, 152.6031cm^2

3) Average Height: 22.8 ft.

4) Biomass: 1267.9685 Kg./100m^2

5) Species density: 0.05/m^2

➢Shrub quadrate:

1) Species identification

Mainakata (*Zizyphus jujuba*)

Sida (*Sida cordifolia*)

Kurchi (*Holarrhena antidysenterica*)

Kend (*Dyospyros montana*)

Bahera (*Tarmenalia belerica*)

Kalmegh (*Andrographis paniculata*)

Karanja (*Pongamia glabra*)

➢ Herb quadrate:

1) Species identification

Dudhalata (*Cissus quadragularis*)

Anantamul (*Hemidesmus indicus*)

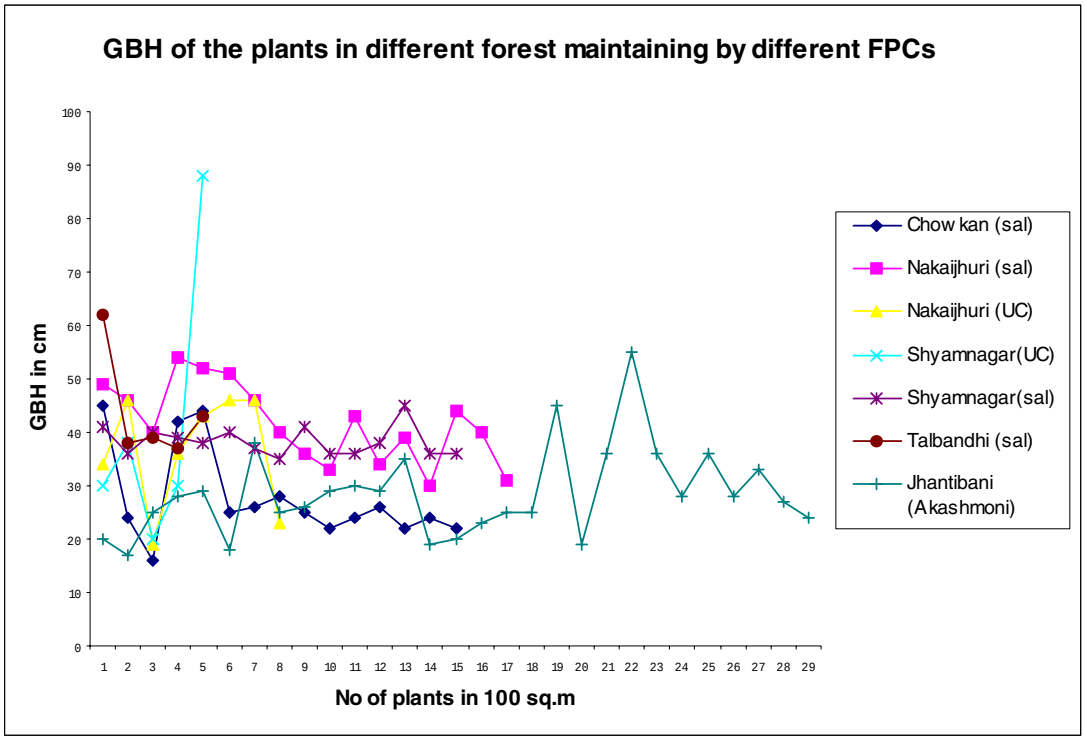
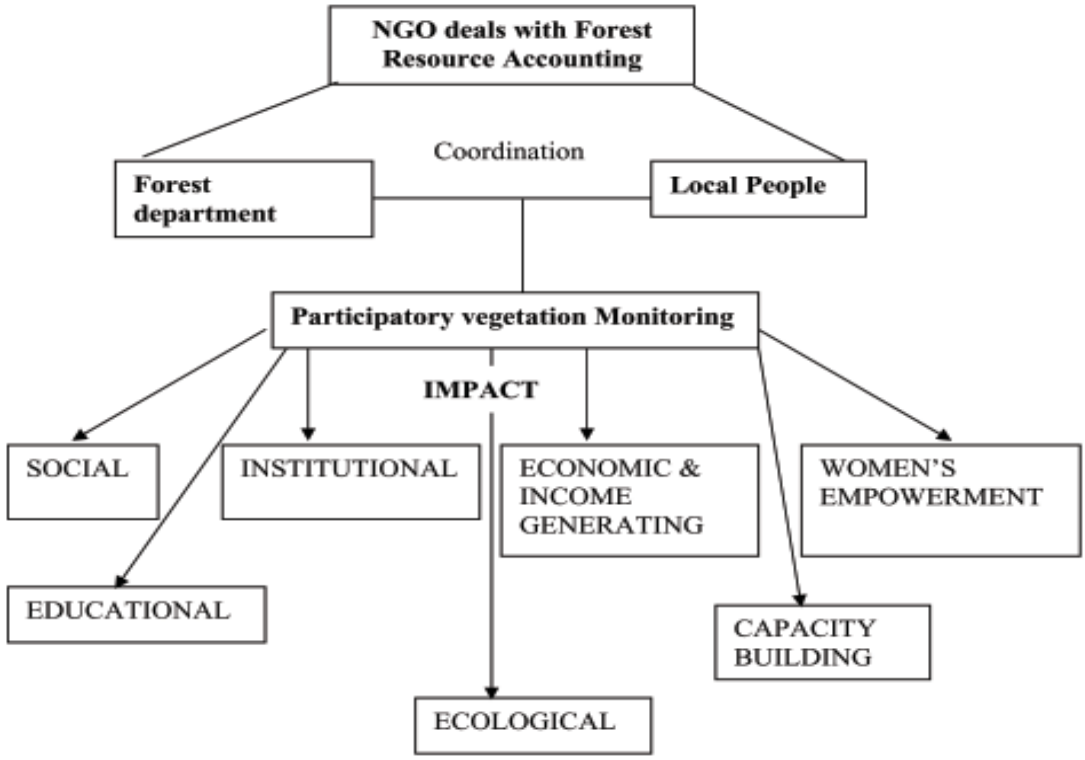


Fig1: Girth at the breast height of the plants in different forest maintaining by different forest protection committee

Impact of participatory vegetation monitoring
Implication of the information generated by the Participatory Vegetation Monitoring in the locality



Social Impact:

- Development of group cohesiveness and sense of belongingness;
- Modification of forest rules and regulation for a particular community;
- Conflict management;
- Organising community rituals in-group;
- Arrangement of social functions in a better way;
- Introducing inbuilt action for forest protection according to their tradition;
- Development of punishment and reward mechanism;
- Motivation for protection of forest;

Institutional Impact

- Development of coordinating approach, while working with the Forest Department;
- Development of the linkage with the other institutions like School, Panchayat etc.;

- Institutional recognition;

Economic and Income Generating Impact

- Adequate information for NTFP (Non Timber Forest Products) collection and marketing;
- Realization about the total economic value of the forest;
- Self Help Group (SHG) formation for self employment;
- SGSY (Swarna Jayanti Gram Swarojgar Yojana) Self Help Group formation and strengthening for self-employment;
- Augmentation of income through wage and self-employment;
- Creation of man-days for wage employment;

Women's empowerment

- Formation and smooth running of women's self help group;
- Involvement of women in decision making for sustainable forest management;
- Income generation by the women through self-employment;
- Collaboration with the male counter part for the protection of the forest;
- Sensitization of self regarding literacy and child's education;

Educational Impact

- Development of the mental set up for child education due to the interaction with the fellow villagers;
- Gaining of Scientific knowledge;
- Paves the way to mix the traditional knowledge with the scientific knowledge;
- Helps to identify the beneficial and harmful species in the forest;
- Utilisation of the knowledge of Participatory Vegetation Monitoring to meet the local needs;

Capacity Building Impact

- Development of the capacity in measuring the trees;
- Builds the capacity to plan according to the availability of forest resources;
- Builds the capacity to monitor the ecological aspect of the forest;

Ecological Impact

- Understanding of forest resources;
- Identification of the harmful activities and prepare to bring positive attitudinal changes;
- Regulation of grazing;
- Regeneration of the plant species;
- Prevention of illicit felling of trees.

Impact of the ecological analysis

- Species density as an indicator of the abundance of the species, which identifies the dominant and rare species;
- Basal area, which is a measure of productivity, provides the information on the proportion or dominance of larger and smaller trees in an ecosystem and indicates the status of standing biomass that is whether the forest is degrading or improving;
- Biomass is used as fuel for domestic activities and non-domestic activities, fodder, green manure, timber, food, medicinal raw material;
- Estimation of the forest product utilization helps to analyze the dependence of the local inhabitants on plant products;
- Ecological analysis helps to assess the income and employment generated by the different forest products;
- It serves as a tool to motivate the governments and forest local communities to protect forest and village plant resources;
- It helps to promote inclusion of non-timber plant product species in reforestation programme.

Apart from all these beneficial implications of the participatory vegetation monitoring this approach is a system approach and see the part from the whole holistically with a multidisciplinary interventions. The identification of medicinal plants of the forest helps to the villagers to use the plant accordingly during their illness. So, from this process they can identify the newer potential area of NTFP management and marketing.

CONCLUSION

The concept of Participatory vegetation monitoring is very clear to the villagers and they are doing the right thing to know the present vegetation status of their forest in a nutshell. The villagers or the FPC members of the aforesaid FPCs are conducting the participatory vegetation monitoring in their forest after getting trained by the NGO professionals successfully. They are getting the benefit of knowing the species of their forest. They are being aware about the harmful and beneficial species of their forests for utilizing them in their local situation. They are taking the help from the NGO to build their capacity regarding the income generating approach from their forest resources. They are working successfully with the forest department and they had built a sense of belongingness within

themselves. They are deciding about the process of felling the trees and helping the forest department regarding the regeneration of the helpful species in their forest fringes. So, it's an innovative approach to create awareness regarding the forest and its utilization in an appropriate manner. It is the high time to pay attention to the process of participatory vegetation monitoring which is giving such a valuable input in a very good number to the forest dwellers, for future planning and strategy making regarding the sustainable forest management. The planners and the policy makers should pay due attention to the process for the future scope of participatory forest management in terms of participatory vegetation monitoring. Along with this the economic analysis should be conducted to know the income of the forest dwellers from their forests.

REFERENCES:

1. *Adger, N., K. Brown, R. Cervigni and D. Moran 1995. Total Economic Value of Forests in Mexico. Ambio, Vol. 24, No. 5.*
2. *Bennet, C. F. 1973. Analysing impacts of Extension Programme. USDA. Washington.*
3. *Flowers, P. J. R. C. Conner, D. H. Jackson, C. E. Keegan, B. Long, E. G. Schuster, and W. L. Wood. 1993. An Assessment of Montana's Timber Situation. Montana Forest and Conservation Experiment Station. Misc. Pub. 53.*
4. *Harcharik, David A. 1997. The future of world forestry: sustainable forest management. Unasylva. 48:4-8.*
5. *Negi, S.S. 1986. A Handbook of Forestry. International Book Distributors. Deheradun.*
6. *Negi, S.S. 1994. Forestry Extension Handbook. International Book Distributors. Deheradun.*
7. *Rabindranath, S. and Premlata. 1988. Biomass Studies: A field Practice and Techniques*
8. *Scott, Anthony. 1965. Natural Resources: The Economics of Conservation. 2nd ed. University of Toronto Press. Toronto.*

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Sustainable Livelihood Approach: A tool for Poverty Reduction

C. Satapathy and K .Ghadei

Introduction:-

Poverty in India is still rampant despite an impressive economic growth. An estimated 250 million people are below the poverty line and approximately 75 per cent of them are in the rural areas. In general, poverty can be defined as a situation when people are unable to satisfy the basic needs of life. The definition and methods of measuring poverty differs from country to country. According to the definition by Planning Commission of India, 2007 poverty line is drawn with an intake of 2400 calories in rural areas and 2100 calories in urban areas. If a person is unable to get that much minimum level of calories, then he/ she is considered as being below poverty line. In its report the planning commission India, 2007 identified the following reason of poverty. Causes of Poverty in India

- High level of dependence on primitive methods of agriculture
- High population growth rate
- High Illiteracy (about 35% of adult population)
- Regional inequalities
- Protectionist policies pursued till 1991 that prevented high foreign investment
- Lack of proper implementation of gtfvt. rules/ planning, Need for Sustainable Livelihood Approach

Sustainable Livelihood (SL) is an attempt to go beyond the conventional definitions and approaches to poverty eradication. The conventional approach to poverty reduction could not give satisfactory answer regarding the nature and understanding of poverty. Many development agencies have been inspired by the interpretation and elaboration of Sustainable livelihood (SL) approach because of three important factors (Krantz, 2001).

1. Economic growth is essential for poverty reduction and it depends upon the capabilities of poor to take the advantages of expanding economic opportunities

2. Poverty is not concern with only low income but also includes other dimensions such as bad health, illiteracy, lack of social services, state of vulnerability and feeling of powerlessness

3. The poor themselves know their situation and given chance they are committed for implementation of development project. The above points give justification for the study of sustainable livelihood approach in study of poverty reduction (Krantz,L2001) Meaning of Sustainable Livelihoods Approach

The sustainable livelihoods approach is a way of thinking about the objectives, scope, and priorities for development activities. It is based on evolving thinking about the way the poor and vulnerable live their lives and the importance of policies and institutions. It helps formulate development activities that are:

- People-centered
- Responsive and participatory
- Multilevel
- Conducted in partnership with the public and private sectors
- Dynamic
- Sustainable

The sustainable livelihoods approach facilitates the identification of practical priorities for actions that are based on the views and interests of those concerned but they are not a panacea. It does not replace other tools, such as participatory development, sector-wide approaches, or integrated rural development. However, it makes the connection between people and the overall enabling environment that influences the outcomes of livelihood strategies. It brings attention to bear on the inherent potential of people in terms of their skills, social networks, and access to physical and financial resources, and ability to influence core institutions.

Livelihood and sustainable livelihood

In every day language "livelihood" refers to a "means of living". Asking someone "How do you earn your livelihood?" is the same as asking "What do you do for a living?" In development thinking, livelihood refers to *the way people make a living,* and analyzing livelihood systems is the analysis of the factors involved in the way in which people make a living. We speak of "livelihood systems", because the livelihood provided for is an emergent property of a coherent and interrelated set of activities that are implemented within a broader environment. "Making

a living" is largely about generating income. But this is really a means to an end, which also includes aspects of: Food security (the ability to feed oneself and one's family); providing a home, Health; Security (reduced vulnerability to climatic, economic or political shocks, etc); Sustainability (the ability to continue to make a satisfactory living); Power (the ability to control one's own destiny), etc.

It is important not to loose sight of these long-term goals. In other words, improving rural livelihoods involves more than just maximizing the production of crops or livestock. Although most agricultural research is about natural resources, plants and animals, agricultural researchers cannot ignore the fact that agriculture is a human activity. The farming systems that people develop depend .on social, economic, cultural, and psychological and policy factors, as well as on natural or biophysical factors (Hawkins, R, 2007). What is meant by Sustainable Livelihoods?

The sustainable livelihoods idea was first introduced by the Brundtland Commission on Environment and Development as a way of linking socioeconomic and ecological considerations in a cohesive, policy-relevant structure. The 1992 United Nations Conference on Environment and Development (UNCED) expanded the concept, especially in the context of Agenda 21, and advocated for the achievement of sustainable livelihoods as a broad goal for poverty eradication. It stated that sustainable livelihoods could serve as 'an integrating factor that allows policies to address 'development, sustainable resource management, and poverty eradication simultaneously (UNDP, June, 1997).

Most of the discussion on SL so far has focused on rural areas and situations where people are farmers or make a living from some kind of primary self managed production. In a classic 1992 paper, Sustainable Rural Livelihoods: Practical concepts for the 21st Century, Robert Chambers and Gordon Conway proposed the following composite definition of a sustainable rural livelihood: *A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable -which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term.* DFID's approach will be discussed in more detail in a later section. This section

summarizes some of the proposals and observations of IDS research on the theme, as discussed by one of its leading proponents, lan Scoones, in an influential report (Scoones 1998).

The IDS (Institute for development studies) team proposed a modified definition of SL: A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base. The tentative framework to analyze sustainable rural livelihoods. The IDS team is their study prepared a tentative outline to analyze sustainable livelihood. The report of Scoones elaborated three essential elements of livelihood analysis such as:

a) Livelihood resources

b) Livelihood strategy

c) Institutional process & Organizational studies. a. Livelihood Resources

The basic material and social, tangible, and intangible assets that people use for constructing their livelihoods-are conceptualized as different types of'capital' to stress their role as a resource base '...from which different productive streams are derived from which livelihoods are constructed' (Scoones 1998:7). In a legal or accounting sense, "assets" are something that can be balanced against "debts". In discussion of livelihoods, "assets" are often considered in a way synonymous to "resources" or "capital" in a broad sense; i.e. something that can be used to provide a livelihood. In livelihood literature, "assets" include 5 types of capital 1-Physical capital

- Infrastructure for shelter

A shelter is a place that covers protects, and provides safety. People need shelters to shield them from extremes of colds and heat, as well as from rain, snow and wind.

- Energy

Energy generally and qualitatively speaking, is the property (or the quantity of the property) of doing things or supplying power. If power is like the strength of weightlifters, energy is like his endurance. Energy is a measure of how long we can sustain the output of power, or how much work we can do.

- Water supply-

i) Domestic use such as sanitation, washing, cooking and drinking,
ii) Productive use for agriculture, livestock, husbandry, vegetable gardening and other enterprises, such as brick making.

- Transport

The system which was forms the basis transaid's work with public service delivery organizations.

- Communication-

i) The activity of communicating, the activity of conveying information.

ii) Something that is communicated by two or between people or groups, iii) A connection allowing access between person or places.

2-Human capital -

- Good health-

i) The state of being vigorous and free from bodily or mental diseases, ii) A state of living without illness, both mental and physical, healthy, translation of gesundheit etc.

Skills-Human skill is also referred to as human relation skills or interpersonal skills are one ability to work effectively with others on a person to person basis and to build up co-operative groups relations to specified objectives. Knowledge-Knowledge as, "a fluid mix of framed experience, contextual information, value of expert insight that provide a framework for evaluating and incorporating new experiences and information.

Labour can be rented (for cash or a share of the produce) or exchanged (e.g. for tasks better carried out by groups, or where human labour is exchanged for the services of plough and ploughman, etc.) These mechanisms allow a better match of labour supply and demand. In many cultures, activities are commonly gender dependent: some being normally done by men and others by women. Particularly, the demand for labour in agriculture is very seasonal. Activities such as land preparation, weeding and harvesting are very labour demanding (especially when done by hand). Conversely, there are times of the year when labour is under-utilized (e.g. during the dry season). Furthermore, the pattern of labour demand during the year may be different for men and women.

Proposed changes to agricultural practices or rural livelihoods are therefore should be more feasible if they utilize labour at slack times of the year (when supply exceeds demand), or if they reduce the labour needed at peak times of the year (e.g. the use of herbicides or mechanization to replace hand weeding). In summary, proposed changes to livelihood systems need to consider how labour demands will be affected, in terms of: How? - Will the proposed change demand more or less labour? Who? - Whose labour will be affected? When? - At what times of the year will labour demand be affected?

3-Natural capital -

- Natural resources of land-Land (and sometimes animals) may be under private, communal or public ownership and/or management. There are many variations on these basic scenarios.

I. Individually owned land may be:

i) Used and managed by the owner;

ii) Rented out, for a fixed amount of money per season or year (common in

many countries); iii) "Share cropped", when the user and owner share the product and input

costs in a defined proportion (common in many countries); etc.

II. Non-individually owned land may be:

i) Managed as a "state farm" or enterprise, when labourers or families are normally given an income for their labour contribution (increasingly such state farms are being broken up to other forms of ownership or management);

ii) Managed as a cooperative by a group of families, when the produce or income is usually shared according to household need or labour contribution (sometimes in individual community groups in other countries);

iii) Allocated to individual families for their use and management for a fixed number of years (e.g. modern China) or a more indefinite period (many countries in Africa);

iv) Limited to a specific group, or open to more general community access for certain purposes, e.g. for grazing, firewood collection (common in many countries of the South).

In recent years, communally managed land is often considered to be particularly liable to mismanagement and degradation. Other trends are towards strengthening local user groups (as in "communal forests"), in order to manage the resources on a more sustainable basis.

4-Social capital -

- Relationships-

A Social relation is a concept in social science referring most generally to a relationship between two or more people, but that relationship can exist without those people actively and deliberately relating, communicating or associating with each other.

Therefore, the concept of a social relation can in fact refer to a multitude of different kinds of social interactions, perhaps regulated by social norms, between people who have a social position and perform a social role. In the hierarchy of sociological concepts, a social relation refers to something more

than behavior, action, social behavior, social action, social contact and social interaction. Social relations form the basis of social organization, social structure, social movement and social system. Individuals are born into a pre-existing pattern or network of social relations, define their identity through social relations, and ultimately cannot service or stay healthy in an isolated way without social relations. On the other hand, if they experience intense pressure from other pecple, this can cause individuals to *withdraw* or try to escape from social relations.

- Networks with other people- are a map of relationships between individuals or organizations. It comprises nodes (usually individuals or organizations) and ties (the connections between them), which may operate at many different levels, ranging from families and close friends to sovereign nations. (v/ w w . q u a n t u m 3 . c o . z a / CI%20Glossary.htm)

Saving

Saving is income minus consumption, algebraically, S= Y-C, Where S is saving, Y is income and C is consumption,

Credit

The assets available to resource poor and -rural households, financial capital -

money - arc often t'ie most limiting. la (Edition to the general scarcity, the

Levels of capital available to an agricultural household also vary seasonally. Money is relatively more plentiful with the sale of produce after harvest, but becomes progressively scarcer during the rest of the year and particularly at the beginning of the following growing season when production investments are needed (e.g. fertilizer, seed, etc).Often debt is accumulated during the year that needs to be repaid at harvest time. Apart from the generally lower prices for produce at harvest, sales of food crops or livestock for debt repayment after one harvest may leave insufficient food stocks to last a family until the next. Changes in livelihood systems often require capital. In such cases, the provision of credit is a vital component of the development strategy. In addition to "formal" sources (banks, government programs), credit is often available though "informal" mechanisms such as family lending, local moneylenders, communal savings and loan associations, etc. The real cost of this capital (dependent on interest rates) and how these credits are managed (affecting repayment rates and hence the long term sustainability of the lending mechanism) are important considerations.

b. Livelihood strategy

Livelihood strategies consist of combinations of activities which Scoones calls 'livelihood portfolios'. These may be highly specialized and concentrate on one or a few activities, or it may be quite diverse, that prepares the people to earn their lives, different 'livelihood pathways' may be pursued over seasons and between years as well as over longer periods, such as between generations, and will depend on variations in options, the stage at which the household is in its domestic cycle, or on more fundamental changes in local and external conditions.

Finally, livelihood strategies frequently vary between individuals and households depending on differences in asset ownership, income levels, gender, age, caste, and social or political status.

c. institutional process & Organizational structure

Institutional processes and organizational structures that link these various elements Livelihood together. A particularly important subject for investigation in this context is what scoones refers to as institutions defines as regularized practices (or pattern of behavior) structure by rules and norms of society which have persistent and widespread use. Institution might be either formal or informal, are often fluid and ambiguous, and are frequently imbued with power. Such institutions directly or indirectly, mediate access to livelihood resources which in turn affect livelihood strategy options and, ultimately, the scope for sustainable livelihood outcomes. An understanding of these institutions, their underlying social relationships, and the power dynamics embedded in these, is therefore vital.The whole issue of livelihood aspect further could be better understood by the following example on CARE.

A brief outline of CARE's livelihoods approach for sustainable development

CARE's emphasis is on *household livelihood security* linked to basic needs. In this view a livelihoods approach can effectively incorporate a basic needs and a rights-based approach. The emphasis on rights provides an additional analytical lens, as do stakeholder and policy analysis, for example. When holistic analysis is conducted, needs and rights can thus both be incorporated as subjects for analysis. This focus on the household does not mean that the household is the only unit of analysis, nor does it mean that all CARE's interventions must take place at the household level. The various perspectives brought to livelihoods analysis contribute to the generation of a range of strategic choices that are viewed more fully during detailed project design.

CARE has used its livelihood approach in both rural and urban contexts. It identified three, not mutually exclusive, categories of livelihood activity appropriate to different points in the relief development spectrum. These are:

- Livelihood promotion (improving the resilience of households, for example through programmes which focus on: savings and credit, crop diversification and marketing, reproductive health, institutional development, personal empowerment or community involvement in service deliver 5 activities). Most livelihood promotion activities are longer-term development projects that increasingly involve participatory methodologies and an empowerment philosophy.

- Livelihood protection (helping prevent a decline in household livelihood security, for example programmes which focus on; early warning systems, cash or food for work, seeds and tools, health education, flood prevention)

- Livelihood provisioning (direct provision of food, water, shelter and other essential needs, most often in emergency situations) These activity categories are non-exclusive. This means that a good livelihood promotion strategy would also have a 'protection' element, which deals with existing areas of vulnerability and helps to ensure that any improvements in livelihood security are protected from re-erosion. Likewise, the aim is that elements of 'protection' and 'promotion' are built in as early as possible to 'traditional relief (provisioning) activities. For instance, institutions established to help with relief activities are set up in a very participatory way. Over time, capacity-building training is provided, so that the same structures can be used to plan and initiate livelihood promotion activities. Cross-cutting with these categories of livelihood support activity are CARE's three focus areas of activity:

- Personal empowerment: interventions focused on expanding human capacity, and hence the overall resource (asset) and income base of the poor.

- Social empowerment: interventions such as education, community mobilization, political advocacy.

- Service delivery: expanding access to basic services for the poor. The transition from livelihood protection to promotion, as well aj the cross-cutting focus areas noted above, are illustrated by the example in Box 1. Relative to DFID, CARE places less emphasis in its framework and approach on structures and processes and macro-micro links. This is not to say that it ignores institutional/organizational factors but that as an NGO it is less involved in the

micro-macro issues that are a key feature of agencies such as UNDP and DFID. In the organizational realm, CARE's work has been largely limited to local matters (e.g. cccnuunity mobilization). Increasingly, thoTi^h, it is seeing local institutional development within a broader democracy and go/criiance agenda. Where this is the case, CARE works with local authorities and relevant national government agencies to legitimise and gain support for democratic, local structures. It is also increasingly involved with advocacy, helping higher level authorities to develop appreciate strategies for working with community groups, etc. This is particularly the care κι ι:ρβρ⊥ι !:ϖ~η'h3od prcjects, as vrb«n areas te:;:Z tc-bs highly politicked and projects n;u>t work closely 'vlth mviucjj,:.! and i;ometime3: ^.ional•governments from the outset.

CARE makes use of various graphics to assist with its application of the livelihoods approach. Its core programming principles are shown in Figure 1. This graphic stresses the dynamic and interactive nature of the programming process as well as the importance of learning so that the household livelihood security focus ensures better overall programme quality. A phased approach is adopted which includes the following steps:

- identify potential geographic areas using secondary data to find where poverty is concentrated;
- identify vulnerable groups and.the livelihoods constraints that they face;
- collect analytical data (holistic analysis
- guided by CARE's overall livelihood model, Figure 2), taking note of trends over time and identifying the indicators that will be monitored; and
- select the set of communities for programme interventions. (these should be similar to other communities to maximize the multiplier effect.)

CARE has developed some specific tools for the livelihoods approach (e.g. a livelihood monitoring survey, participatory learning and action needs assessment and personal empowerment training), but makes flexible use of a variety of existing tools including rapid participatory assessments of livelihoods and baseline surveys. Its aim in using various tools is to gain a multi-dimensional view of livelihood that helps to identify the most vulnerable households and place people's own priorities and aspiration at the centre of the analytic and planning process. It stresses the importance of working with

partners and taking into account cross-sectoral linkages even when working within a single sector.

Conclusion

On the basis of different study it is concluded that poverty is a result of lack of education, opportunity, resources and participation in developmental programmes. Malnutrition, unhealthy condition and lack of proper environment are some of other factors that cause the condition of poverty. To eliminate the poverty not only economical base is important but agriculture, water, health and education should also be considered in mind. At the same time it is essential to identify beneficiaries and their participation in running the project successfully. The experimental project government and private agencies such as CARE & DFID are focused to be successful in this endeavour of poverty reduction.

References

1. *Agrawal, Arun & Clark C. Gibson (1999)" Enhancement and Disenhancement: The role of community in natural resource conservation. World Development, Vol-27.No.-4.*
2. *Chambers, Rabert & Gorden Convey (1992) Sustainable Rural Livelihoods: Practical concepts for the 21th century. IDS Discussion Paper-296, IDS, Brighton, UK.*
3. *DFID (1999) Sustainable Livelihood Guidance Sheets. DFID, London.*
4. *K, Lasse (2001) the Sustainable livelihood approach to poverty reduction, Sida. Mosse & David (1994) Gender and knowledge: Theoretical reflections on the practice of participatory rural appraisal,*

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Relationship of study habits and academic achievements in attitude development of students

Nidhi Sinha*, S.K. Sinha** and Anita Jamuar***

INTRODUCTION :

The present study operationalized the study habits, academic achievements and attitudes of students. The term 'study habits' is a combination of two words 'study' and 'habits' when taking it separately. According to the Goods dictionary of Education study habit is the tendency of a pupil or student's way of studying whether systematically or unsystematically, efficiently or inefficiently. Whereas the academic achievement is the knowledge attained, skill developed in subjects usually designated by test score or by the work assigned by the teacher.

This paper studies the attitude of students towards the subject Home-Science extension. Survey of literature shows that there is ample work done till date on attitude in genera but there is very meagre information or research work available regarding the very contribution of Home-Science Extension. Zimmerman (1969), Anju Prasad (1999) surveyed the relationship of academic achievement, attitude and study habits and find it positive and significant.

The purpose of present study was to measure the students attitude towards the subject and also to identify its relationship with academic achievement and study habits.

OBJECTIVE :

1. to assess attitude of students towards subject Home-Science Extension.
2. to find-out relationship between stu'dy habit, academic achievements and attitude of students.
3. to find-out relationship between academic achievement and various dimensions of study habits.

** Training Associate (Home Sc) SMS KVK, Gaya (RAU).*
*** Head, Department of Extension Education, BVC, Patna-14.*
**** Head Psychology, Govt. Women's College, Gardanibagh, Patna.*

Sample of study : Study was conducted different universities of Bihar. Students studying Home-Science Extension at graduation and post-graduation level were chosen randomly for sampling purpose. Total of 145 students from six different universities were selected with the help of statistical random sampling method.

TOOLS USED FOR STUDY :

a. In order to assess the attitude of students an 'attitude scale' was developed by the investigator himself. The scale was designed to measure attitude of students towards home-science education. In the final list of attitude scale 39 statements were selected and grouped into four components. Thus the finally selected statements according to groups are-

Components	Total no. of statements	Positive statements	Negative statements
Recourses available	**10**	**5**	**5**
Course content	**9**	**4**	**5**
Social feforms	**10**	**5**	**4**
Utility perception	**10**	**6**	**5**
Total	**39**	**20**	**19**

There are 20 positive and 19 negative items included in the scale, and on the basis of obtained attitude score respondents were classified to response their attitude under five heads of strongly agreed, agreed neutral, disagreed and strongly disagreed.

b. Educational achievements refers to the average percentage of marks obtained by the students from first year onward up to the academic year in which they are presently studying.

c. Study habit inventory of Dr. Mukhaopadhya and Dr. D.N. Samson on (1983) was , taken for study the different component of study habit.

Data analysis:

The statistical methods applied were percentage, chi-square test of significance.

RESULT AND DISCUSSION

Attitude of students : Analysis of statements and their responses in terms of percentage reveals very satisfactory result. In order to have a first feel about very objective of study the average percentage of all the scales calculated and presented in table given below :

Table - 1. Average percentage distribution of student's responses.

Particulars	Strongly agreed	Agreed	Neutral	Disagreed	Strongly disgraced
Students	**7**	**7**	**6**	**10**	**9**
Attitude	**(17.9)**	**(17.9)**	**(15.5)**	**(25.7)**	**(23.0)**

The value in above table shows a trend of curvilinear that is humped in central part of scale with careful thought and analysis of situation, it seems correct that respondents fall in higher percentage of disagreed and neutral scale which were the deciding scale. The discouraging point is that the average percentage of disagreed i.e. 25.7 leads towards unfavourable attitude towards subject.

Attitude and study habits :

Study habits involves the time allocation in the daily routine of the students time table.

Table 2. Attitude and study habits of students.

Particulars	Never	1 day/month	Ihr/week	Ihr/day	Total
Unfavorable	6(4.14)	9(6.21)	43 (29.69)	19(13.1)	75(51.8)
Neutral	-	1 (0.69)	16(11.04)	10(6.9)	27(18.6)
Favorable	-	2(1.38)	29(20.01)	12(8.28)	43 (29.6)
Total	**6(4.14)**	**12(8.28)**	**88 (60.72)**	**41 (28.2)**	**145**

It showed that about 60.72 percent of students devote 1 hour in a week on the study of home-science extension education, out of which only 29.67 percent have developed unfavorable attitude and 20.01 percent favorable attitude. It was concluded that peoples who never studied the subject developed more unfavourable attitude towards the subjects.

Attitude and Academic achievements:

In the traditional Universities of Bihar percentage grading system is still adopted for the measurement of students educational achievements.

Table 3 : Attitude and educational achievements.

Particulars	Never	1 day/month	Ihr/week	Ihr/day	Total
Unfavorable	4 (2.66)	8 (5.4)	15(10.3)	48(33.1)	75(51.8)
Neutral	1 (0.69)	5 (3.45)	15(10.3)	6(4.14)	27(18.6)
Favorable	5 (3.45)	7 (4.8)	22(15.1)	9 (6.2)	45 (29.6)
Total	10(6.4).	20(13.8)	52 (35.8)	63 (43.5)	145

Perusal of the table shows that majority of students having lower percentage of marks (33.1%) had unfavorable attitude towards subject. An examination of the table points out that with an increase in educational achievements, score of student's attitude moves from unfavorable to favourable.

Relationship of attitude with study habits and academic achievements :

The chi-square test value at 6 df. And 5 percent level of probability indicates the significant relationship between attitude and academic achievements and non-significant relationship between attitude and study habits.

Table 4. Relationship of attitude with study habits and academic achievements.

Particulars	Co efficient of correlation
Attitude and study habits	8.72
Attitude and academic achievements	29.27*

Thus it could be concluded that the students those who were regular in their studies although spending only one hour in a day or in a week displayed more favorable attitude towards subject than those who concentrate frequently for longs hours in month

just prior to examination. The chi-square value at 6 df and 5 percent level of probability indicates the significant relationship between attitude and educational achievements of students. The educational achievements of students might be one of relevant factors affecting the attitude of students towards subject concerned.

Relationship of academic achievements and study habits : Nine different components of study habbits were chosen for study their relationship with academic achievement of the students. These components were shown in the

table 5.

Table 5. Correlation analysis between Academic achievement and different dimensions of study habits.

Particulars	r-value
Academic achievement and comprehension	0.172
Academic achievement and concentration	0.310*
Academic achievement and task orientation	0.260*
Academic achievement and drilling	0.080
Academic achievement and interaction	0.220*
Academic achievement and supports	0.162
Academic achievement and sets	0.086
Academic achievement and recording	0.072
Academic achievement and language	0.140

** Significant*

Table-5 indicates that out of nine dimensions of the study habits only three dimension indicates positive and significant relationship with academic achievement of the students. These dimensions were concentration (r-value-0.310), task orientation (r-value 0.260) and interaction (r-value 0.220), rest of the six dimensions indicates that there was no significant relationship with academic achievement.

In the quest to improve academic achievement, researcher have studied about the components of study habits which influences the academic achievement. Singh (1984) and Black stone (1994) also studied the study habits of secondary school students as related to their academic achievement and found the relationship to be positive and significant.

Thus, it can be concluded that student's academic achievement had positive role in their attitude development whereas study habits had no significant role in attitudeformation of students. Similarly academic achievement also remains unaffected of the major component of study habits.

Reference

1. *Black stone WJ (1994) A comparative analysis of college academic achievement between graduates of public and private high school. A study of the freshman IPA. Diss. Abs. Int. 55 (9), 2652-A.*
2. *Nandita and S. Tanima (2004) : study habits and attitude towards studies in relation to academic achievement. Psycho Lingua PLAJ 2004, 34 (i): 57-60.*
3. *Prasad A, (1999) Career dynamics of students in agriculture, M.Sc. Thesis R.A.U. PUS A Bihar.*

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Awareness level of Rural Women Regarding Poverty

Ms. Mrunali C. Gaddam*, Dr. Mrs. A.S. Dhoble** Dr. Pravin Charde**

The poor rural women in society constiture of significant client group of welfare professionals. The frequency with which a concern for poverty is expressed both in professional and popular writings has now reach a point where all kinds and all manners of programmes are justified, in the name of eradicating it. Virtually every Government in the third world has committed to do something to abolish the poverty from the society-rural or urban.

Poverty, which may at first glance seem a simple and concerete term, is surprisingly hard to define. Many definitions highlight one or the other of its many dimensions. The outstanding common denominator is the implication of "not enough".

The Poverty was also one of the key factors for the growing suicide rate in the country which is an average 1.15 lakh deaths every year. While 2.548 Poor committed suicide in 2005 the escalated to 2,643 in 2006 and 2,809 in 2007, (Sen. S. 2009)

The present study was carried out with the specific objectives.

1. To study the respondents in respect of their educational level.
2. To find out income level of the sample respondents in the area.
3. To study the problems/ difficulties in respect of getting employment by the respondents.

Methodology:

Two villages i.e. Rajuri and Sindewahi has been selected for collection of the data from Chandrapur district. A sample of 200 respondents were selected on random basis for the purpose of interrogation through interview schedule as a method of data collection.

Result and Discussion:

The following are the results and discussion of the study are presented below:

Table No. 1.1 (Educational level of the respondents)

Educational level	No. of respondents	Percentage
Primary	140	70.00
Middle School	20	10.00
High School	31	15.05
Graduate	09	4.05
Total		
200	100.00	

1. Lecture, Department of Home science Extension Education Sevadal Mahila Mahavidyalaya & Research Academy Sakkardara Chowk umred road, Nagpur.

2. Senior Grade Lecturer Head of Department of Home Science Extension Education Sevadal Mahila Mahavidyalaya & Research Academy Sakkardara Chowk, Umred Road, Nagpur.

3. Dr. Pravin Charde Principal, Sevadal Mahila Mahavidyalaya & Research Academy Sakkardara Chowk Umred Road, Nagpur.

Email: smm-college@yahoo.co.in

On the basis of the data, it can be concluded that out of 200 sample respondents, majority of the respondents (70.00%) had completed their education up to primary level, 15.05 percent had passed high school, 10.00 percent had completed middle school whereas remaining 4.05 percent were found degree holders. Educational level of the respondents of the area were fouond somewhat less.

Table No. 1.2 Monthly income of the respondents

The respondents that earning different monthly income level, which have been group as finder table No. 1.2.

Monthly income	No of respondents	Precentage
Rs. 800 - 1000	11	5.50
Rs. 1100-1300	36	18.00
Rs. 1400-1600	80	40.00
Rs. 1700-1900	54	27.00
Rs. 2000-2200	12	6.00

Rs. 2300-2500	07	
3.50		
Total	**200**	
100.00		

The data grouped in above Table indicated that majority of the respondents 40.00 percent were having income level of Rs. 1400 to 1600, next category observed as Rs. 1700 to to 1900 of 27.00 percent, the income level of Rs. 800 to 1000, which is low ranged by 5 percent.

All the three categories of income i.e. low, middle and high were observed in the respondents, but majority belonged to middle income group.

Table No. 13 Cause responsible for poverty of the respondents

Cause	**No. of respondents**	**Percentage**
lack of education	42	21.00
Lack of social contact	28	14.00
Family condition	60	
30.00		
More members in family	70	
35.00		
Total		**200**
100.00		

Family conditions due to poor condition since a long as replied many of the respondents as a cause behind poverty in family 30 percent, second cause identified as large size family 35 percent, next was cause explain as lack of education 21 percent and at last lack of social contact had been considered as a reason.

Table No.- 1. 4

Knowledge of respondents about government schemes/ programmes of the area:

Responses about schemer/ programmer	**No. of respondents**	**Percentage**
Yes	143	71.5
No.	57	28.5

	Total
200	**100.00**

N = 200

On the basis of the data it can be safely concluded that more than 3/4 of the respondents were having known information about the developmental schemes of the area whereas only 28.5 precent were found unknown about it.

Before implementation of development schemes in the area, the authority concerned should give advance publicity to the scheme so as to receive maximum participation to the programmer, so as to be the peoples programme.

Conclusion:

1. Majority of the respondents (70.00) had completed their education up to primary level.
2. Nearly 40% of the respondents monthly income ranges from Rs. 1400 - 1600
3. The cause responsible for poverty where that there more member in family explained 35% of the respondent.
4. 70% of the respondents had knowledge about the Government schemes or programmers conducted in their area.

References:

1. ***Sachdeva S.K. 2006.*** *Competition success review year book completion review pvt. ltd. 604 Prabhat Kiran, Rajendra Place, New Delhi.P. 727.*
2. ***Scarpiti Frank R. 1999.*** *Social Problems Definition of Poverty Holt, Rinehart and Winston, Inc. New Yark 1974 P.P. 149, 161*
3. ***Sen Somit, Jan 2009.*** *To statement Daily News paper of Nagpur, Rise in Suicide due to job dissatisfaction No. 5 P 6*

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Indian agribusiness oppourtunities issues and challenges

**** Prem Chand***

Indian agriculture contributes to approximately 20 percent of the country's GDP and provides livelihood to almost 67 percent of the population, thus evidencing the agrarian nature of the economy. The positive demographic trends, driving increased consumer demand for high value food products, recent government sponsored scheme and initiatives primarily aimed at attracting private sector participation and investment have enable of much - needed vibrancy and a positive perception of the sector.

The demand side policy goals for Indian agriculture are to provide food & nutrition security and meeting the changing food habiits at national, household and indivisual level. While the supply side policy goals are to bring global compititiveness and ecological sustainability to indian agriculture. The means and the ends to achive these goals are effective linkages of producrion system with processing and consumption, employment generation & poverty alleviation.

Moreover, such economies have comparative advantage in agriculture based industrialization. Thus, agribusiness-led growth has good potential to contribute in sustained economic development of these countries. recent trends in globalization and integration of international consumer market offer further opportunities for development of agribusiness and food industry across the world which would also benefit developing countries, provided they could suitably manage their resources to tap the emarging opportunites. however, the prospective opportunities are also likely to be accompanied by several challenges which will need to be addressed.

This paper aims to explore and map various opportutinies for agribusiness and food industry in india in the internationaly integrated and globalized economic environment, and identify

issues and challenges likely to be faced.

Opportunities in agribusiness

The economic reforms introduced scince 1991 have changed the course of the indian economy and led to its gradual integration with the global economy. The innumerable changes initiated by the government of india are expected to pave the way for the evolution of a globaly compititive Indian agribusiness landscape. Significant among these are , the simplification of the exisiting food laws 9 to reduce redundancies and multiplicities in the certification of foods) and the Amendment of the Agriculture Produce marketing (Development and Regulation) Act (APMC Act) by several State Governments which pertmit the farmers to sell their produce directly to the buyers outside regulated market yards. Such initiatives are expected to rationalize costs across the supply chain by facilitating organized farmer-processor relationships apart from infusing the much nedded corporate investment in the sector.

An agro industry focussed strategy as the core of the next stage of reform process will be politically correct and at the same time, yield rich economic and political dividents. therefore, opportunities to do business with Indian Agriculture are enormous. Some of them are started hereunder.

Post harvest management

On account of poor post harvest management, the losses in farm produce in india have been assessed to be a very high order. Various studies have estimated post production losses in food commodities to the tune of Rs. 75,000-1,00,000crore per annum. Table-1 provides a view of the extent of losses and the monetary value of the post produce in terms of quantity and quality.

Table-1 Post-harvest losses in different commodities.

Type of food	Present level of production			Post-harvest losses		
commodity	Quantity (mt)	avg.price (Rs/t)	Value(Rs.in Crore)	%*	Quantity (Mt)	monetary value (Crore Rs.)
Durable (cereals pulses, pilseeds, etc	230	10,000	230,000	10	23.0	23,000
Seme-perishables (patato,onion,sweet patato, tapioca etc)	40	3000	12,000	15	6.0	1,800
Perishables (fruits, vagetable, milk,meat fish, eggs etc.	210	15,000	315,000	20	42.0	63,000
Total/ Average	480	11,604	557,000	14.8	71.0	87,8000

It is also estimated that the extent of losses could be brought down to less then 50 percent of the existing level on proper transfer and adoption of agro-processing technology. Hence, it would be in the long term interest of the economy to invest in developing suitable infrastucture such as proper grain storage structures, cold stores and processing system to avoid the losses.

Foos processing

Rapid urbanization, increased literacy, changing life styles, more women in the workforce and rising per capital income have led to rapid growth and changes in the demand patterns creating new opportunities in the food processing sector. An average indian spend s about 50 percent of household expenditure on food item. With a population of over one billion and a 350 million strong urban middle class and changing food habits, the processed food market in the country is estimated to growth from Rs. 5300 billion in 2003-04 to Rs. 7800 billion in 2009-10 to Rs. 11,500 billion in 2014-15. The potential for primary processed food is estimated to grow at a rate of 7 per cent while the potential for value-added food is estimated to grow at a rate of 15 per cent. The share of value added products in the processed food consumption is expected to grow from 38 per cent in 2003-04 to 58 per cent in 2014-15.

India's relatively inexpensive but skilled workforce can be effectively utilize to set up large, low cost production based for domestic and exports, exist markets. Key investment opportunities, both for catering to the domestic market as well as for export, exist in many areas of food processing in india. Egg &egg products, meat&poultry, fruits & vegetables and beer & alcoholic drinks are some of the areas such as Technology tie-ups for post hervest technology, bulk storage (including temperature controlled warehousing), bulk handling (including packging) and cold chain facilities. In addition, the inadequate availability of sophisticated production protocols for intermediate products in India also presents an opportunity for US entrepreneurs.

Dairy

Only 15 per cent of the milk produced in India (annual production of approx 90.0 MT) is processed through the organized sector. The per capita availability of milk (229 g per day) is much more than the world average (285g per day) and its consumption is highly skewed towards the urban consumer. Presently, over 46 per cent of the total milk is consumed in the form of liqud milk, 47 percent as Indian dairy products and 7 per cent as western dairy products are among the higest. The dairy sector is expected to witness a growth rate of over

5 per cent of annum, largely on account of the high income elasticity of demand for dairy product in India, changing dietary patterns of the Indian consumer, low farm gate prices and proximity to milk deficit market and the EU Dairy Policy - in 2003 (in line with the WTO) has opened significant trade opportunities for dairy producers.

This is a high potential for manufacturing and marketing of cost competitive world-class food processing machinery. There are also opportunities in the manufacturing of both machinery and packging materials that help develop brand loyalty and a clear edge in the marketing of dairy foods. There are a number of small dairy unit which can not justify capital investment in specialize technology like cheese slicing, dicing line. cheese packaging, butter printing and aseptic packaged fluid products. Investment could be made in establishing centralized state of the art facilities which would be utilized on a contractual basis by such smaller units.

Cold chain infrastructure

The cold chain infrastructure consists of 2 segments viz,. Stationary and transport refrigerations. Though the stationary refrigeration system are comming close to meeting world class stanards with increases in the level of automation, The transport refregeration will have to rapidly develop in order to meet the growing demand. Currently, the transport refregeration is largely fragmented and unorganized, with a few organized players like Snowman Frozen Food, Crystal Roadways , etc. and the transport refregeration equipment is being provided by Ingersol Rand and Carrier refregeration. With the changing life styles, the increasing demand for quality foods and the booming retail industry, the demand for the transport refrigeration is bound to grow a lot.

The stationary refrigeration segment is also highly unorganized with more then 90 per cent of the cold storages woned by individuals . As are results , most of the current cold storages are outdated and are not up to the international standards. A new cold storage are being set up using the latest technology and the old ones are being revemped on a large scale.

The entry of organized players is expected to transform the Indian refrigeration into an intergrated Logistics Management wherein the logistics provider would take care of Storage, Transportation and Distribution. Currently, in India Snowman Frozen Foods is the only player offering complite integrated logistics management services, thus showing a huge potential for investment by foreign companies in this high demand sectors.

Agri-Biotechnology

Offlate, Agri-biotechnology is gaining prominence in India with a focus on transgenic rice, corn, chickpea and several other food crops, in addition to developing different varities of Bt Cotton. According to an estimate, Agri-biotechnology sector registered a growth of over 150 percent in 2004-05 with a value of UD$ 73.3 million. A majority of this (arround 77 percent) was accounted by the Bt Cotton seeds sales and the rest came from bio-pesticides, biofertilizers, etc. According to an estimate, after the introduction of Bt Cotton in India in 2002, the cotton production has increased from 140 lakh to 270 lakh bales in a span of 5 years. India was one of the early movers in the matter of bio-safety laws and policies and adopted bio-safety rules in 1989.

Bio-fertilizers & bio-pesticides is the another in bio-technology to harness the gain. The total market for the bio-pestcides & bio-fertilizers in india is estimated at US$ 17.8 million. The bio-pesticides market is growing at a rate of 25-30 per cent .Conservative estimates show that a 10 per cent saving through the use of bio-fertilizers will result in an annual saving of 1.094 million tonnes of nitrogenous fertilizers costing around US$ 119 million.

Bio Fuels

Around 70 per cent of India's fuel oil requirment is met through imports. It was estimated that even if 1/10th of the oil import could be substituted with bio-disel, it is worth US$ 3 billion pa 2004 oil prices. World's depleting oil reserves, increasing cost of crude oil, and emphasis on sustainable agroindusrtial development demand for an alternative renewable source of energy. Crop residues, bio mass and non-edible oils can be used as sources for production of bio fuels.

The method for obtaining oil from Jatropha through trans-esterification process has been developed and there is need to setup a pilot plant for production of biofuels. The expertise available withUS counterpart would be utilised to strengthen this activity for obtaining bio fuels from non edible oils and for setting up of power generation plants using part of the 700 million tonnes biomass available.

Food retail sector

It is no surprise that rural retail is the latest cynosure and a number of big corporates are making a beeline to have their share of the pie. From tata to the telecom giant Bharti, everyone seems to have realized the potential of agribusiness. on one hand, it is the likes of the haryali Kisan bazar, Tata Kisan

Sansar, Godrej Adhar, ITC Chaupal, Triveni Khushali and other indian ventures, and on the other, there are the biggies of the world retail like The Walmart, Carrefour, Pepsico etc. yet every one seems to be having its won space in the vast untapped market of rural india.

Entrepreneurial opportunities

Entreprenurial is in vogue and now there is worldwide acceptance that the future prosperity hings on the creation of vibrant indigenous business that are deeply rooted in the local economy. For this to occur, there is a need to expand the pool of local entreprenurial talent to develop and manage new business ventures, particularly the agro based business. This aspiration will became a reality only with the effective support structures harnessing the local initiatives and nutring the new agri-based enterprises that are capable of creating sustainable employment.

Further, the ongoing reforms and WTO Entrepreneurship is in vogue and now there is worldwide acceptance that the future prosperity hings on the creation of vibrant indigenous business that are deeply rooted in the local economy. For this to occur; there is a need to expand the pool of local entrepreneurial talent to develop and manage new business ventures, particularly the agro-based business. This aspiration will became a reality only with the effective support structures harnessing the local initiatives and nurtring the new Agri-based enterprises that are capable of creating sustainable employment.

Trade Opportunities

A large part of agricultural trade is between similar countries. Around 70% of developed country trade within developed world, but intra-developing country trade had also grown. Trade in processed and high value food products expanding rapidly (80% of total) and that is intra-industry trade and increasingly oligopolisitc. The importance of trade in processed agricultural products increases at the expense of trade in basis products (processed products trade is 80% of total agricultural trade). trade in processed food products is concerntrated among a few countries (30 developed countries account for 84% of processed food imports).

Indian government has taken some policy initiatives to promote food processing. Such as the Indian government has abolished licensing for almost all food and agro-processing industries expect for some items like beer, potable alcohol & wine s, cane sugar, hydrogenated animal fats & oils etc., and items reserved for the exclusive manufacture in the small scale industary (SSI) sector. Aotomatic investment approval (including foreign technolgy

agreements within specified norms), up to 51 per cent foreign equity or 100 percent for Non-residential Indian and Overseas Corporate Bodies (OCBs), investment is allowed for most of the food processing sector except malted food, alcoholic beverages including beer and those reserved for SSIs. Use of foreign brand names is now freely permited.

Most of the item can be freely imported except for items in the negative lists for imports and exports. Capital goods are also freely importable, including second hand ones in the food processing sector. Wide-ranging fiscal policy changes have been introduced progressively. Excise and import duty rates have been reduced substantially reduced on plant and equipment, as well as on raw materials and intermediates, especially for export production. Corporate taxes have been reduced and there is a shift towards market related interest rates. There are taxes incentives for new manufacturing units for certain years, except for industries like beer, wine, aerated water using flavoring concentrates, confectionery and chocolates processing from the presents 2 per cent to 10 per cent by 2010 and 25 per cent by 2025. An investment of around US$ 28 billion is required in the areas of infrastracture , packaging and marketing to raise the food processing levels by 8 to 10 per cent.

Challenges to Indian Agribusiness

The agribusiness sector of the country through poised for a big leap, it is plugged with a lot of issues and challenges. The country processess a very manager (about 2%) portion of its agricultural produce. Crop losses occur due to unscientific growing techniques, improper post harvesting methods, losses during storage and transportation. The value chain is not fully integrated and there is lack of entrepreneurial attitude in avast majority of the Indian farmers apart from the host of other issues. Few issues and challengesof India agribusiness are as follow.

a) Low productivity of crop as well as livestock is the major concern

b) majority of the farmers are small, resource-poor and need to be inducted in to the new structure responsibly.

c) Indian Farm holding are very small

d) Exisiting Govt. support schemes have inequitable distribution/ led to market distortion.

e) Economies of Scale build up difficult.

f) WTO Challenge

g) Disintegrated value chain

h) Existance of a number of middle men

i) Inequitable price to farmers

j) Inadequate number of qualified agribusiness management professionls

k) Lack of sufficient warehousing and cold chain facilities

l) inadiquate dissemination of benefits of modern technology

In the coming years, one expects the Indian agribusiness sector to became more vibrant and grow steadily. Technologies like precision farming will be adopted in wider scale and Indian farmers will be increasingly driven by the demand aspect. Concept of Agripreneurs will find increasing popularity. In short, agribusiness is all set to explode and indian farming is going to be global.

References :

Godara, ratan (2006). "Rural Job Opportunities Agribusiness Centres - Some realities" , ***Kurukshetra,*** *march, PP. 14-17.*

Kachru R.P. , "Agro-Processing Industies in India - Growth, Status and prospects" Status Farm Mechanization in India PP. 114-126.

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Agricultural development in orissa: A district-wise evaluation

L. D. Hatai

***Corresponding Author*: Assistant Professor (Agril. Economics), College of Home Science, Central Agricultural University, Tura, Meghalaya- 794 005.**
e-mail: ldhatai @ yahoo.co.in

Orissa is primarily an agrarian economy. Agriculture plays a dominant role in the state of Orissa and contributes about 21 per cent of Net State Domestic Product (NSDP) for the state in 2006-07(at 1993-94 prices). It provides direct and in-direct employment to around 65 per cent of the total work force as per 2001 census. Orissa is one of the most agriculturally backward states of India. Agricultural productivity in Orissa is quite low due to traditional farming practices, low use of yield stimulating inputs like HYV seeds, chemical fertiliser, organic manure; uneconomic size of operational holding, incidence of high tenancy, low capital formation and investment in agriculture, inadequate rural infrastructure and services and inappropriate policy environment. Hence agricultural growth holds the key to the overall development of the state by way of creating employment, generating income, providing raw materials to the industrial sector and last but not the least ensuring self-reliance in food production and food security to the deprived sections. An attempt has been made to analyse the agricultural development index (ADI) in different districts of Orissa and to evaluate the relative agricultural development in the districts of Orissa.

Methodology:

Orissa is purposively selected as consisting of 30 districts and there is great inequality among the districts in agricultural system. Secondary sources of data and general information for the candidate variables pertaining to the year 2004-05, for all the districts of Orissa can be obtained from Directorate of Economics and Statistics, Orissa, Bhubaneswar. To depict the district-wise agricultural development disparity scenario, composite Agricultural Development Index (ADI) have been constructed by 'Deprivation Method' by using seven agricultural development indicators, such as Cropping Intensity, Net sown area (% of total geographical area), Average size of operational holdings (ha.), Agricultural labour as

percentage of total rural main workers, Yield rate of Rice (qtls/ha.), Per capita output of Foodgrain (kg/annum) and Consumption of N+P+K fertilizers (in'000MT). ADI is simple, easily understandable and policy relevant tool for evaluating the relative potential for agricultural development within the currently binding data constraints.

$$I_{ij} = \frac{X_{ij} - \min X_{ij}}{\max X_{ij} - \min X_{ij}}$$

The component indices are constructed by using the following formula:

Where Iij = component index for the jth district with respect to the ith variable.

Xij = actual value of the jth district in the ith variable.

min Xij and max Xij are the minimum and maximum value of the ith variable.

After calculating the component indices the agricultural development index is constructed by using the following formula

$$I_j = \frac{\sum_{i=1}^{n} I_{ij}}{\sum_{i=1}^{n} i}$$

Where, I_j = the index of the jth district. Here, equal weights are given to all the indicators.

Results and Discussion:

From the tables, it is revealed that the value of almost all the representative variables displays an enormous variability across the districts since each district has a distinct agroclimatic situation. The ADI ranking indicates that the district having the best condition for agricultural development is Bargarh. This is followed by Kalahandi and Sonepur. On the other hand, the districts having the least desirable condition for agricultural development are Jharsuguda, Kandhamal and Angul. It can be noted that the districts with the lower ADI ranks are often described as backward district in terms of agricultural system. Similarly, the districts with the better ADI ranks are the advanced in agriculture. It is the districts with poor condition of agriculture i.e. those ADI of less than 0.4 that should be receiving the top priority in agriculture. The bottom 10 districts requiring the most immediate policy attention for agricultural development. These districts are Jharsuguda, Kandhamal, Angul, Sundargarh, Baudh, Deogarh, Malkangiri, Dhenkanal, Nayagarh, Bolangir, Khurda. Jharsuguda is the only district having sliding or worsening agricultural development index over the reference time period.

Conclusion:

The policy relevance of the ADI approach emerges from the fact that it helps not only to establish inter-district priority for the allocation of agricultural development but also to priorities programmes and projects relevant to each district. For accelerating agricultural growth of the state public investments in agriculture sector need to be stepped up substantially. Keeping in view the importance of agriculture in creating employment, generating income and ensuring self-sufficiency in food production, share of agriculture in total plan outlay needs to be enhanced.

Reference:

1. *Government of Orissa (2005) Statistical Abstract of Orissa, Directorate of Economics and Statistics, Bhubaneswar.*
2. *Hatai, L. D. and Sen, C. (2008) An Economic Analysis of Agricultural Sustainability in Orissa,*
3. *Agricultural Economics Research Review, Vol. 21 (2): 273-282.*
4. *Rath, B. and Jena, P. R. (2006) Growth determinats of Orissa and their implications for future*
5. *development of the state, Indian Journal of Agricultural Economics, Vol. 61 (2): 200-217.*
6. *Swaminathan, M. S. (1991) From Stockholm to Rio de Janeiro: The Road to Sustainable Agriculture,*
7. *Monograph no. 4, M. S. Swaminathan Research Foundation, Chennai, India.*

Table:1 The candidate variables selected for Agricultural Development across the 30 districts in Orissa

Agricultural Development

Sl. No	Districts	Cropping Intensity (%)	Net Sown Area (% of total geographical area)	Average size of Operational Holdings (ha)	Agricultural Labour (% of total rural main workers)	Yield rate of Rice (qtls/ha.)	Per capita Output of Foodgrain (kg/annum)	Consumption of N+P+K fertilizers (in000MT)
1.	Angul	156	35.15	1.19	28.15	4.11	51	6.50
2.	Balasore	135	66.12	1.15	32.98	15.60	189	24.54
3.	Bargarh	128	56.85	1.62	41.66	12.11	271	39.46
4.	Bhadrak	124	66.42	1.2	28.84	14.69	191	20.76
5.	Bolangir	124	47.79	1.43	40.25	3.58	71	9.24
6.	Baudh	134	23.19	1.40	39.7	5.28	107	2.55
7.	Cuttack	176	47.45	1.15	22.96	12.12	85	10.03
8.	Deogarh	132	24.46	1.48	43.92	4.26	82	2.10
9.	Dhenkanal	144	41.96	1.29	34.29	5.87	75	4.66
10.	Gajapati	152	19.48	0.98	45.21	17.81	157	4.13
11.	Ganjam	144	45.12	0.98	38.43	12.10	115	30.83
12.	Jagatsingpur	185	50.25	1.19	25.42	13.38	124	6.66
13.	Jajpur	166	57.44	1.41	30.33	7.97	74	13.61
14.	Jharsuguda	122	32.73	1.24	24.58	3.97	49	8.01
15.	Kalahandi	129	42.58	1.74	50.32	12.88	276	20.15
16.	Kandhamal	141	15.95	1.27	36.01	7.78	84	0.60
17.	Kendrapada	176	51.37	1.31	25.45	10.02	108	7.83
18.	Keonjhar	140	34.22	1.18	36.38	10.44	147	8.67
19.	Khurda	161	44.98	0.93	16.40	15.36	99	6.21
20.	Koraput	130	36.71	1.65	40.24	14.94	226	6.55
21.	Malkangiri	121	21.97	1.74	26.01	6.85	147	3.96
22.	Mayurbhanj	117	38.20	1.24	38.51	11.58	183	13.20
23.	Nabarangpur	128	37.81	1.25	52.38	11.31	220	11.74
24.	Nayagarh	150	29.25	0.92	32.76	11.52	138	6.05
25.	Nuapada	118	49.27	1.77	44.79	3.01	69	4.07
26.	Puri	165	49.18	0.96	25.06	12.49	121	10.92
27.	Rayagada	136	21.64	1.50	45.98	10.52	124	4.92
28.	Sambalpur	124	25.37	1.65	31.94	7.19	109	17.60
29.	Sonepur	156	45.3	1.36	44.96	13.01	253	6.43
30.	Sundargarh	129	30.28	1.55	29.78	5.45	75	7.23

Source: Directorate of Economics and Statistics, Bhubaneswar, Orissa (2004 -05)

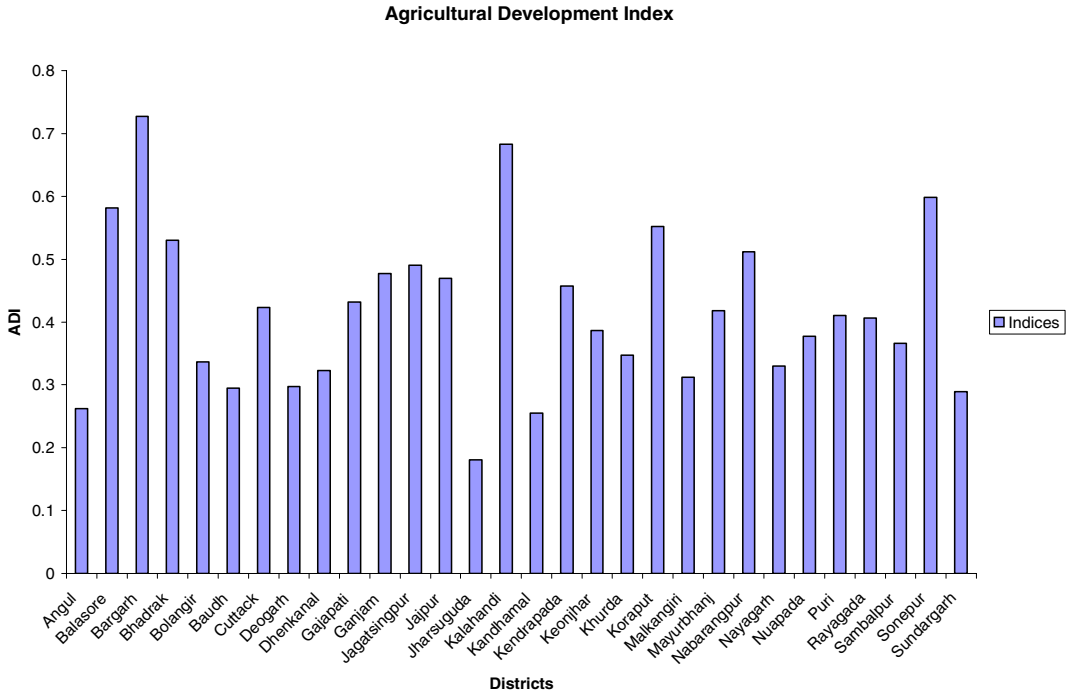
Table:2. Individual Indices to Capture Agricultural Development Indices for the 30 Districts in Orissa

Agricultural Development Index (ADI)

Sl. No	Districts	Cropping Intensity Index	Net sown area Index	Average size of Operational Holdings Index	Agricultural Labour Index	Yield rate of Rice Index	Per capita output of Foodgrain Index	Consumption of N+P+K fertilizers Index)
1.	Angul	0.5735	0.3804	0.3176	0.3265	0.0743	0.0088	0.1518
2.	Balasore	0.2647	0.9940	0.2705	0.4608	0.8506	0.6167	0.6160
3.	Bargarh	0.1617	0.8103	0.8235	0.7020	0.6148	0.9779	1
4.	Bhadrak	0.1029	1	0.3294	0.3457	0.7891	0.6255	0.5187
5.	Bolangir	0.1029	0.6308	0.6	0.6628	0.0385	0.0969	0.2223
6.	Baudh	0.25	0.1434	0.5647	0.6475	0.1533	0.2555	0.0501
7.	Cuttack	0.8676	0.6241	0.2705	0.1823	0.6155	0.1585	0.2426
8.	Deogarh	0.2205	0.1686	0.6588	0.7648	0.0844	0.1453	0.0386
9.	Dhenkanal	0.3970	0.5153	0.4352	0.4972	0.1932	0.1145	0.1044
10.	Gajapati	0.5147	0.0699	0.0705	0.8007	1	0.4757	0.0908
11.	Ganjam	0.3970	0.5779	0.0705	0.6122	0.6141	0.2907	0.7779
12.	Jagatsingpur	1	0.6796	0.3176	0.2506	0.7006	0.3303	0.1559
13.	Jajpur	0.7205	0.8220	0.5764	0.3871	0.3351	0.1101	0.3347
14.	Jharsuguda	0.0735	0.3324	0.3764	0.2273	0.0648	0	0.1906
15.	Kalahandi	0.1764	0.5276	0.9647	0.9427	0.6668	1	0.5030
16.	Kandhamal	0.3529	0	0.4117	0.5450	0.3222	0.1541	0
17.	Kendrapada	0.8676	0.7018	0.4588	0.2515	0.4736	0.2599	0.1860
18.	Keonjhar	0.3382	0.3619	0.3058	0.5553	0.5020	0.4317	0.2076
19.	Khurda	0.6470	0.5751	0.0117	0	0.8344	0.2202	0.1443
20.	Koraput	0.1911	0.4113	0.8588	0.6625	0.8060	0.7797	0.1531
21.	Malkangiri	0.0588	0.1192	0.9647	0.2670	0.2594	0.4317	0.0864
22.	Mayurbhanj	0	0.4408	0.3764	0.6145	0.5790	0.5903	0.3242
23.	Nabarangpur	0.1617	0.4331	0.3882	1	0.5608	0.7533	0.2866
24.	Nayagarh	0.4852	0.2635	0	0.4546	0.575	0.3920	0.1402
25.	Nuapada	0.0147	0.6601	1	0.7890	0	0.0881	0.0892
26.	Puri	0.7058	0.6584	0.0470	0.2406	0.6405	0.3171	0.2655
27.	Rayagada	0.2794	0.1127	0.6823	0.8221	0.5074	0.3303	0.1111
28.	Sambalpur	0.1029	0.1866	0.8588	0.4319	0.2824	0.2643	0.4374
29.	Sonepur	0.5735	0.5815	0.5176	0.7937	0.6756	0.8986	0.1500
30.	Sundargarh	0.1764	0.2839	0.7411	0.3718	0.1648	0.1145	0.1706

Table:3 The Relative Agricultural Development Indices in Orissa

Sl. No.	Districts	Agricultural Development Index	Rank
1.	**Angul**	0.2618	28
2.	**Balasore**	0.5819	4
3.	**Bargarh**	0.7272	1
4.	**Bhadrak**	0.5302	6
5.	**Bolangir**	0.3363	21
6.	**Baudh**	0.2949	26
7.	**Cuttack**	0.4230	13
8.	**Deogarh**	0.2973	25
9.	**Dhenkanal**	0.3224	23
10.	**Gajapati**	0.4317	12
11.	**Ganjam**	0.4772	9
12.	**Jagatsingpur**	0.4907	8
13.	**Jajpur**	0.4694	10
14.	**Jharsuguda**	0.1807	30
15.	**Kalahandi**	0.6830	2
16.	**Kandhamal**	0.2551	29
17.	**Kendrapada**	0.4570	11
18.	**Keonjhar**	0.3861	17
19.	**Khurda**	0.3475	20
20.	**Koraput**	0.5518	5
21.	**Malkangiri**	0.3125	24
22.	**Mayurbhanj**	0.4179	14
23.	**Nabarangpur**	0.5119	7
24.	**Nayagarh**	0.3301	22
25.	**Nuapada**	0.3773	18
26.	**Puri**	0.4107	15
27.	**Rayagada**	0.4065	16
28.	**Sambalpur**	0.3663	19
29.	**Sonepur**	0.5986	3
30.	**Sundargarh**	0.2890	27


Agricultural Development Index
ADI
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Indices
Angul
Balasore
Bargarh
Bhadrak
Bolangir
Baudh
Cuttack
Deogarh
Dhenkanal
Gajapati
Ganjam
Jagatsingpur
Jajpur
Jharsuguda
Kalahandi
Kandhamal
Kendrapada
Keonihar
Khurda
Koraput
Malkangiri
Mayurbhanj
Nabarangpur
Nayagarh
Nuapada
Puri
Rayagada
Sambalpur
Sonepur
Sundargarh
Districts

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Stakholders' participation and empowerment in rural development : Some thoughts

Sarthak Chowdhury* Chandan kumar panda** & Tribijayi Badajena***

KEW WORDS - Participation, empowerment, rural development, rural infrastructures,

Institutional reform etc..

* Sarthak Chowdhury, Professor in Agril. Extension

Department of Agricultural Extension, Agricultural Economics and Agricultural Statistics, Palli Sikha Bhawan (Institute of Agriculture), Vista-Varti, Sriniketan, P.O.- Sriniketan, Dist - Birbhum, West Bengal, India, pin- 731236

e-mail - sarthak_chowdhury1@rediffmail.com

Phone No.- 03463-264506 (O), 03463-261694 (R), 9434348316 (M)

** Chandan kumar Panda, Assistant teacher

Dakshin Moyna high school(Higher Secondry)

P.O.- Dakshin Moyna, Dist.-Purba Medinipur, West bengal, PIN- 721629

E-mail - panda_ck50@rediffmail.com, phone Number - 09732722875(mobile)

*** Tribijayi Badajena, Surveillance inspector

Dean research, OUAT, Bhubaneswar

INTRODUCTION :

Government of developing and underdeveloped nations are facing new extension challenges: meeting the need to effort food for all including for animal resources, rising rural people income and tackle poverty among rural as well as urban areas, and sustainably managing natural resource (both biotic and abiotic). These critical challenges subsist in a rapidly changing world. Globalization, Privatizing, new technologies, changing need of people, the new relationship developing between the public and private sectors, conformation between socialist patter of governance and capitalised pattern of governance , the multi-disciplinary nature of agriculture, heterogeneity between and within countries, the geographic distribution of rural people all these realities are putting new stress on developing countries in

there efforts to prosper. Different sponsoring agencies working in developing and under developed nations are imposing certain terms and conditions before sanctioning any lone or assistance and some cases these nations are not in position for accepting these terms and conditions. Decentralization of power in most developing, under developed nation are not well distributed which promote regional imbalance in some nation. People of some region perceive that they are deprived and betrayed by their won nation which make it impossible to keep faith by them in new development programme of their our goverment. Constraints in different aspects are not uncommon in rural areas and the consequence of these restrictions are directly related to the life of rural people. Any programme launched for them by the government or any development agencies may not be succeeded unless the rural people themselves participate in the programme. Local people participate in the programme where they must have say in relation to the planning and implementation of the programme i.e. they should be empowered in the process of development.

The empowerment of rural people is a continuous process with their whole hearted participation. The concept of stakeholders' participation is an integral part of the concept of rural development, peoples participation in construction of roads, wells, irrigation, channels, schools, house etc. either voluntary or involuntary with external assistance and latter one is more predominant as compare to previous one. Government of India had taken number of rural development programmes like - Community Development Programme(1952), Intensive Agriculture District Programme (1960), Intensive Agriculture Area Programme (1964), High Yielding Variety Programme (1966), Drought Prone Area Programme (1970-71), Training and Visite(1974), Agriculture Refinance Development Programme (1975), Desert Development Programme (1977-78), Food for Work programme (1977-78), Integrated Rural Development Programme (1978-79), Traning of Rural Youth for Self Employment (1979), National Agricultural Extension Project (1983), Farmer Agriculture Service Centre (1983), Rural Landless Employment Guarantee Programme (1983), District Rural Development agency (1993), Swarna Jayanti Gram Swarojgar Yojana (1999), Bharat Nirman Programme (2005), National Food Security Mission (2007) etc.

Though so many rural development programmes had taken by Government of Indias but still about 29 per cent (i.e. more then 200 million)

people are bBelow Poverty line (BPL). Rural poverty declined at 0.73% per year over the period 1993-2005, down from 0.81% in 1983-94. In addition 46% of rural children under five, 40% adult women and 38% of adult men are underweight (compared to 33%, 25% and 26% for urban); 59% are small and marginal farmers and landless labourers who depends on agriculture for their livelihood. Two-thirds of agricultural labourers are women. Though contribution of agriculte in national GDP declining but rate of dependance on agriculture as livelihood is decreasing very slow. Further climate change has further aggravated the agriculture scenario of India along with other developing and under developed countries. Developing countries , many of which have average temperatures that are already near or above crop tolerance levels, are predicted to suffer an average 10-25 percent decline in agricultural productivity by the 2080s. Rich countries, which typically have lower average temperatures, will experience a much milder or even positive average effect, ranging from an 8 percent increase in productivity to a 6 percent decline. Individual developing countries face even larger declines. India, for example, could see a drop of 30 to 40 percent. Analysts sometimes argue that technological change in agriculte will boost yields so much by late this century that any losses to global warming would be easily managed. But that the pace of the green revolution has slowed, with annual global yield gain falling from 2.8 percent per year in the 1960s to 6.1 percent in the past quarter century. Population growth further exacerbate the situation as India occupies 2.04% of the world's land area, but it supports over 16% of the world population.

Programmes taken in past have to be modified with the study of long term environmental effect of these programmes or projets. But here one vital point should be mentioned that some resources are mutually utilized by cross boarder. So, international co-operation and treaties are essential to protect and sustainable use of this cross boundaries resources. Micro level planning along with national objective and international protocol/treaties are the need of this time. Micro level planning and execution of programme necessitate local participation and empowerment of people. It is being gradually appreciated by policy makers, planners, administrators and doner agencies that until and unless the rural people can participate in rural development programmes, such programme, administered by outside agencies remain 'exogenous' to rural community which can adversely affect the result of such programmes. So, in this people centred development approach;

the relationship between participation and empowerment is widely recognized. Participation promotes - peoples close involvement in economic, social, cultural and political process that affects their lives (UNDP,1993); it is an active process by which beneficiaries influence the direction and execution of a development project with a view to enhancing their well being in terms of income, personal growth, self-reliance or other values they cherished (paul,1986); participation in development is bottom - up participation (Wignaraja,1991). It appears that much ambiguity surrounds nations of 'empowerment'. Empowerment is a term which is widely used but not properly defined. Karl (1995) explained that "Empowerment is a multi faceted process, involving the pooling of resource to achieve collective strength and countervailing power, and entailing the improvement of manual and technical skills,administrative, managerial and planning capacities, and analytical reflective abilities of local people". Empowerment is the key aspect of participation as it increaves influence and control in ongoing programme (UNDP's Human Development report,1993), and liberate rural people from oppressive situations and help to determine their own destiny. There are several reasons why it is desirable for local participation and empowerment in development programmes (Van den Ban and Hawkins, 1996) :-

1. They have information, which is crucial for planning a successful extension programme, including their goals, situation, knowledge and experiences with technologies and with extention and of the social stucture of the society.

2. They will be more motivated to cooperate in the extention programme if they share responsibility for it.

3. In a domestic society like hours, it is normaly accepted that the concerned beneficiaries have the rights to participate in decision making about the objectives to be achived.

4. Many agriculture and rural development programmes such as reclamation, pest management, sustainable agriculture and organization of a commercial approach to agriculture can no longer be solved through individual decision making. Participation of the target group in collective decision is required.

Participation can be considered as a product (end) as well as a process (means). As a product, the act of participation is an objective in itself, and is one of the indicators of success as it refers to the empowerment of individuals and communities in terms of acquiring skills, knowledge and experience, leading to greater self-

reliance. However, when viewed as a process, participation refers to the action used to achieve a stated objective, i.e. co-operation and colaboration which help to ensure sustainability of programme/project/development. Needs of rural people vary according to their place of living, value system,religion, norms, agro-climatie zone etc. So it is imperative to know different types of participation as identified by (Anandajayasekeram et al.2008)-

Functional participation-- to get something useful accomplished

Empowering participation-- to give a community a greater decision-making role

Capacity building participation-- to enhance the skill of the community

Contractual participation--to provide specific services

Consulltative participation--to get information

Collaborative participation--work as partners

Collegial participation--to strength farmer research

Passive participation--where most decisions are made by outsiders; mostly one way communication between outsiders and local people

Active participation--where there is two way communication; people get an opportunity to interact with outsiders

Participation by subcription--where the local people are given an opportunity to subscribe to the project and in turn receive some benefits from the project Participation based on local request--demand driven approch where planned activities respond to the needs expressed by local people.

Diffferent type of participation arises due to the methods of operations of varied parogrammes, as well as the communities' perception, value system, thoughts,norms, thinking regional variations etc. Most cases passive participation is profound due to mode of application of development programmes. Through hundred percent success of any programme may not be expected, but success rate in most cases is below fifty percent. Development in science and technology has always effect on mind set of people and also their wants as a result existing agricultural extention organizations are grappled between the legacy of the T&V scheme (Benor and Harrison 1977) and the demands for new, more participatory approaches that respond better to actual needs of clients. This situation has several dimensions, in terms of organizational structure and culture, partnership, and finances. Basic problems of centrally

managed, highly bureacratic extension agencies include: a lack of accountability to clients and a top-to-down orientation towards technology transfer (Feder et al. 1999). Before going to participation and empowerment of rural community need (a) create opportunities for interaction; (b) seek agreement on tasks; (c) cultivate mutual respect, (d) have common goals; (e) promote understandings of interdependence; and (f) perceive the other as partners not as compititors; and (g) seek to have personal benefits outweigh costs (Okali et al. 1994). A rural people who has participated in the development process sees the connection in life as no one is an island and that no action occurs in a vacuum, each person is connected to other families, communities, religious denominations, political commitments, personal tastes, and so on as well as work. These connectivities must be utilized for group cohesion and thereby convinces to participate in rural development programme combinedly. Once an indivisual decides to worlk together, the process of paricipation becomes easy and sustainable. Individual preparedness' must be combined with institutional commitment and readiness to harness the process participation and empowerment of rural stakeholders. This entails fostering a balance of power (1) among the various tiers of government (central, state, regional, provincial, governorate, district and muncipal), (2) between the public and private sectors, and (3) between government and associations, including organized citizens. A balance of power of this kind does not yet exist in most developed countries, and must be explicitly set out in the agenda of development goals. A balance-of-powers vision involves a more equitable and broadlybased set of national development players, and is the premise on which contemporary policy-driven strategies need to be built. Division of responsibility is needed and should constitute the long-term overall vision and purpose of reform (Rivera 2001). Policy reform in institutional level must address following facts (AGRITEX 1998)-

- It should integrates community mobilization for planning and action with rural development, agricultural extention and research.
- It should promote equal partnership between farmers, researchers and extention agents who can all learn from each other and contribute their knowledge and skill.
- It must strengthen rural people's problem-solving, planning and management abitilities;
- It should promotes farmers' capacity to adopt and develop new and appropriate technologies/innovations;

- It must encourage farmers to learn through experimentations, building on their own knowledge and practices and blending them with new ideas, in other words, 'action reflection'or 'action learning';and
- It should recognize that communities are not homogeneous but consists of various social groups with conflicts and differences in interests, power and capabilities.

Each groups then makes its collective decisions, and also provides oppourtunities to negotiate between groups.

The reforms mentioned here are based on an increasingly extensive menu of options that challenge each country. Because, at present situation extension systems should be much broader and more diverse, including public and private sector and civil society institutions that provides a broad range of services on a wide variety of subjects. Reform must encourages wider participation in providing resource support and control of the extention programme in stakeholders' niche. It creates complementarity and synergy in the use of resources for extention by different donors, which are recognized as part of the pluralistic extention policy. It lessens the resource burden upon the central government, or on a single agency, or on the private sectors or on farmers themselves. Grassroots associations, the NGO sector, farmers' associations are major stakeholders in the process of participation and empowerment. The immediate challenge is how to help each country to identify the right mix of extension institutional reforms and approaches to be able to operate more effectively under global perspective. Again, institutional reform for rural infr astructural development like roads, electrification, education, information technology, co-operatives, may harness the process of participation and empowerment of rural people.

References

AGRITEX (Department of Agricultural, Technical and Extention Services, 1998)

1. *Learning together through participatory extention: A guide to an approach developed in Zimbabwe, AGRITEX, Harare, Zimbabwe.*
2. *Anandajayasekeram P, Puskar R, Sindu Workneh and Hoekstra D. (2008) Concept*

and practices in agricultural extention in developing countries: A source book, IFPRI (International Food Policy Research Institute), Washington, DC, USA,and ILRI (International Livestock Research Institute), Nairobi, Kenya, pp 5-12.

3. *Feder, G.; Willett, A. and Zijp, W. (1999), Agricultural Extention - Generic challenges and some Ingridents for Solutions, World Bank Policy Research Working papers No.2129, Wasington DC.*
4. *Okali, C.; Sumberg, J. and J. Farrington (1994), Farmer participatory research; Rhetoric and Reality, London: Intermediate Technology Publications.*
5. *Benor, D. and Harrison, j. (1977), Agricultural Extention: The Tranning and visit System, Wasington, DC: The World Bank.*
6. *paul,S. (1986), Women and Empowerment : Participation In Decision Making, Zed Books, London, p.15*
7. *Rivera, W.M. (2001), Agricultural and Rural Extension Worldwide : options for institutional reform in the Developing Countries, FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, reme, PP. 30-33.*
8. *Van den Ban, A.W. and Hawkins, H.S. (1996), Agricultural Extension, Blackwell Science Ltd. London.*
9. *Wignaraja, P. (1991), Towards participatory Development, Oxford Press, P. 202 U.N.D.P(1993) Human Development report.*

Journal of Extension Education

Promotion of Ornamental Fish Production through Women's Participation

P.K.Sahoo, H.K.Dash, J.Biswal

Introduction

Ornamental fishes, also called 'Living jewels', are objects of high aesthetic value for human beings all over the world. The global trade in ornamental fishes is estimated at $5 billion. But India, with a rich diversity and potential, has only less than 1% of share in global trade. Looking at the potential of ornamental fish production in the country and the global prospect, Marine Products Export Development Authority (MPEDA) has embarked upon a plan to usher in what is christened as 'rainbow revolution' by providing technical and financial assistance. Considering the employment potential of the sector, government departments and institutions too are sponsoring projects for disseminating technical-know how in rural areas. Because of the flexibility in investment and resource ornamental fish production is slowly gaining importance as a livelihood option for rural poor in several regions of the country. The technology has been perceived as a women friendly income generating option because of its indoor activity and less labour intensiveness. In addition with small level of investments the activity has shown to be a potential money-spinner, providing continuous income to the farmers as those of milking cows. Possibility of establishing ornamental fish units from small-scale cottage units to large-scale enterprises, depending on the investment capacity and with scope of adoption of a few inexpensive varieties to numerous expensive lots makes the ornamental fish farming a technologically sound, economically viable option for different category of farmers.

.

Methodology

Looking at the scenario, the Directorate of Research on Women in Agriculture, Bhubaneswar, as a part of its activities to bring technological empowerment of rural women, undertook transfer of

** Directorate of Research on Women in Agriculture, Bhubaneswar - 751003*

ornamental fish production technology to 38 women in seven villages from two blocks (Nimapara block of Puri and Balianta of Khurda district) of Orissa under a DBT sponsored project (2004-07).

SWOT analysis

A SWOT analysis of the situation involving different stakeholders was undertaken to assess the technology in women perspective. The out come of the analysis are;

Strength: The technologies of ornamental fish production are well standardized and available with fisheries research and development institutions. The venture can be initiated at small scale with a low investment. Like other aquaculture activity it does not require ponds or other water areas. It requires a minimum area of about 80-100sqft to establish a unit and hence, is suited to homestead of households which make supervision easier and women can feel comfortable to take up it along with their household chores. . Moreover, short production cycle of most of the fishes can bring in regular income to the producers. MPEDA is also offering required support to interested parties for entrepreneurship development in ornamental fish production.

Weakness: It requires technical skill to handle the ornamental unit and women's access to the technology is less. So lack of awareness on the subject, location of the villages, lack of developed communication between villages and urban centres, market facility were some of the factors that were loaded against the success of the activity.

Opportunity: Spread of urbanization, awareness and education, increasing demand for sources of entertainment and happiness, development of new belief systems are likely to increase the demand for ornamental fishes both within the country and outside. Easy availability of micro finance facilities, favourable government policies offer good opportunity for unemployed youths and women.

Threat: There are also some threats to the success of the venture. Improper handling and feed and water management can lead to mass mortality. Since the fishes are to be marketed live, lack of proper packing and transportation are working against the success of the entrepreneur. Disease out break, predation are also great threat for sustainable production.

Technology options for ornamental fish production

Ornamental fishes are grouped into two groups basing on their breeding behaviour i.e. Live-bearers and egg layers. Livebearers give birth to well

developed young ones. Egg layers are those which lay eggs in water during the breeding season and the male releases milt close to the egg. The eggs are thus fertilized outside the body of the female, which is called external fertilization. Hatching of larvae takes place after few hours of incubation, which differs from species to species. Livebearers are very easy to handle, but fetch low price. On the other hand, women need to gain skill to handle the breeding of the egg layers which otherwise have good market value.

During orientation of women, available technology options were discussed. Two immediate options were construction of cemented tanks and purchase of FRP tanks for breeding and rearing of fishes. But the two options were not accepted by women due to reasons such as:

- Difficulty in developing or procuring the tanks
- Inability of women to bear the relatively high cost involved
- Space constraints with the household

Therefore, to overcome the problem and create interest in women, an alternate strategy was adopted. In stead of cemented or FRP tanks, low cost and locally available earthen tanks of 60-70 litres capacity were tried. These tanks prepared by pot makers in villages, are normally used by women for soaking paddy in parboiling process. Suitable modifications were made in the tanks to facilitate management practices. To prevent possible overflow of water from the tank, 3-4 holes of about 1.5-2.0 cm diameter were made at about 1-2 inches below the brim during the construction of the tanks and fitted with pipes to allow draining out of excess water. This not only proved cost effective but also helps in removing the hindrance to introduce the technology to rural area.

Selected women were given good exposure to ornamental fish variety and their management practice through training and exposure visit. To begin with, live bearers like guppy, platy, molly and swordtail were introduced. Once the women got acquainted with the handling of small fry, managing the water quality and feeding of the fishes at different stages, slowly egglayers like rosy barb, gouramis and gold fish were introduced. In each unit one live-bearer and one egg layers were maintained. The logic behind the selection of the variety was that the live bearers could provide immediate and continuous return and the egg layers would give better return.

Support services provided

Under the project, the following services were made available to the women participants for developing ornamental production units.

- Earthen pots, brooders, nets, and other critical inputs like feed and medicine were supplied
- Orientation on different types and species of ornamental fishes; training on different aspects of ornamental fish production such as brood stock management, larval care, collection and production of natural feeds like tubifex, zooplankton, feed and water managements and management of production units; exposure visits to production centres and market were organized for Capacity building of women
- Technical guidance was also provided as and when required

Outcome

Extension efforts generated positive responses and motivated women to participate in this new activity. Ten (10) units, each unit with 10-12 earthen tanks, were developed in different localities and production of ornamental fishes started which was entirely a new concept for the women as well as to the locality.

Marketing strategy under the project

Efficient marketing of produces has become an important determinant of success of enterprises and so the adoption of technology. Fluctuations in market conditions and unethical marketing practices often rob the producers of a profit from an otherwise good production. Under the project too, even as production units could be established successfully, women had the problems of marketing ornamental fishes. Different marketing strategies were tried to overcome the situation.

Model-1: Linking women producers to the market through retailers

a) Action

Participating women were taken on exposure visits to ornamental fish market in Bhubaneswar. Interfaces between women producers and retailers were also arranged. Women producers not only got an opportunity to develop acquaintance with retailers, but gained knowledge about different ornamental fishes, places of procurement and their market prices. An understanding was also reached on the prices to be paid by the retailers to the women for purchasing different species of ornamental fishes.

The arrangement worked nicely for sometime. Women could sell the fishes to the retailers at prices as agreed upon. However, the arrangement was not sustainable due to several reasons.

b. Constraints

Women producers from their side had the constraints like difficulty in traveling long distances (up to 50-60 km) between villages and market to and fro, spending long hours and risk of mortality during marketing process. At the same time they had also to face the constraints created by the retailers. Delay in settlement, pressure tactics like sending back their consignments siting various reasons, offering low prices, selectivity in accepting fishes were some of the constraints created by middlemen that discouraged women producers. Moreover, as the retailers had assured sources of supply from places outside state, particularly from Kolkata and Chennai, they did not show due importance to the women and very often ignored the consignments sent by them.

C. Outcome

In absence of a suitable marketing outlet, inventories i.e. quantum ornamental fishes, with producers increased manifold creating space constraints. While many fishes died due to over-crowding, women had to disposed off the fishes here and there incurring losses. All these developments dampened the spirit of women producers and led to slow down the units.

Model-2: Linking women producers to an established entrepreneur in the locality

a) Action

Following discouraging outcomes from earlier model, a prospective and established entrepreneur was identified to provide a viable marketing channel to the producers. Meetings were arranged between women and the entrepreneur.

An informal agreement was reached to maintain the supply and demand streams. A mechanism was worked out for pricing of ornamental fishes. Under the mechanism;

- the entrepreneur offered a price 20-25% lower than the prevailing price in Bhubaneswar for different fishes and would collect fishes from the units
- Prices were subject to monthly review by both the parties
- Dues were settled on weekly and fortnightly basis

The arrangement worked for about six (6) months and women producers could get more income from their units than what were getting in earlier model. The arrangement also brought in good dividend to the entrepreneur as he could successfully meet demands from outside during peak periods.

b) Constraints

Problems cropped up after six months of smooth working of the model. With increasing output from the units, supply situation of ornamental fishes improved considerably. But the entrepreneur-middleman had a difficult situation to cope with. The chain of reactions that followed is;

- Difficulty in maintaining increased volume of inventories due to space constraint
- Off take from units reduced as fishes could not disposed off in the market
- In the face of increasing size of inventories, the entrepreneur offered low price to the women producers and was irregular in collecting fishes
- Irregular settlement and low price created mistrust between parties

c) Outcome

The breakdown of the mechanism led to drop in income of producers, slow down of production units and closure of two units.

Model -3: Networking and Pivoting

Following discouraging outcomes of the second model, another model called 'networking and pivoting' was tried. The model basically focused on promoting aquarium -keeping in rural and semi-urban areas and creating new markets for ornamental fishes to sustain ornamental fish production.

a) Action

A network of ornamental fish production units in a locality was made and an educated youth was identified who, apart from supervising the units, had the responsibility of procuring and selling the fishes. He was given necessary orientation and training to take care of units. At the same time he was imparted training in aquarium preparation. Here the strategy was to popularize ornamental fishes in semi-urban areas and create new markets.

b) Outcome

The model yielded good results. There was a new found interest in aquarium keeping amongst the people. As a result the sale of aquaria in the locality increased, so also the production of ornamental fishes. As a result the women managed production units could generate an additional income of Rs500 -Rs1000/- per month. The arrangement not only made the units sustainable but also created multiplier effect in the area through expansion of existing units and establishment of more number of units in neighbouring areas.

Lessons

- Experience suggests ornamental fish units should be developed in places having suitable water sources. As continuous aeration is important factor for high density culture, sources of power supply, preferably electric connectivity should be ensured.
- It is better to develop the units in clusters located in vicinity. Groups with 3-4 women should be organized.
- Steps should be taken to popularize low cost production infrastructure as done under the project. Once the unit started running the infrastructure expansion can be taken up.
- Each unit should grow 2-3 different species to avoid glut in the local market
- As it is not possible on part of all the groups to invest in procuring oxygen cylinder, palletizer etc. common facilities should be developed to reap benefits from economies of production and marketing

Conclusion

From the experience of the above study it could be concluded that ornamental fish production is a women friendly aquaculture technology. However, continuous technological support and skill development is required for the popularization of this technology among rural women. Marketing strategies need to be meticulously planned for the sustainability of the entrepreneur.

Acknowledgement

Authors are highly thankful to the Director, DRWA for continuous support to undertake the work. Financial support by Department of Biotechnology, Ministry of Science & Technology, Government of India, New Delhi to under take the study is acknowledged.

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Empowerment of women through SHG

Shesasmita mohapatra
Ph.D Scholar of Utkal University, Vanivihar

The central theme of SHG is to empower women in rural areas who have been neglected over the years. The empowerment of an individual is considered from angles of autonomy in decision making, social prestige, economic freedom, political participation and awareness of legal protection for women. These five aspects have bearing on individuals to be empowered in the society. The present paper is a part of Ph.D thesis of "SWOT analysis of SHGs in Khurda District of Orissa".The study was designed to investigate into the following issues.

OBJECTIVE

1. To determine extent of autonomy in decision making process.
2. To find-out extent of empowerment in social life.
3. To know economic empowerment of women.
4. To ascertain political empowerment and legal awareness of SHG members.

REVIEW OF LITERATURE

Fernandez (1995) stated that the concept of self help group exist prior to any intervention. The members are linked by a common bond like caste, sub-caste, blood community, place of origin or activity in these natural groups or affinity groups. The self help groups provide the benefits of economics in certain areas of production process by under taking common action programmes like const effective credit delivery system generating forum for collective learning with rural people promoting democratic culture fostering an entrepreneurial culture, providing a firm base for dialogue and co-operation in programmes with other institutions processing credibility and power to ensure participation and helping to assess the individual members management capacity.

Happer et al (1998), stated that poorest people are excluded from SHGs an indeed SHG that many members has suffered as a result of their membership. Mayoux (2000)stated that there are four

basic views on the link between microfinance and women is empowerment, viz the view stressing the positive evidence which is optimistic about the possibility of sustainable microfinance programmes world wide empowering women ; the view recognizing the limitations to empowerment, but explains those with poor programme design; the view recognizing the limitations of microfinance for promoting empowerment but sees microfinance programmes as a waste of resources. This paper aims to clarify these issues within the context of the debate about gender main streaming. Fifteen case studies form the main basis of the arguments and the paper concludes that women's empowerment needs to be an integral part of policies ; empowerment cannot be assumed to be an automatic outcome of microfinance programs, whether designed for financial sustainability or poverty targeting ; more research and innovation on conditions of microfinance delivery are needed, cost effective ways of integration micro-finance with other empowerment interventions, including group development and complementary services are still lacking; unless empowerment is an integral part of the planning process unlikely to make more than a limited contribution to empowerment.

Nair(2001) presents an overview of issues that area of strategic significance in the move to institutionalize microfinance in India. The paper mainly looks into three questions namely measurement of success of microfinance investigations, introduction of NGOs into financial services and incorporation of gender dimensions into the approach. The article also suggests different advantages of micro-financing in the line of poverty eradication and thus different policies proposed by bank and given by govt. in the line of such process. The article gives ideas regarding different types of formal institutions in such line of rural microfinance who take the help of NGOs and SHGs to achieve targeted objectives. The paper concludes that there is an urgent need to streamline the norms and institutions that govern microfinance initiative in our country. Through resource distribution, it is essential to create a better and larger perspective to alleviate poverty. Pre-occupation of donors and national level apex bodies with sustainability has severely affected the very nature of poverty in rural areas.

METHODOLOGY

The study "SWOT analysis of SHGs in Khurda District of Orissa"was examined in three blocks of coastal zone Khurda, Bhubaneswar and Balianta blocks covering 29 villages with a sample of 120 respondents representing equally

irrigated and non-irrigated situation.The respondents were personal interviewed with a interview schedule to collect relevant information. Appropriate statistical measures were adopted for analysis of data.

1. Autonomy in decision making

Empowerment essentially implies that when a person has a say in decision and his or her opinion is honoured in the matter of concern, then we feel a person is empowered. Applying this concept in the present study, autonomy was examined in the fields of (i) home management (ii) child rearing (iii) livestock rearing (iv) labour use and (v) financial issues.

(i) Decision relating Home Management : In this case as much as five selected variables were taken and measurement was made assigning 3 for female, 2 for both male and female and 1 for male alone in taking decision. The scores obtained from 120 samples have been analyzed.

Table No-1: Decision relating to Home management

Sl.No	Areas of Decision making	Female	Male	Both	Averagescore
		3	1	2	
1	Preparation of special food	100	0	20	2.83
2	Construction of house	20	20	80	2.00
3	Repair and renovation	20	30	70	1.91
4	Interior decoration	70	20	30	2.42
5	Preparation of household article	60	20	40	2.33
	Average mean score				2.29

A look at the table reveals that women empowerment is found to be highest in case of preparation of special food followed by, interior decoration, and preparation of household articles. However, empowerment is found to be less in case of repair and renovation and construction of house. In these two cases women cannot participate more as they require collection of material, looking for mistri, carpenter etc which can only be done by male members. But in decision making process their involvement is found to at a level of satisfactory.

(ii) Child related Decision Making: Decision regarding children and their care is mostly rested with mothers in rural areas. The children up to age of 14 recquire much care for growth and starting of educational process. Both male and female are equally responsible for care of children. But while taking a

decision regarding meeting the needs of growing children mother takes active part. In finding out the autonomy of mother in taking decision regarding children of their respective families, the following results were obtained.

Table No-2 : Child related decision

Sl.No.	Areas of decision	Female	Male	Both	Average score
1	Purchase for children	60	30	30	2.25
2	Treatment	40	20	60	2.16
3	Age of schooling	60	20	40	2.33
4	Type and name of school	30	20	70	2.08
5	Marriage of son and daughter	60	10	50	2.41
6	Match selection	60	20	40	2.33
7	Celebration of function	55	20	45	2.33
	Average				2.33

Data contained in table above reveal that in the matter of child related decision, women are more empowered with respect of type and name of school for reading of their children followed by marriage of son and daughter, match selection, celebration of social functions and purchases for children. The least empowerment score was obtained for treatment of the children where contact with doctor is required. On the whole, it may be stated that women are very much empowered in the matter related to child

(iii) Livestock related decision: It is known fact that every household in rural areas rear livestock depending up on their affordability. Women at home normally take responsibility of rearing animals. In the present study an attempt was made to examine the extent of involvement of women in decision relating to livestock. The decision making decision was studied allotting 3, 2, and 1 score to the involvement of female, both and male alone. The analysis is presented in table given below.

Table No-3 : Livestock related decision

Sl.No	Areas of decision making	Female	Male	Both	Average score
1	Number of livestock	50	30	40	2.16
2	Type of livestock	60	40	20	2.33
3	Feeding of animal	80	10	30	2.58
4	Treatment of livestock	30	20	70	2.08
5	Vaccination of animal	0	10	110	1.91
6	Shed making for animal	35	35	50	2.00
	Average				2.17

In rural areas of Orissa, women are relatively more involved in livestock rearing. Data contained in table above reveal that their participation in decision relating to feeding of animal, deciding type of livestock to be reared, their number and making shed for them are in order. In case of vaccination their decision making involvement is found to be less because of external contact with veterinary doctors who remain outside the village.

(iv)Farm operation related decision

Farm and farmers are two sides of a village life. In rural areas men and women work in farm to maintain their families. In many cases they work as per physical affordability and capacity to form task.

Table No-4: Farm related decision

Sl.No	Areas of decision	Female	Male	Both	Average score
1	Selection of crop	30	20	70	1.50
2	Variety selection	0	80	40	1.66
3	Area under each crop	10	90	20	1.33
4	Use of inputs	10	90	20	1.33
5	Use of farm machinary	0	110	10	1.08
6	Storage of grain	90	10	20	2.83
	Average				1.62

Analysis reveals that decision of women in storage of grain is almost final while they have relatively more influence in deciding variety of crops to be adopted from cooking point of view, selection of crop mostly in rabi season, area under each crop and use of inputs. The use of machinery in farm operation depends more on male than female as its contact, payment etc. is normally done by male members in our society. Compared to men, they have more influence in decision making process relating to farm activities.

(v).Decision on Labour Use and allocation: In case of small and big farmers hiring labour is a must specifically in the month of July and August. Allocation of labour is one of the important decisions that family has to decide looking to urgency of crop in the field. In examining the decision making involvement of women on labour allocation in their respective farms, the following results were obtained.

Table No-5: Labor use

Sl.No	Areas of decision making	Female	Male	Both	Average score
1	Arrangement of labor	80	10	30	2.58
2	Labor per activities	55	42	23	2.10
3	Working outside as a labor	60	30	30	2.25
	Average mean score				2.31

Findings reveal that in arrangement deciding labour requirements for different farm activities and to work outside as labour, the women have far better say than men (mean score=2.31) Because women are more careful in expenditure that too in farming for they have life long experience. It can be inferred that in decision making relating to labour use, the women are quite well empowered.

(vi). Finance related decision making

The real empowerment is considered in handling of money in each family. Normally the head of the family may be male or female used to keep money and make expenditure. The concept of women empowerment very much stresses for giving freedom to women to meet their financial requirements without depending on male members. The decision relating to financial transaction in the families of the sample respondents was studied which yielded the following results.

Table No-6: Financial decision making

Sl.No	Areas of decision	Female	Male	Both	Average score
1	Keeping money	60	30	10	1.41
2	Expenditure in items	25	70	25	1.62
3	Buying and selling land	5	15	100	1.91
4	Buying and selling livestock	15	78	27	1.47
5	Purchase of inputs	12	83	25	1.40
6	Purchase of articles	74	25	21	2.40
7	Sale of farm produce	70	10	40	2.50
8	Buying of jewelry	63	10	47	2.44
9	Saving	71	30	19	2.64
10	Give on credit	38	55	27	1.85
	Average				1.97

A look at the table reveals that in the decision making areas like saving for future, sale of farm produce, buying of jewelry, purchase of household articles, buying and selling of land and giving credit to others women take leading part than men. The other areas mentioned in order of merit are, expenditure for different items, keeping of money, purchase of farm inputs, and buying and selling of livestock. The over all average score safely indicate that women are well empowered in money matters in their respective families.

2. Economic Empowerment

The reality of empowerment is valued greatly in terms of economic power that an individual contact exercise in their sphere of living. This holds good in case of women. All our plans and programs are directed to empower women economically so that other empowerments can be easily achieved. Since SHGs are created to fulfill this end, the study attempted to measure economic empowerment and the results are given below. The scores were assigned as 3,2 and 1 for frequently, sometimes and never respectively.

Table No-7: Economic Empowerment

Areas of decision making	Frequently	Sometimes	Never	Average score
Free to meet own Economic needs	53	62	5	2.40
Free to spend money	42	75	3	2.32
Free to spend personal income	62	58	0	2.51
Consulted in major expenditure	87	33	0	2.51
Independent in saving	72	40	8	2.53
Free to sell land in own name	110	10	0	2.91
Free to purchase jewelry	81	34	4	2.59
Free to use pooled income	52	50	18	2.28
Consulted in investment	76	32	12	2.53
Independent to support self and children	68	52	0	2.56
Average				2.51

Data in table above explains the variables of economic empowerment. Free to sell Land having in own name, free to purchase jewelry, independent to support self and children, consultation in major investment in family, free to make saving, consultation in major expenditure, free to make expenditure of own income and free to meet own economic needs are mentioned in order in relation to economic empowerment. The least empowerment area is reported to spend pooled income as it belongs to other members of the family. The overall average score indicates empowerment level of the sample women is quite high as a result of their participation in SHG because of personal earning.

3 Social Empowerment

In our society social sanction is the top most factor that regulate social empowerment of women. A women living in a particular social system takes time to deviate from prescribed norms. In family, village, neighbourhood and community she has to live and work. Any deviation in the system is looked differently which leads her to be isolated and face social discrimination. But while joining in the SHG such social norms are to be removed to enable her to come

outside the system and work to earn. In other words it is the process of getting socially empowered. The situation in this regard of the selected sample women was studied and the results are presented below.

Table No-8: Social Empowerment

Areas of decision	Frequently	Sometimes	Never	Average score
Independent in own initiatives	28	92	0	2.23
Mobility	36	84	0	2.30
Contact with development agency	45	68	7	2.31
Undertaking recognition activity	73	29	18	2.45
Discussion on family matter	90	30	0	2.75
Free to attend social functions	67	53	0	2.55
Respected in family matter	100	20	0	2.83
Free to undertake religious function	95	25	0	2.79
Average				2.52

The table contains the variables of social empowerment under study. The empowerment is found to be in undertaking religious functions followed by respect in family, taking part in family discussion, free to attend social functions and undertaking of recognition activities in community. The other areas of social empowerment as found out are, contact with development agencies, mobility and independency to initiate some profitable activities. However, empowerment is found to be less in case of mobility and contact with development agencies. The overall score is indicative of moderate to high level of social empowerment of sample women owing to participation in SHGs.

4. Political Empowerment

The national as well as state government are trying best to empower women in the field of politics for which different kinds of reservations are made. In the coastal tract of the state, the women are gradually taking leading role in politics. The Panchayat level election has added to the dimensions. In examining the political empowerment of SHG sample women the following results were obtained.The same procedure of scoring was adopted as in case of social and economic empowerment.

Table No-9 : Political Empowerment

Sl. No	Areas of decision	Frequently	Sometimes	Never	Average score
1	Independent in political thought	48	52	20	2.23
2	Contest in election	0	0	120	1.00
3	Election campaign	20	32	78	1.68
4	Support to political party	12	10	98	1.28
5	Attending of political meeting	1	18	84	1.45
6	Casting vote	120	0	0	3.00
7	Contribution to political party	0	0	120	1.00
8	Organizing party meeting at home	0	4	126	1.11
	Average				1.59

Analysis of data in table above reveals that sample women are very much empowered to cast their votes in election, have independent political thoughts, making election campaign and attending of political party meetings. Contesting in election and organizing political meeting at own residence has many considerations for which response in these two categories are found to be disappointing. The overall mean score does not indicate a good level of empowerment of women in the field of politics.

5. Legal Empowerment:

For protection and security of women and to have equal rights in the society the state as well central government are enacting a number of laws. The women should know them in order to enjoy equality in society. The process of legal empowerment should start from gross root level. The members of SHG are to know these laws to have better say in their day to day living and SHG where they find opportunity for earnings. In measuring the legal empowerment of SHG women sample the following results were obtained.The scores assigned was 1 and 0 for aware and not aware response.

Table No-10: Legal empowerment

Sl.No	Areas of awareness	Aware	Not aware	Average score
1	Child marriage system	20	100	0.17
2	Widow marriage act	90	30	0.75
3	Dowry prohibition act	120	0	1.00
4	Right to property	62	50	0.51
5	Divorce act	80	40	0.67
6	Domestic violence act	18	102	0.15
	Average			0.54

Results presented in table above reveal that extent of legal empowerment with sample is not much encouraging. The sample is quite aware of dowry prohibition act followed by widow marriage act and divorce act. The sample is not much aware of domestic violence act. The level of legal empowerment is up to 54% only

6. Gap in Empowerment

Taking all the components into consideration, analysis was made to find out gap in empowerment of women involved in SHG.

Table No-11 : Gap in Empowerment of Women in SHG

Sl.No	Component	Max.obtainable score	Obtained	Gap(%)
1	Decision making	3	2.06	31.33
2	Economic empowerment	3	2.53	15.66
3	Social empowerment	3	2.52	16.00
4	Political empowerment	3	1.59	47.00
5	Legal empowerment	1	0.54	46.00

Analysis reveals that maximum gap is observed in case of political empowerment followed by legal and decision making in home management areas.However, minimum gap is observed in case of social and economic empowerment. On the whole, data reflect gradual process of increasing Of empowerment among the women specifically those who are participating in SHG.

SUMMARY

The findings of study lead to arrive at following conclusions.

1. Empowerment of women is the ultimate goals of SHG and society. The govt. as well as NGOs are on job to empower woman through different approaches. The study may not attempt to measure the empowerment. The areas relating to home management are good indicator of empowerment. The sample under study are empowered in terms of preparation of and interior decorator.

2. In child relating decision they are empowered in decision making marriages of son and daughter, match selection and celebration of functions than other aspects.

3. In live stock related decision the sample women are empowered more in feeding animal, deciding type of live stocks to be kept and their number.

4. In farm related decision the women are founded to be empowered in care of storage of grains, deciding selection of crop variety and crops to be grown in their farm.

5. In case of labour arrangement women are found to be quite empowered.

6. In finance related decision making process the women are more empowered relating to sale farm produce, saving, buying of jewellery and purchases of home articles.

7. In economic front, the sample women are empowered to support children, investment purchase selling of land saving, expenditure and other items.

8. Society, women are more empowered to undertake religious functions, enjoying of family respects, attaining of social functions and holding discussion in the family.

9. In political field women are fully empowered to caste their vote, independent in political throughout and organizing election campaign where necessary.

10. In legal matter their ignorant of many laws were meant for women protection.

11. On the whole, there is gap in empowerment in field of legal,

protection act, political awareness and decision making process in various fields.

References

1. *Fernandez(1995). Beyond Micro-credit Putting Development Bank into Micro-finance.*
2. *Harper.M (2002). "Promotion of SHGs under the SHG-Bank LinKage Programme in India". Paper presented at the seminar on SHG-Bank Linkage Programme. 25th and 26th Novermber,2002 in New Delhi. Published by Micro-Credit innovations Department NABARD, Mumbai.*
3. *Mayoux, L. (2000). Micro Finance and the empowerment of women: A review of the key issues ILO Social Finance Unit, Switzerland, Geneva.*
4. *Nair(2001)."Institutionalising Microfinance in India-An Overview of Strategic Issues",Economic and political Weekly,January 27, p.400.*

***

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Constraints of the members in effective functioning of Self Help Groups

Madhumita Jena[1] and R.K. Raj[2]

There are more than 3.37 million SHG in India covering 20 percent of total population and 80 percent of total poor population (NABARD 2006). It has been revealed that the real economic gain of the beneficiaries has not been achieved. Various programmes have been implemented from various fronts to support the Self Help Groups, but there is really any noticeable change in the condition of the beneficiaries has not been achieved. Various programmes have been implemented from various fronts to support the Self help groups, but there is rarely any noticeable change in the condition of the beneficiaries. According to Singh (2006) Lack of coordination among the members, lack of training in scientific rearing of livestock, infrastucture facilities and marketing of the produce are constraints faced by the members of SHG. As SHG consist of various segments it may be difficult for the group members to successfully manage the course of events. Mishra (1996) observed that there is no effort towards the development of agro-based rural/ small scale industries to enhance the value of the products and keep the participation of the people intact. The managerial capability is a speak and it is reflected in the failure of scheme and thereby weakening the participating of women. Panda (2004) found in his study that, due to large family structure and family workload, members of the SHG could not space much time in the activities like income generation program, meeting, training and in fruitful discussion. Many disorganizing factors like untouchability, casteism, family conflicts, personal dissatisfactions, hard customary rules and issues created hindrances in the process of group functioning. It indicates that the group members have difficulties in successful management of SHG. With this background the present study has been designed to assess the constraints of the members in for successful functioning of SHGs.

Methodology

Puri district has been selected purposively because of more no of self help groups in comparison to other districts of Orissa. The sample size consists of 80 group members randomly selected from 30 percent of the total self help group in Gop block of the district. Social, financial, organisational and managerial constraints were chosen as the variables for the study. A schedule was developed, pre-tested and information was collected personally in a three point continuum which was analyzed to arrive at conclusion.

Result and Discussions:

Social Constraints

In country like India social constraint is the major problem due to the prevalence of social barrier and restrictions. Members are the part of the society and have to operate & function within the society.

Table1. Social constraints in functioning of SHG

Sl. No.	Constraint	Agree	Partially agree	Disagree	Mean Score
1.	Non-cooperation of the family members	52.50	32.50	15.00	2.37
2.	Non-cooperation of the village	56.25	33.75	10.00	2.46
3.	Jealousness of the friends and neighbours	61.25	26.25	12.50	2.48
4.	Cultural taboos not permitting	68.75	25.00	6.25	2.62
5.	Poor mobility facility	62.50	32.50	5.00	2.57

(Figures in percentage except mean score)

Majority of the respondents have agreed that cultural taboos (68.75%), poor mobility facility (62.50%) and jealousness of the friends and neighbours (61.25%) were the major social constraints faced by the women in effective functioning of the group. Mobility facilities may be managed by linking for the availability of the inputs as well as marketing of the produce. But non-cooperation of the family members, villagers and their jealousness definitely suppress them. It is therefore essentially required to create consciousness of the people and make clear understanding about the objective so that the villagers including family members could support them so that the members will develop interest for smooth functioning of the groups. It is therefore suggested for

sufficient exposure of the member about the objective, operational procedure, management including documentation and record keeping, so that the members will have clear understanding about their duties, responsibilities and function accordingly.

Financial constraints

Financial management is the pre-requisite for improvement and development of the self help groups. Successful management largely depends upon the regular flow of funds and timely operation of all activities. As revealed from the Table-3

Table3. Financial constraints in functioning of SHG

Sl. No.	Constraints	Agree	Partially	Disagree Agree	Mean Score
1.	Inadequate loan transaction	22.50	50.00	27.50	1.95
2.	Exhaustive procedures in getting loan	15.00	47.50	37.50	1.77
3.	Non co-operation of the officials	22.50	36.25	41.25	1.81
4.	No flexibility in repayment	15.00	52.50	32.50	1.82
5.	Subsidies not released to the entrepreneur	31.25	47.50	21.25	2.10
6.	Fixed deposit required for availing loan	5.00	36.25	58.75	1.46
7.	Bank people pressurize for deposit only	18.75	20.00	61.25	1.57

(Figures in percentage except mean score)

The respondents had not expressed much of financial constraints. However, inadequate loan exhaustive procedure in getting loan, no flexibility in repayment and non release of subsidies to the group members must be looked into with all possible remedial measures.

Managerial constraints

Managerial capability is indeed important in group. Leader or group head should take initiative to manage all care. Successful implementation of any activity depends upon the capabilities of entrepreneur. As revealed from Table-4.

Managerial capability is indeed important in a group. Leader or group head should take initiative to manage the group with all care. Successful implementation of any activity depends

upon the capabilities of entrepreneur. As revealed from Table-4.

Table 4. Managerial constraints in functioning of SHG

Sl. No.	Constraints	Agree	Partially agree	Disagree	Mean Score
1.	No exposure in record maintenance	20.00	42.50	37.50	1.82
2.	Skilled labour not available	40.00	32.50	27.50	1.80
3.	Inadequate space for the enterprises	28.75	45.00	26.25	2.02
4.	No permanency in getting material	36.25	48.75	15.00	2.21
5.	Quality inputs not available	41.25	45.00	13.75	2.27
6.	Poor monitoring and technical guidance	61.25	26.25	12.50	2.48

(Figures in percentage except mean score)

Majority of the respondents (61.25%) agreed to poor monitoring and technical guidance. Considering the mean score value, inadequate space for the management of the enterprise, unavailability of quality input and material as well as poor monitoring and technical guidance were the importance constraints of the respondents in management of the activities.

Table5. Comparison of the constraints in functioning of Self Help Groups

Sl. No	Constraint	Mean score	Rank
1.	Social	2.51	I
2.	Organizational	2.37	II
3.	Financial	1.78	IV
4.	Managerial	2.10	III

In comparison to the various constraints, it is observed from the Table-5 that the respondents and more of the social followed by organization and managerial with least of financial constraints. It indicates that the group is not undertaking sufficient activities for

which they did not have expressed financial constraints.

Conclusion

The study therefore includes that the group members donot have clean understanding about the concept, objectives and functioning of the group for which they expressed more of social, organisational, managerial in comparison to financial constraints. Non cooperation of the people including family members, poor mobility facilities, social restrictions, dominancy of the group leader, lack of participatory approach, no transparency, poor record keeping, insufficient training, no evaluation of the group activities, poor monitoring and technical guidance were the major constraints expressed by the group members. It is therefore suggested that the group members need to be sufficiently exposed to the concept, objectives and functioning of the group so that they will be empowered and could manage the group effectively. This also develop their interest in undertaking various activities with credit facilities and generate income which will definitely make them empowered.

Reference

1. *Amit Singh, (2006) "A study on the livelihood of livestock dependent self-help groups (SHGs) in Drug, Chhatisgarh" downloaded from www.delpesindia.org/Dr.%20Amit%20Singh.ppt*

2. *B. Mishra, (1996) "A successful case of participatory watershed management at Ralegan Siddi Village in district Ahmadnagar, Maharastra, India" downloaded from www.fao.org/x5699e/x5669e05.htm.*

3. *Dr. Tapan K. Panda, (2004), "Kaudikhani Self Help Group" downloaded from www.tapanpanda.com/doc/casestudy/SHG%20CASE2.pdf.*

4. *NABARD progress report of SHG- 2006 Bank linkage in India 2006.*

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Strategies for vitalization potential of self help groups to boost up Agriculture

A Sailaja, V. Sudharani

In recent years, women participation and empowerment have become buzz words in rural development and upliftment of rural women. Self help groups have emerged as the most successful strategy in the process of empowerment of women. The origin of Self Help Groups id the brain child of Grameena Bank of Bangladesh, Which was founded by Mohammed Younus. In India, NABARD has taken up consious efforts after 1991-92.

A self help group is a small economically homogeneous affinity group of the rural poor voluntarily coming together to save small amount of money regularly, for improving economic status, which is deposited in a common fund to meet members emergency needs and to provide colleteral free loans as decided by the groups.

The process by which group of people with a common objective are facilitated to come together in order to participate in the development activities viz., savings, credit, income generation etc., is called group formation.

The group formation & functioning are not an end but a means to develop. If self help groups are playing their intended role, it is important that they are sustainable units. The group sustainability depends to a large extent on how the group promoter prepares and strengthens the group process and asses the stability of delf help groups. An attempt has been made to assess the stability of self help groups to recive credit from banks to take-up income generating activities.

Materials and Methods

The study was conducted purposively in Visakhapatnam district of Andhra Pradesh in five mandals which had highest population of self help groups.

Two villages have been purposively selected from each of the selected mandals of which one is remote and another is roadside with the advice of staff of Indra Kranti Patham (IKP), a rural livelihood enhancement programme in Andhra Pradesh. 5-10 years old Self help groups which are in third stage of group sustenance have been selected purposively with the assistance of IKP staff. Two self help groups have been selected from each village and thus twenty self help groups from ten villages

formed the sample for the study.

Focussed group discussion and interviews were adopted for data collection regarding stability and problems of self help groups.

The stability of self help groups have been aessed by using grading instrument developed by KRIBHCO. The parameters viz., regularity in meeting, saving & repayment of loan, attendance in meeting, participation in discussion and group functioning were categorize into three classes as <50% (1), 50%-75% (2) and >75% (3) with respective weightages indicated in parenthesis. Record keeping / book keeping, operation of bank account and other dealings with banks, decision on loan taken were rated on a three point continum with weightages of 3,2 & 1 respectively. Creation of emergency/ core fund was rated on a dichotomous continuum with scores of one and zero respectively. The groups have been graded into form as weak (<13), not so stable (13-18) moderately stable (19-23) and strong and stable (>24) with corresponding score ranges.

RESULT AND DISCUSSIONS

The result of Table 1 indicated that the majority of the sampled groups were in the score range of 13-18 and hence graded in 'not so stable' category.

The parameter which have been recorded least were record keeping, participation in discussion and group functioning by members and creation of emergency / core fund.

The reason of the groups being in 'not so stable' category as revealed in focussed group discussion were the 'absence of - democratic leadership, social participation, sole involvement of leaders in the meeting, no collective work, non receipt of training of income generating activities and lack of discussion on income generating activities in meetings'.

The member also reported that there was no training in literary skills and group dynamics due to which there was poor book keeping and existence of non-functional group members.

The results in Table 2 revealed that the main problems encountered in their journey towards sustainability were ' the absence of linkages, poor leadership, lack of common work place followed by lack of accessinility to extention services & market'. These are the main cause for the groups being still in initiation stage instead of in 'development stage'. the self help groups scored less than 60 per cent and hence may be kept under observation. As such, they are not eligible to receive revolving fund assistance from DRDA and cash credit from banks so as to take up income generation activities. This gives a rider to all development organizations to focus on the strategies to enhance the stability of self help groups. Otherwise, there is every danger of these groups becoming defluent and set a negative impression to upcoming self help groups.

Table 1 : Stability of tribal women self help groups

Sl. No.	Parameters	Mandal	Scores																			
			I				II				III				IV				V			
		Village	I		II		I		II		I		II		I		II		I		II	
		Groups	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
a.	Regularity in meeting		3	2	3	1	2	3	1	3	3	3	2	2	3	3	3	1	3	3	1	1
b.	Attendance in meeting		3	3	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
c.	Regularity in saving		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
d.	Regularity in lone repayment		3	3	1	1	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
e.	Record keeping/booking keeping		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
f.	Operation of bank account & others dealing with bank		1	1	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1
g.	Decision on lone during Meeting by all		2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
h.	Participation in discussion/ group functioning		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
i.	Creation of emergency/ core fund yes/no		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		TOTAL	18	17	14	14	17	18	16	18	18	18	17	17	17	17	17	15	17	17	15	15

Table 2 : Problems perceived by tribal women self help groups

Sl.No.	Problems	Frequency
1.	No linkages	20 (100.00)
2.	Poor leadership	20 (100.00)
3.	Lack of common work place	20 (100.00)
4.	No accessibility to extension services & market	16 (80.00)
5.	lack of cooperation in group members	15 (75.00)
6.	Group communication	15 (75.00)
7.	Lack of cohesiveness	15 (75.00)
8.	Marketing outlets	14 (70.00)
9.	Social Implications to attend meeting	13 (65.00)
10.	Lack of awareness	12 (60.00)
11.	Commitment & accountability	12 (60.00)
12.	Record keeping	09 (45.00)
13.	Lack of raw material availability	08 (40.00)

Strategy

As majority of groups are found to be unstable & devoid of revolving fund assistance to take up their income generating activities. The following strategies have been suggested as an immediate action to be taken by facilitating / implementing agencies. The strategies are mentioned here under four heads as - ADMINISTRATIVE, MANAGERIAL, ORGANIZATIONAL and TECHNICAL as follows :

I ADMINISTRATIVE

1. Strengthening of linkages of local community - self help group - development departments :

Selp help groups need to be strongthly linked with local community on one hand, (to ensure adequate cooperation) and with development depatments (agriculture and allied departments, marketing etc.,) which facilitates work convergence and hastens the community participation.

2. Infrastructure development :

As the self help groups do not have common work place to meet and do collective work, creation of a common infrastructure in the village with DRDA infrastructure fund needs to be taken up.

II MANAGERIAL

1. Training and development :

Individualized training and capacity building of members of self help group in the following areas is benefical to make them stable.

- Procedure / facilitation skills of conducting meetings

- Group processes, group dynamics & functioning

- Periodical technical trainings need to be conducted

- Income generating programmes.

Major component of Income Generating Programmes needs to include

- Bridge course to upgrade literacy
- Practical skill development programmes (employing socio-drama, method demonstration) to impart basic skills, trade skills, entrepreneurial skills in addition to bargaining, marketing and financial management skills.
- Training in creation of viable and sustainable self employment opportunities in area of soil sampling, bio-input preparations, IPM technologies, vermi- composting and other small agro-based enterprises.

III ORGANIZATIONAL

1. Networking of groups

It is most important to form long term sustainable organizations like

federations.

Rotational leadership is to be encouraged so that all the members discharge the roles of office-bearers which provide 'hands-on experience' training to them.

2. Relaxation of procedures of credit availment is of outmost importance and needs to be attended immediately.

IV TECHNICAL

1. Guidance & advisory services

- Recruitment of more number of lady extension workers needs to be taken up for effective skill empowerment.
- Organizing national and international seminars, exhibitions, exposure visits, workshop, programmes through mass media to create awareness among self help groups on women friendly technologies to be taken up.
- Organizing village level camps to make them aware of their rights, duties and vari ous developmental programmes in action.
- Organizing campaigns for mass scale adoption of technologies like integrated crop management, parthenium eradication, rat control, afforestration etc., will be more benefical. They form a gateway of all developmental programmes.
- monitoring of each of the stages of group sustainance for further improvement.

These strategies if implemented would definitely make the existing self help groups as viable & sustainable social capital leading to rural upliftment, social and economic empowerment which ultimately fastens the process of economic development making India as one of the superpowers in 2020.

CONCLUSION

Thus , Self Help Group centric developmental programme strategies enhance skill, quality consciousness, compitetitive spirit and thereby ensures enviromental sustainability by empowering the weaker gender in the rural socity.

Referance

IGNOU Study material

SAMRUDHI Group sustainability training module for selp help groups

2001, SERP, WE and, SE, Care, Hydrabad.

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Impact of socio-economic variables on technology adoption behaviour of small farmers in coastal Orissa.

S.K. Swain*, S.P. Sangramsingh**
Krishi Vigyan Kendra (OUAT), Angul, Orissa

Abstract

A study was conducted during 2002-2003 in three progressive and three non-progressive villages of Rajkanika & Rajnagar block of Kendrapara District, Orissa, to determine the relationship between socio-economic variables and adoption behaviour of small farmers. Farmers of young age or higher education or caste of agrarian occupation or of families with more members or relatively larger land holding or more income showed a positive trend in their adoption behaviour.

Key words: Small farmer, socio-economic variable, adoption behaviour.

Introduction

Orissa is a state of agrarian villages. So development of the state can not be conceived without the development of the villages. The problems of Orissa, are mainly the problems of agriculture. So a rapid change over from traditional way of farming to modern scientific farming is highly essential for upliftment of the state farming community. Study of the facts on agricultural development would indicate that though the growth of agriculture in Orissa, in spite of all the climate & social constraints, is not so discouraging. The considerable change may be attributed to dynamic extension system of massive agricultural programmes launched by either state or central government. The primary objective of the programmes is to translate the scientific explosions in the field of agriculture into economic reality by adoption of effective communication strategy. Assimilation of technological changes in agriculture can be sustained only when they are accepted and acted upon by our farmers. But it is seen that nearly 30% of the technology are adopted as farm audience are too much diversified in their socio-economic standing and exhibit heterogenous adoption behaviour under village situations. The percentage of small farmer in our farming community being maximum a study has been undertaken to investigate to determine the relationship between socio economic variables and adoption behaviour of small farmers.

* Subject Matter Speciallist (Agronomy), KVK, Angul.

**Subject matter Specialist (Extension), KVK, Jagatsinghpur.

Materials & Methods

The study was conducted in three villages each in Raj Kanika & Rajnagar block of Kendrapara district of Orissa, which were mostly exposed to extension activities of KVK system. Attempts were made to select small farmers from progressive and non-progressive villages of the block. Taking irrigation facilities as major criteria 3 progressive and 3 non-progressive villages were selected out of 12 villages on the scale of progressiveness developed by IARI. Farm families of small farmers were selected at random which were 74 for progressive & 37 for non-progressive village. Relationship between socio-economic variables and adoption behaviour of small farmers taking age, education, family size, caste as social factors and dependency on land, income, house structure, size of holding as economic factors were analyzed with correlation. Adoption of HYV crops with improved package of practices was taken as the technology disseminated & adopted.

Results & discussion

The data regarding effect of social factor on adoption behaviour in Table-1 reveals that level of adoption is related with the age group. In progressive village, highest percentage of adoption is observed with young farmers (41.90%) followed by middle aged farmers. Low adoption behaviour is marked to the highest with ild farmers similar trend of adoption behaviour is also observed in non-progressive village. It can be concluded that farmers of comperatively lower age are more active and inclined to take up innovations. So age is significantly associated with acceptance of innovations. Similar findings were recorded by Rajguru & Parija (1972). Regarding effect of education, it is seen that high level of adoption behaviour was observed on higher level of education i.e. middle school (70%) and high school above (100%), highest medium level adoption with farmers who can read & write only & primary standard and low level adoption with illiterate farmers in both progressive and non-progressive village (Table-1). It can be concluded that education has a impact on attitude and adoption. This tallies with the findings of Jha & Sakravat (1972).

The data on effect of caste in Table-1 depicts that the higher levels of adoption behaviour was observed with khandayat and lowest level of adoption behaviour with baisya caste farmers. Bramhins are found to be in medium adoption level. This is the trend both in progressive and non-progressive villages This tallies with findings of Rajguru & Satpathy (1973). The findings appear logical on Khandayat belonging to

agricultural caste are more interested in farming.

Similarly, families consisting ten and above members are found to be in highest adoption level followed by families having 5 to 9 members. In medium level of adoption, families upto 4 members are found to be highest. This category is also observed to be more in low level of adoption behaviour. But in non-progressive village, families with 5 to 9 members are only found in high level of adoption behaviour and in medium level families with 10 & above members are found to be maximum. Higher adoption in families of higher members may be due to the fact that large families may be in a better position of plan their economy and utilization of human resources in an advantageous way which motivate them to take up agricultural innovations. This tallies with the findings of Sulankhe & Thorat (1975).

Regarding economic factors as revealed in Table-2, in progressive villages, the farmers having landed property between 4.5 to 5 acres are found to be mostly in high level of adoption behaviour. The medium level adoption behaviour is marked to be highest among farmers with land holding 2.5 to 3.5 acres. But in non-progressive villages the low adoption behaviour is marked highest among farmers with 2.5 to 3.5 acres of land similarly also farmers fully depending on land are maximum observed in higher level of adoption behavior both in progressive & non-progressive villages. Similar findings were reported by Rajguru and Ramaish (1971). Income level's effect on level of adoption shows a positive trend in both the situations. It might be due to higher income or higher farm returns makes a farmer rational in his adoption behaviour. This tallies with the findings of Rajguru & Patra (1971) Adoption level is also found higher with farmers having semi Pucca & Pucca residences. It might be due to the fact that farmers of Kachha house are poor and unable to afford for new innovations.

The correlation study reveals that in progressive villages, education, income, size of holding & house structure are significantly correlated with adoption behaviour of farmers and in non-progressives village education, size of holding and house structure are significantly correlated (Table-3).

The findings of the study lead to suggest that introduction of innovation in villages of Orissa requires a complete study on influence of socio-economic condition under which farmers reside & work. Innovations in the field of agriculture can well be introduced taking the effect of education, income, size of holding, age & family size. These factors

accelerate the rate of adoption of innovations.

Reference

1. *Jha, P.N. & Sakravat, G.S. 1972 Adoption behaviour of farmers towards high breed bajra cultivation, Ind. Jr. Ext. Ed. 8(1&2)" 24-29*
2. *Rajguru, G. and Parija, S.K. 1972 A study on differential use of sources of information as related to adoption of some improved farm practices by the farmers of Puri district. M.Sc(Ag) Thesis, Dept. of Extension, O.U.A.T. BBSR.*
3. *Rajguru, G. and Satpathy. C. 1973: Relationship between personal factors and adoption of HYV paddy by farmers of Puri district, Jr. of Res. 3:24-27.*
4. *Rajguru G. and Patra, B.P. 1971. Socio- psychological correlation of the acceptance of HYV programme by farmer of Puri district. MSc(Ag), Thesis, Dept. Ext. OUAT.*
5. *Salunkhe, G. and Thorat, S.S. 1975. Adoption behaviour of small farmers in relation to their personal characteristics Ind. Jr. of Extr. Edm. 9(1&2) 67-69.*

Table 1: Social factors adoption behaviour of small farmers in progressive & non-progressive villages.

Social	Progressive village (N=74)				Non-progressive village (N=37)			
	Frequency	Adoption behavior			Frequency	Adoption behavior		
		High %	Medium %	Low %		High %	Medium %	Low %
(a) Age Group								
Young (upto 35 yr)	31	41.9	58.1	0	12	16.7	25	50.3
Middle (36-50 yr)	27	29.6	59.3	11.1	15	6.7	20	73.3
Old (>51 yr)	16	0	87.5	12.5	10	0	20	80
(b) Education								
Illiterate	9	0	66.7	33.3	6	0	0	100
Can read only	12	0	97.7	8.3	0	0	0	0
Primary	31	6.5	90.3	3.2	19	0	10.5	89.5
Middle school	10	70.0	30.0	0	7	0	57.2	42.8
High school & above	12	100	0	0	5	60	40	0
(c) Caste								
Bramhin	2	0	100	0	11	0	18.2	81.8
Khandayat	64	32.8	61	6.2	21	9.5	23.5	67
Baisya	7	0	85.7	14.3	2	0	0	100
Sudra	1	0	100	0	3	33.3	33.3	33.4
(d) Family size								
Upto 4 member	8	0	87.5	12.5	7	0	0	100
5-9 member	48	31.2	64.6	4.2	22	13.6	13.6	72.8
? 10 members	18	33.3	55.6	11.1	8	0	62.5	37.5

Table 2: Economic factors & adoption behaviour of small farmers in progressive non-progressive village.

Economic	Progressive village (N=74)				Non-progressive village (N=37)			
	Frequency	Adoption behavior			Frequency	Adoption behavior		
		High %	Medium %	Low %		High %	Medium %	Low %
(a) Size of holding								
2.5 – 3.5 acre	40	12.5	80	7.5	19	5.3	10.5	84.2
3.6 – 4.5 acre	20	30	65	5	6	16.7	16.7	16.6
4.5 – 5.0 acre	14	71.4	21.4	7.2	12	8.3	41.7	50.0
(b) Dependancy on land								
Fally dependant	67	31.3	64.2	4.5	30	10	23.3	66.7
Partially dependant	7	0	71.3	28.7	7	0	14.4	85.6
(c) Annual family income								
Low (upto Rs 3000/-)	4	0	100	0	12	0	8.3	91.7
Medium (Rs 3001- Rs 6000)	49	8.2	81.6	10.2	21	9.5	19.0	71.5
High (Rs 6001- above)	21	81	19	0	4	25.0	75.	0
(d) House structure								
Kachha	40	2	87.8	10.2	26	3.8	3.8	92.4
Semi Pucca	21	81	19.0	0	10	20	60	20
Pucca	4	75	25	0	1	0	100	0

Table 3: Relationship between socio economic variables & adoption behaviour

	Socio-economic variable	Progressive village (r value)	Non-progressive village (r value)
Social	Age	0.358	0.102
	Education	0.821	0.897
	Caste	0.050	0.169
	Family size	0.107	0.326
economic	Dependary on land	0.214	0.283
	Income	0.766	0.485
	Size of holding	0.883	0.512
	House structure	0.732	0.689

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Adoption of mushroom cultivation technology by rural women in Rayagada District

***Dr. Susmita Mohanty, Mr. Nirakara Ransingh, Mr. K.S.V. Prasad*.**

Mushroom production has tremendous potential as an income generating activity particularly by landless and marginal farmwomen as an additional source of income. However due to lack of awareness, technical knowledge, guidance and lack of initiative from family members, the adoption remains low. Mushroom cultivation was almost negligible in Rayagada district prior to the implementation of FLD & training programme through Krishi Vigyan Kendra. Tribal women procure different types of mushroom such as Bati chhatu, Jamba chhatu, Nada chhatu, Shrabana chhatu from forest areas and sell them in the nearby market place in high price which is limited to only a certain period of the year. The study undertaken with 80 farm women trained by KVK both paddy straw and oyster mushroom cultivation revealed that about 11.25% of respondents practised mushroom cultivation immediately after the completion of training programme. A total of 23.75% respondents cultivated mushroom after some persuasion. None of the respondents of village Dambasara & Dandaguda adopted even after repeated visits. About 10% of the respondents showed interest towards adoption of mushroom production technology but could not implement due to non availability of spawn. The constrains as expressed by the rural women are shortage of space (73.91%), non availability of spawn (65.21%), lack of time (60.86%), non-availability of required material (28.26%), personal disliking (23.91%) & family restriction (17.39%).

The largest number of women in India lives in rural areas and majority of them are engaged in farm activities. The rapid increase in population is creating an alarming situation of decreasing land for agriculture. Therefore, women need some alternative non-agricultural activities, particularly mushroom

cultivation which can supplement their family income. Mushroom production has tremendous potential in Rayagada district. Mushroom cultivation is a highly profitable venture and widely accepted by the researcher as a good venture for income employment and rural development. (Kapoor and Behi, 1983), (Chauhan & Soodh, 1992). Mushrooms is also a good food supplement as it contain minerals & vitamins (Beetz & Greer, 1991). Mushroom has both nutritional & medicinal value (Hobbs etal 1995). In comparison to other districts of Orissa, mushroom production is quite low & mostly procured by collection from near by forest area which is limited to specific period of a year i.e during rainy season. Tribal women collect difference types of mushroom such as Batchhatu, Jambachhatu, Nada Chhatu, Shrabana Chhatu during rainy season & sell them in near by market area in high price. Sometimes it also creates food allergy and poisoning due to ignorance of the people about different types of edible mushroom. The climate of Rayagada is very much congenial for cultivation of various types of mushroom, more or less through out the year. A study was therefore designed to access the extent of adoption on mushroom cultivation technology with the following specific objectives.

OBJECTIVE

- To assess the gain in knowledge of the rural women about mushroom cultivation technology after the training programme.
- To analyse the attributes of mushroom cultivation technology as perceived by the rural women.
- To determine adoption status of rural women with regard to mushroom cultivation.
- To ascertain the reason for non-adoption of this technology by rural women.

METHODOLOGY

The study was conducted in Rayagada district of Orissa. Training on mushroom cultivation technology i.e both paddy straw mushroom & oyster mushroom were arranged in 4 adopted villages of Gunupur blocks namely Gadiakhala, Rengalapadar, Dandaguda & Dambasara. A total of 80 interested farm women from 4 villages i.e.20 from each village were trained in mushroom cultivation. A schedule was developed for accessing the acceptability of mushroom cultivation. The collected information were analysed and presented herewith.

RESULT & DISCUSSION

Table no-1: Socio Economic Profile

Sl. No.	Variables	Village wise respondents				Total n=80
		Gadiakhala n=20	Rengalapadar n=20	Dandaguda n=20	Dambasara n=20	
1	Age					
	16-30years	12(60)	9(45)	13(65)	7(35)	41(51.25)
	31-45years	6(30)	11(55)	6(30)	9(45)	32(40)
	Above45years	2(10)	-	1(5)	4(20)	7(8.75)
2	Caste					
	SC	2(10)	6(30)	2(10)	3(15)	13(16.25)
	ST	15(75)	12(60)	18(90)	9(45)	54(67.5)
	Others	3(15)	2(10)	-	8(40)	13(16.25)
3	Marital status					
	Married	17(85)	20(100)	19(95)	18(90)	74(92.5)
	Unmarried	3(15)	-	1(5)	2(10)	6(7.5)
4	Family type					
	Nuclear	16(80)	13(65)	20(100)	9(45)	58(72.5)
	Joint	4(20)	7(35)	-	11(55)	22(27.5)
5	Landholding					
	Landless	11(55)	9(45)	4(20)	7(35)	31(38.75)
	Upto1 acre	7(35)	6(30)	10(50)	4(20)	27(33.75)
	2.5 acre.	2(10)	5(25)	4(20)	6(30)	17(21.25)
	Above 5 acre	_	-	2(10)	3(15)	5(6.25)
6	Education					
	Illiterate	12(60)	17(85)	15(75)	8(40)	52(65)
	Primary	5(25)	3(15)	5(25)	11(55)	24(30)
	Middle	2(10)	-	-	1(5)	3(3.75)
	High school	-	-	-	-	-
	Graduate	1(5)	-	-	-	1(2.5)
7	Income					
	Upto Rs 2000/-	13(65)	15(75)	9(45)	6(30)	43(53.75)
	Rs.2000to 5000/-	4(20)	3(15)	7(35)	10(50)	24(30)
	Above Rs 5000/-	3(15)	2(10)	2(10)	4(20)	13(16.25)

**Figures in the parentheses indicate percentage.*

The study reveals that out of 80 respondents about 51.25% belonged to the age group of 16-30 years. About 40% respondents were in the age group of 31 to 45 years. Only 8.75% belonged to the age group category of above 4 years. In caste category schedule tribes respondents were maximum mounting to 67.5% followed by scheduled caste 16.25% and other caste 16.25%. About 92.5 percent respondents were married & the rest of were unmarried. Nuclear family system prevailed more in comparison to joint family in the target group. A little more than 50% respondents were illiterate. The monthly income of the majority of respondents (53.75%) was within Rs 2000/-.

Further attempt was made to know the gain in knowledge on different aspects of mushroom cultivation and the results is reflected in Table- 2.

Table no-2: Gain in knowledge on mushroom production technology

Sl. No.	Message /catagories	Post exposure				
		Gadiakhala n=20	Rengalapadar n=20	Dandaguda n=20	Dambasara n=20	Total n=80
1	Concept and importance					
	Low	4(20)	2(10)	3(15)	8(40)	17(21.25)
	Medium	9(45)	10(50)	11(55)	9(45)	39(48.75)
	High	7(35)	8(40)	6(30)	3(15)	24(30)
2	Types of mushroom					
	Low	5(25)	6(30)	4(20)	3(15)	18(22.5)
	Medium	4(20)	5(25)	2(10)	6(30)	17(21.25)
	High	11(55)	9(45)	14(70)	11(55)	45(56.25)
3	Food value					
	Low	7(35)	6(30)	4(20)	8(40)	25(31.25)
	Medium	10(50)	8(40)	6(30)	7(35)	31(38.75)
	High	3(15)	6(30)	10(50)	5(25)	24(30)
4	Spawning					
	Low	3(15)	4(20)	2(10)	3(15)	12(15)
	Medium	5(25)	2(10)	8(40)	6(30)	21(26.25)
	High	12(60)	14(70)	10(50)	11(55)	47(58.75)
5	Fruiting& harvesting					
	Low	2(10)	1(5)	-	2(10)	5(6.25)
	Medium	8(40)	4(20)	13(65)	9(45)	34(42.5)
	High	10(50)	15(75)	7(35)	9(45)	41(51.25)

6	Packing& marketing					
	Low	2(10)	4(20)	3(15)	5(25)	14(17.5)
	Medium	11(55)	11(55)	9(45)	6(30)	37(46.25)
	High	7(35)	5(25)	8(40)	9(45)	29(36.25)
7	Overall knowledge					
	Low	-	-	2(10)	3(15)	5(6025)
	Medium	14(70)	9(45)	10(50)	12(60)	45(56.25)
	High	6(30)	11(55)	8(40)	5(25)	30(37.50)

**Figures in the parentheses indicate percentage.*

It is evident from the table that the respondents had high knowledge in spawning (58.75%), types of mushroom (56.25%), fruiting & harvesting (51.25%) followed by medium knowledge level in respect to concept and importance (48.75%) packing and marketing (46.25%) and food value (38.75%). Majority of the respondents in over all had medium knowledge (56.25%) followed by high knowledge level (37.50%).Thus it is evident from the data that the respondents acquired good knowledge about this technology after intervention of the KVK. This may be due to the fact that during training the respondents themselves practiced all the steps of mushroom cultivation and acquired good knowledge. Similar results were stated by Meheta (1996) and Sharma(1997).

Further attempt was made to invite the reactions of the respondents about perceived attributes of mushroom cultivation, the result of which is appeared in Table-3.

Table no-3 Distribution of respondents according to perceived attributes of Mushroom Cultivation

Sl.	Attributes	Villages				
		Gadiakhalla n=20	**Rengalapadar n=20**	**Dandaguda n=20**	**Dambasara n=20**	**Total n=80**
1	Simplicity-complexity	15(75)	10(50)	12(60)	16(80)	53(66.25)
2	Profitability	17(85)	11(55)	13(65)	19(95)	60(75)
3	Compatibility	13(65)	16(80)	10(50)	15(75)	54((67.5)
4	Triability	12(60)	14(70)	11(55)	9(45)	46(57.5)

**Figures in the parentheses indicate percentage.*

Table no-4: Attitude towards mushroom cultivation

Sl.	Attitude	Villages				
		Gadiakhala n=20	**Rengalapadar n=20**	**Dandaguda n=20**	**Dambasara n=20**	**Total n=80**
1	Unfavourable	2(10)	4(20)	8(40)	1(5)	15(18.75)
2	Favourable	12(60)	6(30)	3(15)	7(35)	28(35)
3	Strongly favourable	6(30)	10(50)	9(45)	12(60)	37(46.25)

**Figures in the parentheses indicate percentage.*

The attempt made to analyse the attitude of the respondents towards mushroom cultivation revealed that majority of respondents showed strongly favourable (46.25%) attitude towards mushroom cultivation followed by favourable attitude (35%). Thus it was concluded that the training programme has created a positive attitude in the minds of the rural women. Training further proved effective in creating more favourableness towards mushroom cultivation technology. Similar results were reported by Sharma (1997) and Vijay Khader(1997).

The adoption behaviour of the respondents were also analysed. It is observed from the Table- 5 that 11.25% of the respondents adopt mushroom production technology

Table no-5: Adoption Behavior on Mushroom Cultivation.

Sl.	Catagories	Village				
		Gadiakhala n=20	**Rengalapadar n=20**	**Dandaguda n=20**	**Dambasara n=20**	**Total n=80**
1	Adopted immediately	3(15)	2(10)	3(15)	1(5)	9(11.25)
2	Adopted after 2 to3 times persuation	4(20)	5(25)	3(15)	5(25)	17(21.25)
3	Interested adopters	2(10)	-	-	6(30)	8(10)
4	Non-adopters	11(55)	13(65)	14(70)	8(40)	46(57.5)

**Figures in the parentheses indicate percentage.*

immediately after training while 21.25 percent respondents tried the technology after some persuasion. Village-wise analysis reveals that maximum of 15 percent respondents from both Gadiakhala and Dandagada practised mushroom technology immediately after training. No doubt 10% respondents of Gaidakhala and 30% respondents of Dambasara showed interest after persuasion but could not implement due to non-availability of raw materials in time. It can be concluded that about one third of the respondents accept this technology as a result of motivation.

The reason and constraints of the farm women for not practising mushroom cultivation were also analysed and reflected in Table-6.

Table no-6 Reasons for Non-adoption of Mushroom Technology

Sl.no	Reasons	Villages				
		Gadiakhala n=11	**Rengalapadar n=13**	**Dandaguda n=14**	**Dambasara n=8**	**Total n=46**
1	Shortage of space	9(81.8)	10(76.92)	10(71.42)	5(62.5)	34(73.91)
2	Lack of time	11(100)	7(53.84)	9(64.28)	3(37.5)	30(65.21)
3	Non-availability of spawn	5(45.45)	8(61.53)	7(50)	8(100)	28(60.86)
4	Family restriction	4(36.36)	3(23.07)	-	1(12.5)	8(17.39)
5	Personal disliking	2(18.18)	3(23.07)	2(14.28)	4(50)	11(23.91)
6	Non-availibility of required materials	4(36.36)	2(15.38)	4(28.57)	3(37.5)	13(28.28)

**Figures in the parentheses indicate percentage.*

Data in the table indicates that shortage of space in home (73.91%), lack of time(65.21%), non availability of spawn(60.86%) were found to be major obstacles in mushroom cultivation. Village-wise analysis reveals that lack of time(100%), shortage of space(81.8%) were the main reason for non-adoption in village Gadiakhala. While in village Dambasara, non-availability of space is the main reason for non-adoption of technology. It can be apprehended that the respondent had not properly understood as mushroom cultivation do not require much space and operation to be done during leisure period.

So effective and intensive training should be organized by the KVK scientists for rural women to enhance their knowledge to create a favourable attitude and finally motivate them to adopt this technology and generate substantial income for development of their family.

References

1. *Das.M.1997. Mushroom cultivation for rural women, Social Welfare,44(2):34-35.*
2. *Grover.S. and Grover.D.2004.Women in agricultural development.pp:213-245.*
3. *Kumar,S and Ban,V.B.1994 .Mushroom cultivation for small scale farmers –A farming system*
4. *approach. International Journal of Mushroom Research and Development.3(2):103.*
5. *Vijaya Khadar.1997. Mushroom cultivation for rural women entrepreneurship. Indian farming.April:19-25.*

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Analysis of the post-adoption phases with respect to some critical agro-techniques of boro paddy (summer rice) with special emphasis on rejection phenomenon

K. Pradhan[1], S. K. Acherjee[2], M. M. Adhikary[3] and P.Sarkar[4]
[1]Asstt. Professor, UBKV, Pundibari, Cooch Behar, West Bengal
[2, 3] Professor and [4] Student, Department of Agricultural Extension, BCKV, Krishi Viswavidyalaya, Nadia, West Bengal

INTRODUCTION

At the onset of sixties, the intensive agricultural era got underway, taking the apparently stale rural societies of India by storms. The changes had both been intrinsic and fabricated. The intensive agricultural approach basically laden with ideas of high cost and high return enterprises, had led our societies to move pro-adoptive rather than pro-adaptive in regard to responding package of technologies recommended by the technology generating ends. In such a research climate, wherein the production approaches had been influencing the research process like anything, we the pro-adoption researchers, might have forgotten the fact that, farmers should have the prerogative to reject any technology recommended from a research institute. Besides Prochaska's concept of contemplating ability of a potential adopter in an innovation-decision process comes up supportive favouring the rejection phenomenon specially in areas of logical rejection that is in case of incompatible technologies. If we think the entire process dialectically, any prudent scientists of extension education should identify this as a concurrent phenomenon as adoption-rejection. Complexity of innovations is the basic impediments to any adoption-rejection process (Wearing, C.H., 1988). The lack of awareness and the lack of credits are mostly the hindrances of adoption but logically the stimuli to rejection (Satyanarayan *et al, 1999).*

The astounding fact along with the adoption process is that rejection is cognate, intrinsic and natural companion of the same. The data generated from rejection are more likely to be real and prototype to one's life process. Not only that the rejection of any innovation goes more internalized, at the same time self-revealing as well. Keeping these in view, the present paper envisages the extent of rejection with respect to some social, economic and psychological factors.

METHODOLOGY

The study was conducted at Haringhata block of Nadia district in West Bengal. The block was purposively selected for this study because the area had been highly potential with respect to crop cultivation and demographic advantages. The simple random sampling technique was adopted for drawing sample both from the villages and the respondents. Two villages were randomly selected from the ten gram- panchayats of the block. Fifty farmers were selected from each of the two selected villages. The dependent variable the extent of rejection had been operationalised and measured with the help of the instrument developed for the study. Some conventional instruments had been used with minor modifications. Data were collected with' the help of structured interview schedule. The analytical framework of the study include the statistical tools like simple correlation, multiple regression, path analysis and discriminant function analysis.

RESULTS AND DISCUSSION

From Table 1, it was clear that the variable, age (X_1), education (X_2), family members above 14 years (X_3), size of holding (X_5), homestead land (X_6), irrigation status (X_7), price volume of agricultural implements (X_8), social interaction status (X_{10}), access to media (X_{11}), annual income (X_{12}) and annual expenditure (X_{13}) had recorded strong and positive bearing on the extent of rejection of boro-paddy.

Education recorded a strong association with the extent of rejection in case of boro paddy cultivation. A movement in a positive direction on the ladder of education had made the respondents enough critical and selective to the available choices. That was how he has rejected one conventional technology to make a cushion for the incoming innovation. Age also had accorded a strong and positive bearing on rejection phenomena. To stimulate the researcher to resolve that cases of rejection of the agro--technique of boro paddy (summer rice) were prevalent in higher age group farmers. The rejection also had been quite frequent in families having higher number of adult family member to imply that availability of family labour or experience profile in a family might have steer the farmers to become venturesome in rejecting the conventional technologies. It was also discernable that respondents having higher size of holding had rejected boro-cultivation with a presumption that rejection of an apparently non-remunerative agricultural enterprise could have ensured better return from an alternative use of landmass. With higher homestead land size the

respondents went disillusioned with the boro paddy (summer rice) cultivation and rejected it to transform that homestead as well as surrounding land into vegetable field or any other remunerative agricultural enterprise. There had already been a swing from boro paddy (summer rice) enterprise to vegetable enterprise with a response to the increasing concern for depletion of underground water, breaking out of arsenic problem and decrease in the market price of boro paddy. That is why farmers of having higher irrigation status for their landmasses are switching over to vegetable cultivation and thereby they kept rejecting boro paddy (summer rice) cultivation concurrently. It was also observable that with the increase of price of agricultural implements and ultimately had told-upon the process of rejection. Both the social interaction status and access to media had made the respondents cosmopolite and versatile and ultimately had accorded to him enough of confidence to reject the conventional one and adopt the new choices. The higher the annual income, the higher had been the extent of rejection. Higher annual income had transformed a trivial farmer into a swashbuckling one. That is why he could now reject anything non--remunerative and non-promising to make an incoming of remunerative one. Rejection always imbibed expenditure, sometime rejection might go expensive in the sense that alternatives were not immediately rewarding or it required a long gestation period to come up with a derived output. That was thus higher annual expenditure had been promulgamated with higher extent of rejection.

From the Table 2, it was found that the â x R value of the variable annual income (X_{12}) had been 53.31 percent. So, this is a substantive contribution with the total explained variations of 33.18 percent (R^2 value). This would indicate that farmers having higher income level had been blessed with plenty of choices for rejecting the conventional agro-techniques and adopting the new innovations. Income had made them capable enough to bear with the shock and risk of rejection. Also propensity of rejection had generally gone predominant for the farmers of higher income group to evidence the fact that agricultural enterprises are providing more elasticity and resilience for the well-off farmers rather than poorer once.

The R^2 value being 0.3318, it was to infer that all the casual variables jointly had explained 33.18 percent of the total variability embedded with consequent factor, extent of rejection.

Table 3 presents the path analysis

to depict the direct, indirect and residual effect of the exogenous variables on the consequent variable, extent of rejection. It was found from the given table that annual income (X_{12}) had exercise substantial direct effect and quite logically it implied that respondents of higher annual income had gone realistic in rationalizing the score of innovations through rejection and reversion process to increase the net return from the enterprise. It was also observed that the variable family members above 14 years (X_3) had positive bearing at the extent of rejection of boro paddy (summer rice) cultivation. It was found that cases of rejection of agro--techniques of boro paddy (summer rice) cultivation were prevalent in the families having higher number of adult family members. It was also observed that the variable education (X_2) had positive bearing on the extent of rejection of some agro-techniques of boro paddy (summer rice) cultivation.

It was found that the highest indirect effect on as many as twelve casual variables had passed through the variable annual income to suggest that the annual income or investment capability of a respondent still held the key to characterize the complex network of instruction through exercising its immense associational property. The residual effect was 0.6682 to conclude that all these thirteen variables could not explained 66.82 percent of the variation embedded with the consequent variable, extent of rejection.

Table 4 presents the discriminant analysis to delineate their extent of efficiency of the causal variables to discriminate between what we call the high and low level of rejection. It was found that the variables annual income (X_{12}), access to media (X_{11}), education (X_2), homestead land (X_6), size of holding (X_5), had the substantive effect in discriminating the high and low rejection level. So, these variables should be paid with due attention so that the cases of rejection could be analysed from a strong foundation of cause--effect interactiveness.

CONCLUSION

Most of the adoption phases in diffusion researches have been considered crucial and protractile. Rejection is the most important and sizzling component from which a lot of relevant information could be generated. The data generated from rejection phenomenon, could go a long way in redeeming and redesigning the transfer of technology process. While analyzing the present study, it had been found that high access to media, higher level of education and larger size of homestead land had produced substantive, discriminatory efficacy to make high and

low level of rejection. This type of study could be replicated to other field enterprises and their diffusion kinetics delineating the role and contribution of different factors to decide on phenomenal changes in different post-adoption consequences like discontinuance, reinvention etc.

Reference

1. *Prochaska, James O., Corio C. Diclemente, and John C. Norcross (1992) "In search How Peolple Change: Applications to Addictive Behaviours", American Psychologist, 47(9) : 1102-1114 (PE)*

2. *Satyanarayan, Soni, Kurmvanshi, S. M. Soni, S. N. (1999) Technological status (adoption pattern) of soybean cultivation in district Sagar of Madhya Pradesh. Crop Research, Hisar.* ***18*** *: 1, 150-154; 5 ref.*

3. *Wearing, C. H. (1988), Evaluating the IPM Implementation Process, Annual Reviews of Entomology, 33 : 17-38, 0 (E).*

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Cognition of Farmers on Wetershed Development : A means for peoples' participation

B. Jirli, P. Saroj, M Singh

Introduction

Water is the source of life, without water life is unthinkable. Despite its preciousness water has remained a neglected issue till today. The reason behind India becoming water insecure nation is its free supply. The International Water management Institute (IWMI) forecasts that by 2025, thirty three percent of India's population will live under absolute water scarcity condition. The per capita water availability, in terms of average utilizable water resources in the country, has dropped drastically from 6008 m^3 now and is expected to dwindle to 1450 m^3 by 2025 (The Hindu Survey of Indian Agriculture, 2005). India witnessed several water related problems during 2002, 2003 and 2004. The major source of water is rain which is further detiorated in natural and manmade systems, natural systems include river, rivulets, nalas, lake, ponds and manmade system include small, medium and major irrigation projects, Dams, watersheds, tank, well etc.

With all these scarcity figures India shares near about 19 per cent of the world's population, 15 per cent of the live stock population, while it has only one per cent of the forest area, 0.5 per cent of the pasture land, and two per cent land of the total geographical area of the world. Naturally, leading pressure on the productive lands and forest. Therefore, the lands especially the farmlands in India are in the constant process of various degrees of degradation and are going very fast turning into wastelands. In accordance with the National Remote Sensing Agency (NRSA) findings there is about 75.05 million hectares are treatable and can be brought back to prospective levels through watershed technology.

In our country, out of the total geographical area 329 million ha, 143 million ha is under cultivation, of which 108 million ha area is rainfed (75%) contributing about 44 percent of the total food grain production in the country and supports 40 per cent of the

population. bulk of pulses, oil seeds, millets, coarse grains and commercial crops like cotton and ground nut etc, are accounted by the rainfed agriculture. Thus, dryland holds a great prospect of contributing substantially to country's food production and unless the production from these areas increases, the real breakthrough in agriculture may not be possible.

Thus water and soil constitutes the vital resources of the country. These two resourses nourish anbd support the plant and animal life. The prosperity and welfare of humenity is also depending on water, which is irreplaceable resource. Soil, water and vegetation are most important natural resources; they provide food, firewood, fiber and raw materials to satisfy variety of needs of people. Hence, its judicious management is a pre-requisite for overall development of the country. This clearly implies that judicious utilization of soil and water will increase substantially the present level of food grain production. In recent years more attention has been given for soil and water management.

Conceptually watershed is defined as "a geographical area that drains to common point". Watershed management is a holistic approach which aims at optimizing the use of land, water and vageitation in an area, to alleviate drought, moderate floods, prevent soil erosion, improve water availability and increase fuel, foodre and agricultural production on sustain basis. MANAGE (1990) define the watershed management as a stretegy for developing rainfed agriculture on the concept of catchment, on the watershed basis through integrated approach is to use the natural resources like land, rain water and vegitation optimally. Hence processing knowledge about watershed development is essential to ensure sustainability and conservation of netural resources. Keeping in view a study was conducted to access the Cognition level of farmers on watershed development in Unnano district of Uttar Pradesh.

Objectives :

1. to determine knowledge of the farmers about watershed development.
2. To find out relation between watershed development and reseonal profile of the re spondent.

Methodology

The study was conducted in the central region (Unnao district) of Uttar Pradesh. The district Unnao was purposively selected in view of the fact that it has experienced implementation of maximum no of watershed projects. The district Unnao consist of 16 blocks and watershed development programme

were implemented & selected for the study.

In order to facilitate the selection of the villages, list of number of villages were obtained from the district head office and two villages per block were selected randomly by employing lottery method. Thus a total 14 villages viz., Sakhan, Gahauli, Arsena, Newada dhar, Ajgain, Jaitipur, Bhandalhera, Patari, Sikandarpur karan, Manpur, Jhabba khera, Sohon, Jagat khera, and Dhamni khera constitute sample of the study.

A comprehensive list of beneficiaries under watershed development programme were obtained village wise from the district head office and 15 (farmers) beneficiaries from each village were selected randomly. Thus a total of 210 farmers (beneficiaries) constituted the sample of the study. The data was collected with the help of well structures pure-tested schedule by using personal interview and in consultation with various experts in the fields of watershed development and agricultural extension.

Finding and Discussion

The cognition level of farmers have been studied at two levels. Initially awarness of farmers regarding specific watershed practices was studied then it was consolidated in the form of overall cognition level of farmers on watershed development practices. The data in table 1 revealed that majority (60.95 per cent) of the respondents belonged to low level of knowledge and 18.57 per cent corespondents were haveing high level of knowledge about watershed practices.

Table-1: Over all knowledge level of respondents regarding watershed practices.

Sl.No.	Categories	Scores	Frequency	Percentage
1.	Low (Mean - SD)	<16.29	43	20.48
2.	Medium (Mean _+SD)	16.29-22.72	123	60.95
3.	High (Mean + SD)	>22.72	39	18.57

Majority of the respondents were having medium to high level of knowledge about watershed practices, which is approximately 80 per cent, while

very few respondents (about 18%) were having low level knowledge. This can be attributed to high rate of literacy among respondents. Also people intrest in taking up watershed development activities in the region.

Table-2 : distribution of respondents based on profile knowledge regarding watershed practices.

S.No.	Specific Knowledge Statement	Frequency	Percentage
1.	The meteral such as straw, paddy husk, crop residues, leaves, saw dust, etc. are spread on the surface of the land to protect the soil from erosion	147	70.00
2.	Two or more crop are grown simultaneously for countinuous land cover and protection from beating action of rains	122	58.10
3.	The crops with less canopy cover are grown to protect the soil from rain water erosion	104	49.52
4.	the crops are grown across the slope of the agriculture field	146	69.52
5.	The crops are grown along the slope of the land	103	69.05
6.	The cultivation of cereal crops is followed by pulse crops or leguminous crops	210	100.00
7.	In crop cultivation, cereal crops follow the cereal crops only	169	80.48
8.	The bunds are made across the slope of the sloppy land	188	89.52
9.	Earthen bund with stone pitching is made around the gully head to prevent flow of runoff water from upper area in to the gully to check erosion	210	100.00

10.	The trees are planted on the boundaries of crop fields.	188	89.52
11.	The water ways usedfor conducting for surface water in agricultural fields should not be covered with grasses	188	89.52
12.	The animals can be allowed in the specific grazing land after adequate growth of grasses and vegetation	189	90.00
13.	The minimum ploughing is done to create appropriate soil condition for seed germination	210	100.00
14.	One crop is grown repeatedly in cultivable land, year after year	168	80.00
15.	In the fallow fields, the stubbles of crop are not up rooted completely with roots	189	90.00
16.	Grasses should be grown on earthen bunds and check dams	148	70.48
17.	Sloppy ravine land can be converted in to level terraces for cultivation of horticulture crops	143	68.10
18.	Staggered trenching checks surfaces run off nod soil loss in hills	60	28.57
19.	Retaining wall in combination of vegetative barrier is economical and sustainable system of torrent controls	60	28.57
20.	Plantation of lemon, Amla and ber are the best options of suitable land use for degradable wasteland	187	89.05
21.	Green manuring with sunhemp improves soil fertility and organic content in soil	189	90.00
22.	Geo-jute application is the most suitable method to control debris on hill slopes		

	of land slide affected area	128	60.95
23.	Terracing is the ultimate practice of reclaiming ravenous fields for agriculture	105	50.0
24.	Ploughing after the harvest of crops during summer is done to conserve soil and moisture	168	80.0
25.	Excess rain water or run off from the agriculture field is to be collected, stored and used for irrigation	167	79.52
26.	The green gram crop should be cultivated during rainy season before mustard cultivation	210	100.00

The table 2 reveals that majority (100 per cent) of the watershed beneficiaries were aware about the cultivation of cereal crops after pulse or leguminous crop, earthen bunds with stone pitching should be made around the gully head to prevent flow of runoff water from the area into the gully to check erosion, the minimum ploughing should be done create appropriate soil condition for seed germination and the green gram crops would be cultivated during rainy season before mustard cultivation. Soil erosion and runoff of water are major problems of the farming community, farmers readily understand and accept all those practices which either directly or indirectly help preventing these erosions. Along with that the efforts of various extension agencies helped farmers to add to their awareness.

The table also shows thet 90 per cent of the respondents were aware about the animal can be allows in the specific grazing land after adequate growth of grasses and vegetation, in the fallow fields. The awareness of the practice if it is practiced, expected to yield desirable results to the community itself. The table also indicates that 89.52 per cent respondents were having knowledge of the bunds to be made across the slope of the sloppy lands, the tree should be planted on the boundaries of crop field and the water ways used for conducting for surface water in agricultural fields should not be covered with grasses. The table also reveals that 89.05 per cent respondents were aware about plantation of Lemon, Amla and Ber are the best option of suitable land use for degradable wasteland. While 80.48 per cent knew about; in crop cultivation, cereal crops follow the cereal crops only.

The data presented in the table indicate that 79.52 per cent of the respondents had knowledge about excess rain water or runoff from agriculture field should be collected, stored and used for irrigation. Majority (70.48%) were aware about grasses should not be grown on earthen bunds and check dams, 70.00% were having knowledge about the material such as saw dust, straw, paddy husk, crop residues, leaves etc. should be spread on the surface of the land to protect the soil from erosions. Majority of the respondents 69.52 per cent were aware about the crops are grown across the slope of the agricultural and with minute difference 68.10 per cent respondents knew about sloppy ravine land can be converted into level tarrace for cultivation of horticulture crops.

The respondents (60.95 per cent) were aware about geo-jute application is the most suitable to control debris on hill slopes of land slide affected area, 58.10 per cent respondents had knowledge of two or more crops should grown simultaneously for continuous land cover and protection from feting action of rains. While 80.0 per cent respondents were known about terracing is the ultimate practice of reclaming ravenous fields for agriculture.

The respondent (49.52 per cent) had knowledge about the crops with less canopy cover should be grown to protect the soil from rain water erosion, 49.05 perent respondents were knowing the crops should grown along the slope of the land while only 28.57 per cent respondents aware about staggered trenching checks surfaces runoff and soil loss in hills, and retaining wall in combination of vegetative barrier is economical and sustainable system of torrent controls.

Table-3 : Relation between independent variables with knowledge level of respondents in watershed development programme

S. No.	Indipendent variables	'r' value
1.	Age	-0.509(**)
2.	Education	0.445(**)
3.	Irrigation facilities	0.371(**)
4.	Land holding	0.656(**)
5.	Material possession	0.678(**)

6.	Source of information utilized	0.849(**)
7.	Caste	0.472(**)
8.	Family type	0.081
9.	Family size	-0.352(**)
10.	Housing pattern	0.728(**)
11.	Social participation	0.059
12.	Annual income	0.319(**)
13.	Social capital	0.658(**)
14.	Political Administrative Status	0.630(**)
15.	Leadership Style	0.457(**)
16.	Position in family	0.071
17.	management Orientation	0.650(**)

**. Corre;ation is significant at the 0.01 level of probability

*. Corre;ation is significant at the 0.01 level of probability

Table 3 reveals that age and Family size, of the respondents were negatively and significantly co-related with their knowledge level of watershed practices with correlation coefficient r = -0.509, and -0.352 respectively. It was evident that the knowledge level of respondents regarding watershed practices increased significantly with the decrease their age and size of family. The result are in consonance with findings of Raghunandan, (2004), Krishnakumar, (1987), Eswarappa, G. (1991).

The data presented in the table-3 reveal that the education, irrigation facilities, land holding, material possession, sources of information, caste, housing pattern, annual income, social capital, polital administrative status, leadership style and management orientation among respondents were found positively and significantly correlated with their knowledge level of watershed practices as with the correlation coefficint at r=0.445, 0.371, 0.656, 0.678, 0.849, 0.472, 0.319, 0.658, 0.630, 0.457, and 0.650 respectively. It shows that the levels of knowledge, towards watershed practices of respondents were increased with the increase in their education level, irrigation facilities, land holding, material possession, source of information, caste, housing pattern, annual income, social

capital, polital administrative status, leadership style and management orientation. It indicates that respondents with high level of education, good irrigation facilities, large land holdings, better material possession, good sourse of information, higher caste, batter housing pattern, good annual income, share in social capital, best political administrative status, good relationship style, and better management orientation had more knowledge of watershed practices. The findings are in consonance with reportings from Jirli and Gandharappa, (1997), Krishnamohan, (1992) and Kadam et.al., (2001)

Thus the observation confirms the null hypothesis (Ho), thus their is no association between the knowledge level of respondents in watershed development programme with their family type, social participation and position in family.

The statistical results were the basis for rejecting the hypothesis (H_{01}), There is no association between the age, education, irrigation facilities, land holding, material posssession, source of information, caste, family size, housing pattern, annual income, social capital, political administrative status, leadreship style, and management orientation with knowledge level of respondents in watershed development programme.

Thus it can be inferred that out of 17 independents variables, 14 variable viz., age, education, irrigation facilities, land holding, material possession, source of information, caste, family size, housing pattern, annual income, social capital, polital administrative status, leadership style and management orientation exert their influence significantly on knowledge level of respondents in watershed development programme.

Table 4: Multiple regression with selected independent variables related to knowledge level of respondents in watershed development programme

S.No.	Variables	Std.Error	B value	't' values
1.	Age	0.023	0.242	3.335**
2.	Education	0.084	-0.148	-2.562
3.	Irrigation facilities	0.101	0.038	1.115**
4.	Land holding	0.298	-0.304	-4.254
5.	Meterial possession	0.137	0.037	0.633**
6.	Source of information utilized	0.037	1.333	12.896**

7.	Social participation	0.027	0.001	0.043
8.	Annual income	0.064	-0.003	-0.115
9.	Social capital	0.127	-0.168	-3.904
10.	Leadership style	0.177	0.581	17.522**
11.	Position in family	0.171	-0.212	-4.939
12.	Management orientation	0.067	0.742	19.615**

R^2 = 0.772 F value= 114.434
DF=(197), * Significant at the 1.00 level of probability

The results presented in table 4 indicates that these independent variables would account for a highly significant amount of variation in the knowledge about the watershed practices from the above observation 't' test of significant indicates that the regression (B-values) are found to be significant for age, irrigation facilities, material possession, source of information utilized, leadership style, and management orientation, those explained that the utilization of these parameters with full certainty in making sound strategies of watershed development are highly effective. Similar status were obtained by Jirli nad Gangadharappa, (1997), Krishnamohan, (1992) and Kadam at. al., (2001). These six variables put together explained about 77.2% of variation in cognition level of farmers. Only about 23% of the variation is due to factors not explained by the above cited variables. It can before be concluded that these variables have definite role to play in affecting level of knowledge about watershed developmet programme. The ramaining variables under this study were not affecting the knowledge level of watershed development programme.

Conclusion

On the basis of research findings, it can be concludes that, the overall knowledge level (60.95 per cent) respondents was at medium level about watershed technologies. While incase of individual watershed practices, highest 100 per cent of respondents had knowledge about-the cultivation of cereal crops id followed by pulse crops or leguminous crops, earthen bund is made around the gully head to prevent flow of runoff water from uper area in to the gully to check erosion, the minimum ploughing is done to create appropriate soil condition for seed germination and the green gram crop should be cultivate during rainy season before mustard cultivation. The 't' test of significant indicates that the regression (B-values) are found to significant for age, irrigation facilities, material possession, source of information utilized, leadership style and management orientation, those explained that the utilization of these parameters with full certainty in making sound strategies of watershed development are highly effective.

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Role of mass media in health promotion

Tapati Das, V. Priyadashi

Mass media plays avery important role in bringing about a chance in live of people. Mass media is a tool for transfer of information, concepts and idea to both general and specific audience. Mass media information on health related issues may induce changes in health services utilization both through planned campaign and un planned coverage. The actual and potential role of mass media in disseminating health information and the need to affect the health behaviour of public is widely acknowledged. Marshall McLuhan calls media as an "extension of man". Mass media caters to diverse audience ranging from children to adolescents to adults.

The mass media frequently cover health related topics relating to important health issues, health information, targeting changing of health behaviour and health attitude of public. Mass media can be defined as "any written, printed or visual, electronic, audio-visual media developed to reach mass audience". The rationale behind the study is aimed at the role of mass media in health promotion as vast sums are spent annualy for materials and salaries for production and distribution of booklets pamphlets, exhibits, newspapers, articles, radio and television programmes. It provides the best means of imparting the latest scientific information and updates existing knowledge.

OBJECTIVE:

1) To assess the effect of mass media on the utilization of health services.

2) To determine the impact of health awareness od slum dwellers.

Review of Leterature :

Kreps and Thomton (1992) believes that media extends 'people's' ability to communicate, to speak , to others far away, to hear messages and see images that will be unavaiable without media' (1992page-144).

Barnum (1975), Taylor (1957), Pratt (1956), Brightman, et al. (1958), Riedel, Eichhorn and Morris (1959) have presented similar views so far as health education provided by various means of

mass-media is concerned.

Application of mass media :

There are two type of mass media,

(1) Planned campaigns and advertising. This has the advantage of targeting a wide target audience and may be tailored to meet specific objectives.

(2) Unpaid publicity and media advocacy. This may be low-cost campaigns that may seem to provide greater credibility to the target audience.

METHODOLOGY :

The study was designed to assess impact of various health related information. it was conducted in Raghunathpur of Bhubaneswar block. 125 women (age group from 25-40 years) from the slum were randomly selected as sample of the study. The study focused on kind of health related information (information related to disease, mother and child health, sanitation and hygienic ways of living) they get from various types of mass-media.Personal visit, observation and interview methods were followed to collect data interview shedule. A structured questionnaire was prepared on the basis of which information was collected.

Result and Discussion :

All respondent had access to television and radio and 60% of them had access to various print-media that is newspaper, posters, holdings, pamphlets, circulars etc.

The information focused on three major aspects :

I. Information related to disease.

II. information related to mother and child health.

III. Information related to sanitation and hygienic ways of living.

Table - 1 : Information related to disease

N = 125

Sl. No.	Subject matter	Audio (F)	Media (%)	Print/ (F)	Visual (%)	Audia (F)	Visual (%)
1.	AIDS	90	72	55	44	125	100
2.	TB	47	37.6	31	24.8	96	76.8
3.	Diarrhea	15	12	17	13.6	43	34.4
4.	Cholera	15	12	17	13.6	43	34.4
5.	Malaria	70	56	41	32.8	92	73.6

6.	Cancer	72	women get information related to
57.6	29	23.2	various diseases (both communicable
108	86.4		and non-communicable) from the
7.	Swine flu	113	different mass-media as reflected in
90.4	40	32	Table - 1. It is clearly visible that TV is the
125	100		most accessible mass-media. Number of

The study clearly shows that the subjects responded positively in getting information about disease like AIDS, TB, Diarrhea, Cholera, Malaria, Cancer, Swine flu. Disease related information were least reachable to slum women through visual/print media due to illitreracy.

Table - 2 : Information related to mother and child health.

N = 125

Sl. No.	Subject matter	Audio (F)	Media (%)	Print/ (F)	Visual (%)	Audia (F)	Visual (%)
1.	Family planning measures	52	41.6	21	16.8	86	68.8
2.	Immunization	125					
100	43	34.4					
125	100						
3.	Nutrition of	49					
39.2	12.	9.6					
80	64						
	expectant mother						

The study reveals that the slum women have been aware of talking their children and expectant mothers for immunization, good nutrition during pregnancy and location. With regard to family planning measures, the study showed that 86 no. of subjects recived information from audio-visual media, 52 subject from audio media and 21 from only print media. It was found that 125 subjects got information about immunization for children and expectant mothers from both audio media and audio-visual media. Mass media were found to be good source of information related to the importance of good nutritional requirment of expectant mother. Above 80% subjects expressed positive response for audio visual media in regard to this.

Sl. No.	Subject matter	Audio (F)	Media (%)	Print/ (F)	Visual (%)	Audia (F)	Visual (%)
1.	Use of toilets	44	35.2	0	0	88	70.4
2.	Washing hand before eating	30	24	17	13.6	61	48.8
3.	Sewerage system	12	9.6	0	0	39	31.2
4.	removing of flies & mosquitoes	8	6.4	13	10.4	87	69.6

5.	Dumping garbage	41
32.8	0	0
40	32	
6.	Stagnant water	36
28.8	0	0
78	62.4	

the study also attempted to find out what kind of knowledge and information the mass-media are providing in relation to sanitation and hygienic of living. In response to questions regarding use of toilets, washing hand before eating, sewerage system, removing flies and mosquitoes, dumping of garbage and stagnant water the subjects were found to get information mostly from audio-visual media, which are 88,61,39,87,40 and 78 numbers of respondents respectively. Again here visual media was the least approaching tools in this matter.

Conclusion :

To conclude the use of mass media in health promotion is widely used locally, regionaly and internationally. But when the target group is slum dwellers 'visual media' has least application.

A more holistic approach should be followed in order to bring about change in health behaviour and attitude of people.

Moreover, the use of radio, television, films, projectors, palmhlets, talks, drama,plays, song and dance along with social interactions covering all dimensions of health will be more effective. The goal of "Health For All" and the Millennium Development Goals and Health (MDGs) can be fulfilled by use of emotional and psychological content in discussing health issues and making it more relevant to social and cultural setting.

Reference :

- *Bandopadhyay Ratna, Goswami Sarbani, Nausheen Sabahat (2009) " Women's Health Literacy and health Promotion".*
- *Brenner Donald J., Quesada Gustavo M. (1987) "The role of mass media in health communication.*
- *Health education and mass media efforts- The Indian Express.*
- *Kalantar T. "Role of mass media in reducing health risks and promoting health life- style" (International Conference on ADIS (15th : 2004 : Bangkok, Thailand)*
- *Mass media Enclopedia of Public Health.*
- *Pattron Deryck. D "mass media in Health promotion" Google.com.*
- *William Griffiths, Andie L. Kntutson "The role of mass media in public health".*

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Women Workforce in the Informal Economic of Orissa : Issues and Challenges

Dr. Chinmayee Satpathy
Plot No -708, BJB Nagar
Bhubneswar-751014

Background of the Problem :

In the era of growing industralization and urbanization, women workforces are entering into the world economy in huge number. Globalization and the concept of free trade have enhanced the opportunities for prosperity of women but at the same time have also increased the women's vulnerability to adverse life situtions. Through, women are increasingly involved in various economic activities now days, less attention is paid to the issues relating to social insecurity, unsafe working conditions restricted occupational choice withlow irregular income, health hazards, social indignity etc. Hence, there is increasing susceptibilities of women workers to ill health, job insecurities, and poor socio-economic condition due to the absence of regulated working condition, lack of socio-legal mechanism and formal legislation to protect their rights and intrests. Even though the women don't possess sufficient technical knowledge and skill to work and are economically less active then their male counterparts, they are concentrate to work outside home under economic strain and circumstantial compulsion. Economic insecurity in the form of extreme poverty compelled them to work in low wages and hazardous working condition in order to supplement their family income which in turn makes the women easy prey and victim of violence. They can hardly raise their voice and lodge complaint with the concerned authorities against such exploitations and ill treatments of male colleagues, middlemen and contractors due to fear of losing job and consequent financial insecurities. According to the ILO report "More women are working then ever before, but they are also more likely then men to get low-productivity, low-paid and vulnerable jobs, with no social protection, basic rights or voice at work." (The Hindu7/3/08).

Women informal workers can be defined as the workers who are not

employed by the state or any other bodies regulated by the state and have no fixed income, or regular wages which is procted under law. There are three types of informal workers :

i.) Paid worker, such as home workers or domestic workers,

ii.) Seasonal or temporary workers who work in agriculture, fishery, forestry and live stock production etc;

iii.) Self-employed, for e.g. shop owner street vendor, and owners of micro enterprises.

the main aim of study is to examine the condition of women informal workers in the unorganized economy of the state especially in the rural segments. The study is multidimensional which deeply probe into various aspects like socio-economic profile of working women, nature and extent of participation, factors affecting their status, contractual nature of work (unskilled and semi-skilled), low irregular payment, unsafe working conditions, lack of economic and social security, their cause and consequences, identification of major problems and their magnitude. The study would also inquire if the women workers are devoid of getting their basic human rights and dignity of work, or subjected to various kinds of deprivation, exploitation and unfair practices, gender discrimination in terms of age, sex, wage etc. All these factors are necessary for proper assessment to arrive at valid conclusions and give necessary feedbacks for formulation of policies and development actions.

Significance of Study :

Absence of reliable database, inadiquate policy measures, acute socio economic problems and legislative measures require the study to be undertaken in order to explore the real situtations of women informal workers. It is also worth mentioning that the women workers in this sector are large in number in comparision to women working in the organised sector and are more vulnerable to various disabilities and diprevations which are to be specifically focused in the study. The study is gender inclusive in the sence it focuses upon gender stereotyping in wage distribution, nature of work assigned to the female workers, and social attitudes towards them. The study is crucial in the sense that is not only gives deep insight into the problem but will give valuable suggestions for formulation of relevant policies and legislative frmework for protection of intrests and regulate their working conditions.

The resarch study largely covers large numberof women informal workers working in various sector like agriculture,

industries and service sectors etc. The study primarily focuses upon various important aspects relating to socio economic profile of the women respondents, literacy level, working conditions, and type of work and wage structure, welfare facilities for available for women workers etc. The study illustrates the nature of discriminations and atrocities faced by women at their workplaces on the basis of their sex, age, place and category to which they belong. The study also highlight that sexual abuses, rapes & sexual harassments etc which are unreported to the authorities, police etc.

The study is significant for the following reasons :

1. Majority of women workers constitute informal workforce in the state who work under irregular low wages, job uncertainty, hazardous working conditions social insecurity;
2. Due to the absence of adequate training and skill enhancement they get marginalized in the process of increasing mechanization and rapid industralization.
3. Yet there is no legislation that has been framed at the state or national level to dafeguard the rights and interests of women workers in the unorganised sectors;
4. Feminization of poverty is more distinctly visible in the lower rung of the social ladder especially in case of women informal workers;
5. The violation of humen rights is rampant in case of women informal workers where reporting is very slow.

Coverage of Research

The study offer an elaborate document covering a wide range of data on situational analysis of women informal workers of different categories working in various sectors including agriculture, industry and service sectors in the state Orissa.

The present study is broadly divided into two parts.

I) Theoretical part that is derived from relevant literature collected from journals, book review, and work done by various scholars in the concerned field etc.

II) Empirical part that would deal with relevant baseline information collected from respondent through direct interactions which will provide feedback to the problem concerned.

Ethnographic Composition

The main objective of study is to

provide better understanding of the problem through collection of relevant information to enhance the scope of knowledge in the area of research.

- To explore the real life situation relating to the socio economic background of women workers, level of literacy, marriage and family type etc;
- To study the nature of work of women workers, occupational mobility, settle ment pattern, nature of migration, its cause and consequence;
- To study the factors affecting the status of women informal workers, gender discremination, explotation and violence against women at workplace;
- To provide relevant feedbacks for policy reforms for the welfare of women workers and effective implimentation, development measures to be undertaken by the state(provincial) and union government;

Important Issues :

The issues relating to the situation of women informal workers to be disused are as follows.

1. Socico economic profile of women informal workers
2. nature of Employment, work duration and poor working condition (Temporary employment)
3. Settlement pattern (Labor market Situation, Problems of migration)
4. Level of Literacy and Awareness
5. Health hazards and Safety Measures
6. Limited access to Resource, Capital and assets
7. Abject poverty and Poor life Standard
8. Lack of traning and Skill development
9. Lack of opprtunities and Organizing ability
10. Gender discrimination and violence against women at workplce
11. Legislation and Social Security measures and policy Intervention

Socio-economic profile of Women Informal Workers

The socio economic profile of women informal workers mainly includes demography, sex ratio, life style, socio economic background, level of literacy, marriage a7 family, nature of work (unskilled or semi skilled), working conditions, major problems at worksites, their cause and impact; income potential and distribution of wages, job

setisfaction, employer-employee relationship, settlement pattern, nature of migration, extent of gender inequality; gender discrimination and violence against women at workplace; existing policies and its implementation for the welfare of women workers.

Nature of Employment :

The involvement of women workers in different unorganized sectors mainly include

i) Agriculture and Allied Sectors

ii) Small Scale industries, Factories etc (Brick Kiln Factories , Matches Factory, Food processing industary)

iii) Mining & Querying (Stone Crushing, Construction works etc)

iv) Dairy & Animal husbandry (Pisci-culture, Goatery, Broiler etc)

v) Handloom and Handicrafts

Settlement Pattern :

Due to temporary nature of work and job insecurity majority of workers in the informal sectors migrate from rural to urban areas in search of employment. Sometime the nature of works are seasonal in nature where the workers have to return back to their native palces after completion of work and go again at the time of need. In such cases the condition of women workers are more unstable and precarious in comparison to male workers.

Level of Literacy and Awareness :

Majority of women workers in the informal sectors are illiterate. Their level of awareness is very low. They are hardly aware of any social legislation or protective measures to safeguard their interests.

Irregular and Low Wages

The women workers in the informal sectors receive low wages which is paid irregularly on contractual basis. Due to abject poverty and financial misery they are unable to negotiate with the middle men or contractors for improved job security.

Health Hazards and Poor Working Condition

The women workers undergo ample stress and strain due to prolonged working hours, occupational health hazards, which adversely affect their physical and mental health. No safety standard is maintained, health insurance, maternity benefits or accidental compensation is given to them. Poor working environment, temporary housing at the worksite with no sanitary facilities makes the situation more precarious and dangerous.

Lack of Social Security and Legislation

Women worker in the informal sectors face lot of social and economic

constraints due to the invisibility of the economy and no protective legislation or effective policy measures to address their problems. Poor economic conditions limit their potential to access social security, and health care facilities which lead to ill health and adverse life situations.

Limited access to Resources, Capital and Assets

Home based women workers are poor and do not have collateral security to access to credit from commercial banks or financial institutions. Though some attempts have been made to initiate and organize community-based micro credit scheme but these efforts are still limited in scope and insufficient to meet the existing needs.

Abject Poverty and Poor Life Standard

Women run enterprises are usually small, labour intensive with low levels of infrastracture development and low or medium skill development. Women are very often trapped in the informal debt market with high interest rates narrow down their choices of economic activities results in low productivities and create a vicious cycle of poverty and debt which is difficult to break.

Lack of Traning and Skill Development

Table programme relating to enhanument of entrepreneurial skill of informal women workers are very rare which often do not incorporate gender sencitivity and don't take into account the constraints faced by these illiterate or semi illiterate women. Household works consume more time and energy which debar them becoming skilled and technically competent like male counterparts.

Lack of opportunities and organizing ability

Informal women workers are not sufficent aware of their rights and privileges available to theme at their workplce. Lack of organizing capacities, financial and social constraints limit their potential to continue to have access to resource, services and promotion which pull them into the cycle of abject poverty and vulnerability.

Settlement Pattern, Problem of Migration

Poverty includes migration. Hence intensity of migration is higher in the poverty stricken areas. Both men and women migrate from rural to urban areas in search of employment where they are more unsecured and unsafe and have less access and cotrol over resources. Burdened with economic constraints the womenfolk suffer most due to explodation and harassment by middlemen or contractor.

Gender Discrimination had Violence

against Women

Discrimination on the basis of gender perests in awider range in the informal sectors in terms of age, wage, Pre-fixation of assignment etc. Women workers face rampant sexual abuse and harassment at their workplace by their male colleagues, middlemen, contractors and employers as well. The reporting regarding occurrences of the incidences is quite low.

lamination of Study

There are several limitations of the study which include non availability of adequate information on the issue for comprehensive analysis and documentation, communication gap due to language problem, problem of transpotation and communication, hesetation on the part of respondent to provide right information etc.

Conclusion

The conclusion drawn from the study gives deep insight into the problem in following aspects.

1. The informal sector is capable of providing employment is sizable number of unemployed and under-employed youth especially the women especially those who belong to SC & ST category.

2. Unlike men, women assume dual responsibility at home as well as at workplace which makes them overburden. As a result of which they face multiple role conflict which make their life miserable and pricarious.

3. Women workers engaged in the informal; sector are mostly illiterate and ignorent since it does not require high professional skills or education which gives opportunity to the uneducated women to get easy entry into it.

4. The women workers belonging to SC & ST communities are more in number. These women workers have less bargaining power since they are under absolute poverty, illiteracy, unskilled and belong to low income group.

5. The women in the lower rung of the social ladder suffer most due to various kinds of disabilities, deprevations and discriminations at their workplace. Wage discriminations for women persists and it is more prevalent in the rural and tribal areas then in urban areas.

6. Most of the cases on atrocities against women workers at work place go unreported due to the fare of losing job, ignorance of women workers regarding legislative rights and also indifferent attitudes of Government machineries or adverse actions taken by the police.

Suggestions and recommendations :

i) There should be provisions to make the women workers sufficiently well informed about their rights and privilages through various sensitization programme from time to time; and the male workers should be made aware about gender

sensitive issues problems;

ii) Fromation of regional and national network of informal workers and building organizational framework for membership in order to create a sense of solidarity or bilongingness and make them well informed about their rights and privilages;

iii) Recognition to be given to the women's contribution to the economy, value addition to work, handling issues through diagnostic, curative, corrective and reformative measures for redness of their problems;

iv) Forming social legislation state/ national policy for regulation of employment, Unsure social security, livelihood rights (job security), safe working conditions, equitable share of work for giving fair justice to women and prevent exploitation and harassment of women workers at the work place;

v.) Focus should be given on humanitarian aspect compensation to be given in the form of accidental benefits, health insurance, day care provisions for children, housing, sanitary and welfare facilities.

vi) The Government or the employer should provide adequate training facilities for providing necessary skill inputs to the women workers at regular time interval to make them skilled and trained in the work in which they are involved.

Through the study deals with area specific issues and problems, the idea and experiences gained from the study can also provide effective solution measures to the similar issues and problems raises in other arises in other areas at different times. Hence the lesson learnt from the study will give valuable inputs to the policy makers for best practices to be adopted to mitigate the problem through micro level planning and effective implementation. The study will also serve as a pathfinder and idealistic model for further researches and investigation.

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Village level planning for agriculture development

Dr. L. N. Kar.

Although more than 70% people of Orissa are directly or indirectly depending upon agriculture for a living, it is a matter of great concern that we are not able to produce enough to meet our food requirement. It is also no secret that Orissa is depending on other states for pulses. oil-seeds, potatoes, onions, bananas, fruits, flowers, and many types of vegetables. Again, many farmers who still continue to stick to faiming with much difficulties do not get enough profit. Many such farmers are shifting to other professions ofL migrating to urban or industrial places in search of employment.

Since independence, many schemes and projects have been implemented with an aim of increasing agricultural production and thereby improving the living condition of the farmers. But all these programmes have failed miserably to solve problems of the farmers due to lack of proper management and aduinistratios support. As a result, our agriculture production is not keeping pace with our demand, Unless we try sincerely to help our farmers solve their pressing problems through an Integrated programme, there is no doubt that we will certainly face acute food shortage in future.

The most important problem standing as barrier against food production is absence of an integrated plan for agricultural production and to make agriculture a remunerative enterprise. Sometimes back, the state government had formulated a new agriculture policy, but that could not be implemented due to absence of clearcut direction for its implementation. Even now, our agriculture department does not have a plan for cultivation of different types of crops in each district and in each block.

In order to increase agriculture production, it is absolutely necessary to consider the following points and streamline the extension strategy for efficient management of production programmes.

1. To provide modern technology?

We have plenty of scientific recommendations available for development of agriculture, but our farmers are not able to apply these technologies due to ignorance, lack of funds and proper administrative support. Our agriculture department also does not have any extension programme for transfer of technology and motivating farmers for adoption of improved practices. Further, the government also made a blunder by transferring nearly 2000 village level agriculture workers to the control of Panchayati Raj Department, depriving farmers to get any help from them. It is high time to get them back to the agriculture department and strengthen extension acti-vities for educating farmers about modern technology. It should be kept in mind, that under present situation. Governor or remote control system will have very little impact on our farmers. Personal contact, group discussion, skill oriented training, field days and demonstrations will be more effective in convincing farmers for adoption of remunerative farming

2. DevelgCTnent of required infrastructure:

Certain important infrastructures are very much essential to accelerate agricultural production, such as irrigation, electrification, road and transport, cold storage, godown and agri-processing units At present hardly 35% of our agricultural land has irrigation facility, we do not have adequate number of cold sto rages or go downs or processing units. The problem is more acute in the tribal areas. Hence, all essential infrastructures should be provided on priority basis to facilitate agricultural production,

3. Availability of critical inputs:

Critical inputs such as improved and high yielding seed, chemical fertilizer, plant protection chemicals, improved implements should be made available in time includ-ing production credit. Attempt should be made for production of seeds by the progressive farmers in order to meet the ever increasing demand for quality seeds.

4. Marketing of Agricultural products at a remunerative price

It is a fact that, our farmers -re not able to dispose off their products at a remunerative price. Rather they are exploited by middlemen and forced to sej.1 at a distress price. Farmers should be helped to dispose off their products at a reasonable price. Even farmers should be encouraged to grow crops which could be exported* Minimum support price should be fixed in such a manner which will provide attractive income.

5. Co-ordination among various departments:

Farmers have to keen contact with various departments and agencies such as Department of Agriculture, Horticulture,

Irrigation, electrification, credit agencies, marketing and block organizations. But unfortunately there is hardly any co-ordination among all these departments and farmers have to move from one place to another in order to get help from them. Further, farmers are also harassed and exploited in the hands of corrupt and unsocial elements. Hence attempt should be made at block, district and state level to main-tain co-ordination. B.D.O. at the block level. Deputy Director of Agriculture at the district level and Agriculture produc-tion Commissioner at the state level may be entrusted to function as Co-ordinator in order to help solve problems of the farmers.

6. Planning for tori culture Develonnent:

It is a fact that, we do not have an integrated plan for agriculture development in our state. For this reason our farmers are not getting enough opportunity to increase production as per the requirement of our state. For example, rice is grown in 40 lakh hectares and our production is only 70 lakh tonnes. But if our farmers will adopt scientific farming methods, they can easily increase the average yield of rice from 15 quintal per hectare to 30 quintals per hectare thus increasing the rice output upto 132 lakh tonnes. To overcome these difficulties, we should give importance to village level planning and its proper management.

First, an estimate be made of various agricultural products, required to meet our demand such as rice, pulses, oilseeds, potatoes, onions, bananas, fruits and vegetables, Besides, there should be also target for production of cash crops like sugarcane, jute, cotton, spices etc. In addition to our own requirement, the plan should include additional production for export or processing etc. the next step should be to decide about the crops to be grown in each district and in each block and area to be covered under each crop. Once this is decided, the farmers should be given skill oriented training on the technology of production. Extension activities should be streamlined and extension personnel should be appointed at Panchayat and Block level to render all types of help to the farmers. Since attempt should be made to provide necessary infrastructures and inputs along with facilities for remunerative marketing. This should be done at the level of directerate of Agriculture.

7. Planning from village level:

Everybody has been talking about grass root planning, but no attempt has been made so far to implement it. But this is the only way to involve our farmers to increase production and thereby to improve their quality of life. Depending upon the location, climate, soil type, availability of infrastructures, crop planning should be done for each village. Farmers may be advised to grow varieties of crops in Kharif, Rabi and summer as per their convenience and requirement. This could be done with the help of the VAWs and Junior Agriculture Officers, in consultation with the farmers. Special attention should be given to the poorest farmers so that they will not feel neglected. If planning is done for each village, it will ultimately help planning for all the Panchayats and all the blocks. While taking final decision at the block level, creation of infrastructures such as road, irrigation, electricity, cold storage, godown, market etc. should be also decided, the greatest advantage of this type of planning is that all the villages and farmers will be covered under this programme. j.a.os. and District Agriculture Officers under the guidance of Deputy Director will be entrusted to look into planning and its execution with the co-operation of other line departments. Of course such type of planning will only be successful with active support of the district and state administration. Our district collectors should be involved in such type of planning and its implementation. Agriculture production commissioner, secretary of Agriculture and director of Agriculture should take active interest and provide necessary guidance. They should visit villages, interact with farmers, identify their problems and take appropriate action for solution of their problems. Special attention should be given to the tribal farmers by visiting the tribal areas and extending all types of help.

For successful implementation of such type of programme. our extension system need to be strengthened. VAWs should be placed in each Panchayat, They should be provided with resi-dential quarters. The residence-cum-office of the VAWs will be used as place of contact for farmers.

At present many schemes are operating under the department of Agriculture but needless to say that most of the farmers are completely ignorant about these schemes. As such, they are not able to get any help from these schemes, unless our farmers are helped to raise their income to a reasonable level, we can never call our state a developed one. Farmers can only be able to raise their income by practising scientific farming and getting

remunerative price for their products. This can only be achieved by giving importance to the village level planning and its successful execution. Agricultural scientists, extension personnel and personnel of the adtalni strati on must move into the villages interact with the farmers, identify their problems and sincerely try to solve their problems. Our administration has neglected our agriculture and our farmers for a long time. Time has come to realise this mistake and come close to the farmers and help them solve their pressing problems. Once this is done, our farmers will definitely hope for a good time.

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Technological adoption gaps perceived among wheat farmers of District etawah (up)

Sarvesh Kumar [1] R.K. Kushwaha [2] A.K. Singh [3]

INTRODUCTION

The latest estimated demand for wheat production for the year 2020 is approximately 87.5 million tons, or about 13 million tons more than the record production of 75 million tons harvested in crop season 1999-2000 **(Joshi *et al.* 2007).** The country is going to witness record production of wheat consecutively for the second year with output estimated to surpass 78 million tones. Last year, 78.57 million tones of wheat was produced, which was the highest ever in the history of India.[6] The GOI has set the 2010 wheat production target at 79 million tons, marginally lower than the 2009 production of 80.6 million tons. [10] At present wheat price is of Rs 1080 per 100 kg. [4] U.P. is a state located in the northern part of India. With a population of over 190 million people,[3] it is India's most populous state, as well as the world's most populous sub-national entity. With an area of 93,933 sq. mile (243,290 sq. km), Uttar Pradesh covers a large part of the highly fertile and densely populated upper Gangetic plain. Uttar Pradesh is the second largest state economy in India.[5] Although Uttar Pradesh has first place in wheat and sugarcane production with productivity of pulses.Etawah is one of the leading districts of Uttar Pradesh in wheat production and had area under wheat 83.901 hectares with production of 249.658 tones and Productivity (yield) 2976 kg per hectare in 2001-02. [10] Here still exists a wide gap between the potential yield achieved at experimental farms and what the farmers are getting in their fields. Therefore, it is necessary to identify gaps in adoption so that it could be basis for technical planning of demonstration and training programmes. Keeping the above fact in the view this study was conducting to certain the existing technological adoption gaps and factors associated with wheat production technologies, under the following objectives-

[1]Research scholar, [3]Prof. & Head, of Extension Education, I. Ag. Sc., BHU, Varanasi-221005

[2]Associate Professor, Department of Agricultural Extension, C.S.A.U.A&T, Kanpur-208002

1. To analyze the technological adoption gaps associated with the wheat crop in Etawah.

2. To identify the causes for technological adoption gaps in relation to wheat management

RESEARCH METHODOLOGY

The study was conducted in Uttar Pradesh during Rabi season of 2007. Out of 70 districts of the state (**Census, 2001**) Etawah was selected purposely on the basis of major wheat growing area for the study. Out of three agro-ecological situations (AESs) one namely Yamuna – Sengar region (Ghar) was selected for this study. Out of 5 blocks of this region 2 blocks namely; Saifai and Jaswantnagar were purposely selected. A total of 80 wheat growers i.e. 40 from each block were randomly selected as the respondents. Information about technologies adopted by the wheat cultivators were collected personally through semi-structured interview schedule. Then data were analyzed through percentage statistical tool. Adoption gap was conceptualize as if there was 50 per cent and above variation in adoption of recommended practices for wheat cultivation considered as ***full gap***, 20 to 50 per cent variation as ***partial gap*** and 10 to 20 per cent variation was considerable and considered as ***no gap*** in technology adoption. In the study of technological adoption gap, twelve important wheat cultivation practices namely sowing time, varieties, seed rate, seed treatment, manures, fertilizers, method of NPK and FYM application, micronutrient, intercultural operations, water management, plant protection, harvesting and post harvest measures were considered. The gap has been expressed in per cent and presented in result and discussion.

Table: 1 TECHNOLOGICAL ADOPTION GAPS RELATED TO WHEAT CULTIVATION

S.No	Operation	No Gap		Partial Gap		Full Gap	
		No. of farmers	% of farmers	No. of farmers	% of farmers	No. of farmers	% of farmers
1	Sowing time	45	56.25	35	43.75	0	00
2	Varieties	11	13.75	59	73.75	10	12.5
3	Seed rate	0	00	80	**100**	0	0.0

4	Seed treatment	3	3.75	5	6.25	72	**90**
5	Manures	6	7.50	74	92.50	0	00
6	Fertilizers	0	00	77	**96.25**	3	3.75
7	Method of (NPK&FYM) application	0	00	75	**93.75**	5	6.25
8	Micronutrient	0	00	6	7.50	74	**92.50**
9	Intercultural	5	6.25	48	60	27	33.75
10	Water management	57	**71.25**	19	23.75	4	5.0
11	Plant protection	0	0.0	4	5	76	**95**
12	Harvesting	67	**83.75**	13	16.25	0	00

Table: 1 indicates that in case of wheat cultivation, use of plant protection, micronutrients and seed treatment were almost negligible at the farmer's level because 95 per cent, 92.25 per cent and 90 per cent of farmers were having full gap in these recommended practices respectively. Whereas, seed rate and fertilizers were found either higher or lower in case of all the respondents and thus, accepted as 100 per cent and 96.25 per cent partial gap by the farmers respectively. 93.75 per cent partial gap showing farmers, who were not applying method of (NPK&FYM) application as per recommendations. The practices such as harvesting time, water management, registered 83.75 and 71.25 per cent no gap means they were very near to scientific recommendations. Other four remained variables have also been presented in the above table.

CAUSES RESPONSIBLE FOR TECHNOLOGICAL ADOPTION GAPS IN WHEAT

Majority of farmers addressed to weak agricultural information communication systems main reasons for non adoption of efficient technologies in wheat cultivation. Simultaneously, non availability any reliable extension systems like Village Knowledge Centers, Common Service Centers, Kisan Call Centers etc. and among many more respondents, low level of education,

unwillingness, unawareness, lack of confidence about purity of seeds and poor economic condition were the considerable reasons for low adoption of technologies. Addition to these farmers were facing many constraints in adoption of sophisticated technologies these were; inadequate extension facilities, poor marketing and storage facilities and incentives in the study area which adversely effects per unit wheat production resulting no adoption of new technologies. Farmers also reported non-availability of disease resistant varieties and labour as the major problems. And no support price fixed by the government for local mandies and buyer therefore, farmers are forced to sell their produce at very lower price in domestic markets. **Singh *et al.*** (2008) also reported similar kinds of causes among wheat growers of Saharanpur and Bulandshahar district of western Uttar Pradesh, India, in and by **Anuranjan *et al.*** (2007) during fields frontline demonstration (FLDs) and general demonstrations (GD) were conducted by Birsa Agricultural University, Ranchi, India, which also support this study.

CONCLUSIONS-Technological adoption gaps were found mostly in the operations like plant protection (95 per cent, full gap), use micronutrients (92.25 per cent, full gap) and seed treatment (90 per cent, full gap), seed rate (100 per cent, partial gap), fertilizers (96.25 per cent, partial gap), and method of (NPK&FYM) application (93.75 per cent, partial gap). It indicates that there is need to update knowledge of wheat cultivators regarding these variables and strengthening agricultural information communication systems with government support policies like support price of wheat, storage facilities and marketing infrastructure at domestic level. This will increase the flow of information of improved farm practices leading to higher technological adoption and income small and marginal farmers. The area was found to be high potential to grow both tuber and cereals crops as well.

References

1. *Anuranjan; Singh, R. P. and Jha, B. K. (2007). Constraints in adoption of improved wheat production technologies. Journal of Research, Birsa Agricultural University, Ranchi, India Vol.* ***19****: 2, pp. 225-231.*

2. *Arya, B.S. and Malik, S.K. (1996). Technological gap adoption of wheat and sugarcane production technology in Meerut and Muzzaffarnagar district. of UP. Indian Sugar, vol.45 (1):881-886.*

3. *Joshi, A. K.; Mishra, B.; Chatrath, R.; Ferrara, G. O. and Singh, R. P. (2007).Wheat improvement in India: present status, emerging challenges and future prospects. Euphytica, many Springer Science + Business Media, Dordrecht, Netherlands, Vol.* ***157****: 3, pp. 431-446*

4. *Singh, M. P.; Sharma, B. K.; Singh, S. P.; Singh N. and Kumar, S. (2008). Indicators influencing production gap of sugarcane and wheat crops in Western Uttar Pradesh. Journal of Farming Systems Research & Development, Farming Systems Research and Development Association, Meerut, India, Vol.* ***14****: 1, pp. 78-83.*

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Training Needs of Farmers and Extension functionaries on IPM in vegetables

* ***Umasankar Nayak*** ** ***Sujit Kumar Nath*** *** ***Saswati Pattnaik***

5. *Swaminathan, M.S. (2007). Time magazine, IDRC Speaker Series at Canada's International Development Research Centre on Friday, July 13.*

Training is essential to enhance motivation, create confidence, improve skill and attitude and inculcate efficiency in an individual so that one can perform more effectively and meaningfully. A training programme will yield the desired result if the training needs of the target groups are assessed carefully. However, in most of the cases training is conducted in a very ad-hoc and routine way without proper identification of training needs of target groups resulting in wastage of time and money. A Training need may be described as existing in any time, an actual condition which differs from a desired condition in the human expect all organizational purpose or more specifically when a change in present human knowledge, skill or attitude can bring about the expected purpose. Schematically training need has been defined by Mishra (1990) in mathematical equation as under.

Training needs = (Job Requirement – Present Performance) + Development needs.

Training on improved technology is now regarded as one of the important critical inputs for the farmers in enhancing the production and productivity as faring with traditional methods are no ore productive an profitable. Similarly tie to tie up gradation of technical competency is regarded as an important factor in improving the subject matter knowledge and professional competence of the extension personnel for effective transfer of technology to the farmers. Hence, identification of the training needs of farmers an extension functionaries is one of the important factors for effective transfer of a specific technology.

Keonjhar is one of the tribal dominated districts of Orissa situate in the North Central agro-climatic zone an

vegetable base faring system is one of the predominant faring system of the district. The climate and soil of the district is congenial to grow diverse vegetables through out the year. But heavy incidence of insect pest is one of the major production constraints that most of the farers are confronting with. It not only reduces the yield but also impairs the quality thereby decreasing market acceptance an profit. Farers mostly rely on chemical pesticides as the first line of defence against pest incidence and lack of adequate knowledge, skill an awareness leas to its indiscriminate application resulting in no. of adverse fields on health an environment. Pesticide dealers are still regarded as the primary source of information regarding the selection of pesticide an application procedure. To overcome these problems and to make vegetable faring ore productive and profitable in harmony with the ecology and environment, adoption of Integrated Pest Management (IPM) approach is the best viable option. IPM as applied in agriculture is ideally the use of most effective, economically safest, ecologically sustainable and socially acceptable combination of physical, chemical and biological methods to limit the harmful effect of crop pests. However, capacity building of farers and extension personnel regarding different components of IP is the prerequisite to spread the area under IP. If the farers an extension officials are trained properly, they would perceive, understand and act upon properly. Keeping this in view a study was undertaken to assess the training needs of farmers an extension personnel of agriculture an horticulture department on different aspects of Integrated Pest management (IPM) in vegetables.

Material & Method:

To assess the training needs of the farmers the study was conducted in Basudevpur and Bhalupali of Sadar block and Badadhanuryapur and Jamunaposi villages of Patna block an total 120 farmers were selected as respondents with 30 farmers from each villages. Besides 40 extension functionaries (JAO, JHO and VAW) of these blocks were interviewed to know their training needs on vegetable IPM.

The villages were purposefully selected as vegetables are extensively cultivated there and insect pest problem is one of the important production constraints resulting in the huge economic loss of Farming community. The data were collected through structured interview schedule and analysis was done to tabulate and interpret the data.

Twelve specific subject matter areas of vegetable IPM were identified through review of available literature and experts' opinion which reflects the major training needs of the farmers. Training needs of farmers were assessed using

three point rating scale viz. much needed, somewhat needed and least needed and were quantified by assigning corresponding weightage of 3, 2 and 1 respectively. Assessed training needs were ranked using their mean scores. Similarly 10 components of vegetable IPM were identified for the extension functionaries and percentage analysis tool was used to assess their training needs.

Result and Discussion:

a)Training need assessment for farmers:

The training needs of the farmer in vegetable IPM are portrayed in Table-I. The average mean score was found to be 2.43 which was used to categorize the training needs into more important and less important ones. The subject matter areas that had mean score above 2.43 were considered as more important and below 2.43 were considered as less important. The data which are presented in Table-I.

TABLE–I: Training needs of farmers on vegetable IPM (n=120)

Sl. No.	Major subject matter areas of vegetable IPM	Weighed Mean Score	Rank
1	Pest specific effective safer pesticides	2.92	I
2	Preparation and application technique of neem and other botanical pesticides.	2.84	II
3	Intercrop, trap crop and boarder crop for pest management	2.82	III
4	Use and installation technique of pheromone trap, light trap and sticky traps	2.70	IV
5	Seed, seedling and nursery treatment	2.62	V
6	Insecticide spray fluid preparation and spraying technique.	2.51	VI
7	Identification of pest, damage symptoms and natural enemies.	2.34	VII
8	Balanced dose of fertiliser	2.28	VIII
9	Resistant variety	2.16	IX
10	Water management	2.11	X
11	Collection and destruction target pests (egg mass, larvae and adults) and damaged plant parts	1.98	XI
12	Summer ploughing and other cultivation technique	1.92	XII
	Average Mean Score	2.43	

During the study it was observed that most of the farmers are not adopting IPM practice to minimise the pest incidence in vegetables and because of their faulty approach cost of plant protection has increased with many adverse impact on the environment. The study also clearly revealed that knowledge regarding Pest specific effective safer pesticides, Preparation and application technique of neem and other botanical pesticides, Intercrop, trap crop and boarder crop for pest management, Use and installation technique of pheromone trap, light trap and sticky traps, Seed, seedling and nursery treatment and Insecticide spray fluid preparation and spraying technique are the important training need area of the farmers and proper orientation of the farmers on these subject matter areas will increase the adoption level of IPM in vegetables.

During the study, efforts were also made to know the preferred time and duration of training programme and methodology of training which were mentioned in Table II .

TABLE-II – Time, Duration and Methodology of Training preferred

Sl. No.	Particulars		Yes (%)	No (%)
A	**Time of Training**			
	1	January to March	78	22
	2	April to June	22	78
	3	July to September	42	58
	4	October to December	928	
B	**Duration of Training**			
	1	1 Days	38	62
	2	2-3 Days	86	14
	3	3-4 Days	15	85
	4	One week or more	6	94
C	**Training Methodology**			
	1	Theoretical Lecturate	12	88
	2	Interactive Lectuate with Method Demonstration	72	28
	3	Interactive Lecturate with Method Demonstration and field visit	78	22
	4	Participatory, practical oriented and use of audio-visual aids	89	11

From the Table-II it is observed that majority of the farmer preferred to attend training programmes during the month of October to December and January to March as these two seasons are regarded as the season of vegetables and crops are in the field which will enable them to gain some practical knowledge regarding insect pest and their management . An overwhelming percentage of farmer (86%) revealed that the duration of the training should be of 2-3 days long. Most of the farmers preferred that the training methodology should be Participatory, practical oriented, use of audio-visual aids and distribution of IEC materials

b) **Training need assessment of extension functionaries**:

The training needs of the extension functionaries presented in Table III and Percentage analysis method was adopted to know the major training need areas.

TABLE III – Training Needs extension functionaries on thr major subject matter areas of vegetable IPM. (N = 40)

Sl. No.	Subject Matter Wise Training Need	No. of (Respondent Needed)	Percent	Rank
1	Target specific new generation pesticides	38	95	I
2	Bio-pesticides and Botanicals	36	90	II
3	Crop diversity in pest management (Intercropping & Trap Cropping)	35	87	III
4	Pest surveillance, monitoring and ETL	32	80	IV
5	Bio control agents & their augmentation and conservation measures	29	72	V
6	Life cycle of insects, biotic and abiotic factors for pest population build up	29	72	VI
7	Integrated nutrient management and induced resistance	25	62	VII
8	Pesticide residue and minimum waiting period	22	55	VIII
9	Insect and disease resistant variety	17	42	IX
10	Use of traps and other mechanical methods	14	35	X

It is clearly observed that the extension personal require more training on new generation pesticides, bio-pesticides and botanicals, crop diversity, pest surveillance, bio-control of insect pests and life cycle of insect pests as these subject matter areas are the emerging areas of vegetable pest management.

Summary and Conclusion:

Training needs assessment helps the trainer to decide on training curriculum, content, methods, techniques of training, evaluation and outcome so as to make the training programme complete and successful. The findings of the study clearly revealed that the vegetable growers need to be trained on the important subject matter areas of IPM for scientific, cost effective and eco-friendly management of insect pest. The extension functionaries also to be trained on the emerging techniques of pest management not only to upgrade their knowledge but also guide the farmers accordingly.

References

1. *Koppar, V.K and Shah, J.V. – Training Need Assessment, Broad-Based Extension approach and Training planning. Agricultural Extension Review, Sept.-Oct.'1992*

2. *Tamil Selvi, G and Vimale, D – Training Needs of farm women on IPM in Rice. Agricultural Extension Review, July-Aug, 2002.*

3. *Majhi, S.K. and De, H.K. – Training Needs of Fisheries Extension Officers. Agricultural Extension Review, July – Aug. 2002.*

4. *Rahman, S; Kalita, G and Sharma, K – Training Needs of Mizoram Farm Women in Pig Husbandry. Agricultural Extension Review, March-April 2004.*

5. *Mohanty, S.K; Ghosh, S and Gan, P.K. – Assessing Training and Extension need for Socio-economic development farm women. Orissa Review, Sept.-Oct.' 2005.*

6. *Padaria, R.N; Chauhan, K.N.K and Meena,Y.R- Training Needs of Arid farmers. Agricultural Extension Review, March-April 1999*

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Management skill of milk producers in Puri District of Orissa

B. Behera*,B. N. Sadangi** and A. K. Dash*

The development of scientific approach to animal husbandry did not make a universal debut in the Indian rural society. Only a few of the economically and socially privileged farmers started adopting modern animal husbandry practices at the initial stage of technology transfer for rural development. Development means the participation of the people in the determination of their environment. The vision of development is not just a question of economics, agriculture, self-sufficiency or of a technology transfer. Development is of the people with their proper capacity for imagination, creation, choice, responsibility and decisions with their environment.

There is a growing feeling worldwide that providing free and subsidised goods to the people who are at the bottom of the socio-economic ladder would not help much without corresponding increase in their capabilities. So it is recommended that empowering the powerless should start from capacity building. In this context development of inner resources of the members is of paramount importance. These inner resources may spring into motivation, creativity, problem solving, sustainability and satisfactory living standards.

In India, the theory of "tricle down" has failed and specific target groups are formed for each scheme to ensure equity and social justice. In this context it is necessary to examine how beneficiaries belonging to different socio-economic strata have attained higher capacities to manage dairy enterprise.

Review of literature

Literates have better response than illiterates in improving their knowledge.Increase in knowledge about dairy innovations leads to higher adoption of dairy technology by dairy farmers (Tyagy

** Programme Coordinator and SMS (Horticulture), Krishi Vigyan Kendra, CIFA,Kausalyaganga, Bhubaneswar-751002*
***Head, Social Science Division, CRRI, Cuttack-753006*

and Sohal,1984).In earlier study also Sidhu (1980)reported that knowledge had positive and highly significant association with milk production per household per day, per household per year and per animal per day.

Material methods

The design formulated for this study is ex-post-facto research design. The study was conducted in Puri district of Orissa. A sample of 100 dairy farmers ((beneficiaries/ non-beneficiaries of Operation Flood programme) from 28 villages of 20 milk producer's cooperative societies was drawn for the purpose collecting information. Knowledge about dairy animal production practices was measured through knowledge test. For measuring the knowledge about feeding, test developed by Fulzele (1986) was used. For measuring knowledge about breeding, management and marketing, the knowledge tests developed by Rath (1978) were used.

Knowledge as defined in the present study included those behaviours and test situations which emphasised the remembering either by recognition or recall of ideas, material or phenomenon. The variable indicated the extent of knowledge the respondent possessed at the time of answering the questions scientifically prepared for this purpose. The content of knowledge test is composed of items. Items for the test were compiled through literature, discussions with field extension personnel, subject mater specialists in veterinary and animal science, academicians and the researcher's own experience. The questions were designed to test the knowledge level of the dairy farmers of the study area (beneficiary and non-beneficiary). The selection of items was done on the basis of the following criteria.

«It should promote thinking rather than memorisation, and

«It should differentiate the well informed dairy farmers from the poorly informed ones. Care was taken to frame questions of similar difficulty level. The procedure followed in selection of the test items was on the line used by Choudhury (1978) and Sagar (1983). All the 26 items collected for construction of the knowledge test were in objective form including dichotomous format. Each one of the respondents, to whom the test was administered, was given score 1 for correct answer and 0 for wrong answer. Altogether the knowledge test consisted of 18 questions comprising 26 answers. The higher obtainable score of the test was 26 and lowest being 0. Each respondent answered the questions which were evaluated and scored. The scores obtained on the 18 questions were added to get the knowledge score. The knowledge scores of all the respondents were later on

categorised into following classes after converting the scores into percentage.

High-60 per cent and above

Medium-30-59 per cent

Low-0-29 per cent

Attitude towards dairying

The attitude of dairy farmers is undoubtedly linked with the human actions and have been the subject of research and investigation by the researcher (Mc Clellard, 1961).

In this study the attitude scale developed by Gupta (1976) was used with modification for measuring the level of attitude of the dairy farmers. In this scale 18 statements were taken comprising equal number of positive and negative statements. Respondents were asked to express their views on five point continuum i.e. strongly agree, agree, undecided, disagree and strongly disagree. For positive statements scoring was 5, 4, 3, 2, 1 and for negative statement it was 1, 2, 3, 4, 5 respectively.

On the basis of scores obtained by each respondent, they were classified into 4 categories as:

4 and above: Highly favourable

3-4: Moderately favourable

2-3: Less favourable

Less than 2: Least favourable

Results and Discussion

In the present study it was aimed to study the development of inner resources namely knowledge on dairy farming, attitude towards dairy enterprise, development of skills and managerial ability of the respondents. The findings of the above aspects would tell clearly the achievements as well as the lapses in the programme.

Table-1: Distribution of various categories of members according to the scores obtained in knowledge, attitude, skill and managerial ability by the beneficiaries

(N=100)

Components of inner resources	Categories of dairy farmers							
	Landlessf		Marginalf		Smallf		Largef	
	f	%	f	%	f	%	f	%
Knowledge								
Low (Up to 29% score)	-	-	-	-				
Medium (30-59% score)	7	63.64	16	30.77	7	24.14	-	-

High (60% and above score)	4	36.36	36	69.23	22	75.86	8	100.00
Total	11	100.00	52	100.00	29	100.00	8	100.00
Attitude								
4 and above Highly favourable	-	-	1	1.92	-	-	1	12.50
3-4 Moderately favourable	4	36.36	39	75.00	19	65.52	7	87.50
2-3 Less favourable	7	63.64	11	21.16	9	31.03	-	-
Less than 2 Least favourable	-	-	1	1.92	1	3.45	-	-
Total	11	100.00						
52	100.00							
29	100.00							
8	100.00							

Knowledge level (Beneficiaries vs. Non-beneficiaries)

Dairy is a promising enterprise as far as its potential and prospects in India are concerned. Progress of dairy farming is sine qua non for rural development. An up-to-date knowledge on the various dairy husbandry practices is a must for the beneficiaries in optimising return from dairy farming. The present study was conducted to know the contribution of Operation Flood programme in increasing the knowledge level of beneficiaries compared to non-beneficiaries.

Table-2: Comparison of knowledge level between beneficiaries and no-beneficiaries

Score range in percentage	Beneficiaries				Non-Beneficiaries				Z value (N=100)
	f	%	Average score	SD	f	%	Average score	SD	
Low (Up to 29% score)	-	-			5	5.00			9.59**
Medium (30-59% score)	30	30.00	65.57	13.51	88	88.00	44.67	9.69	
High (60% and above score)	70	70.00			7	7.00			

*** Significant at 1 per cent level of probability.*

The findings presented in Table-2 on knowledge level of beneficiaries and non-beneficiaries reveal that majority (70 per cent) of the beneficiaries had high knowledge level and the rest (30 per cent) were possessing medium level of knowledge. The average knowledge score of the beneficiaries was found to be 65.57. The knowledge level of non-beneficiaries when compared with beneficiaries showed very interesting result. Beneficiaries were found to have possessed significantly higher knowledge level than their counterpart. The Z value obtained from Wilcoxon-Mann-Whitney test at 0.01 level of probability suggested the above conclusion. The non-beneficiaries had only an average score of 44.67. The level of knowledge among different categories of members has been presented in Table-16. All the beneficiaries under large farmer category, 75.86 per cent under small farmer, 69.23 per cent under marginal farmer and 36.36 per cent under landless farmer category had attained high knowledge level. These findings are supported by the studies of Dubey *et al.* (1975), Sohal *et al.* (1978 and 1984), Sidhu (1980), Ram Kumar *et al.* (1993-94), Shivalingaiah *et al.* (1996), Gill *et al.* (1977), Gite (1980), Shreeshailaja *et al.* (1994), Narwal *et al.* (1991) and Nataraju *et al.* (1985 and 1986) who observed that more than 60 per cent of cattle owners covered under different projects had knowledge about the recommended dairy production innovations.

It can be concluded very safely that the Operation Flood project is instrumental in raising the knowledge level of the beneficiaries on dairy enterprise. The findings emerging from the study also state that the beneficiaries have good exposure to different extension programmes and enjoyed the facilities created by the Operation Flood programme. All these have resulted in good learning by the beneficiaries. The project has also made a situation which is stimulating, informative and educative for the beneficiaries but all the categories of farmers have not derived equal benefits for gaining knowledge. The old trend more or less is found here. Beneficiaries in large farmer category due to their better socio-economic status have attained high knowledge level and gained more than the small, marginal and landless beneficiaries. Small and marginal farmers are at par with each other while small farmers are better in attaining higher knowledge.

Attitude towards dairy enterprise (Beneficiaries vs. Non-beneficiaries)

Attitude is another important human resource factor to affect the behaviour of the individual. Psychologists have given much emphasis to study and analyze the attitude of the individuals towards different psychological objects with a view to predict future behaviour and action. In agriculture also knowledge, attitude and skill are the basic ingredients

of the behaviourial studies. Favourable attitude of the individual towards developmental goals is the prerequisite for the success of any programme. In the above backdrop it was considered to compare the attitude of the beneficiaries and non-beneficiaries to assess what exactly was the contribution of the Operation Flood in developing the attitude.

Table-3: Comparison of attitude towards dairying among beneficiaries and non-beneficiaries

(N=100)

Attitude score range	Beneficiaries				Non-Beneficiaries				Z value
	f	%	Average score	SD	f	%	Average score	SD	
Highly favourable	2	2.00			-	-			
4 and above									
Moderately favourable	69	69.00	3.15	0.42	3	3.00	2.35	0.25	10.79**
3-4									
Less favourable	27	27.00			94	94.00			
2-3									
Least favourable	2	2.00			3	3.00			
Less than 2									

*** Significant at 1 per cent level of probability.*

The data presented in Table-3 indicate that very substantial (69 per cent) of the respondents showed moderately favourable (3-4 mean score range) attitude followed by 27 per cent respondents who had less favourable attitude towards dairy farming. About 2 per cent had highly favourable attitude and similar percentage had expressed least favourable attitude towards dairy enterprise. The mean attitude score of the members was found to be 3.15 which fell in the moderately favourable attitude range. The non-beneficiaries on the other hand had mean attitude score of 2.35 which implied less favourable attitude of the non-beneficiaries. Almost all (94 per cent) the non-beneficiaries belonged to the less favourable attitude category. The Whitney test employed to compare the attitude scores of beneficiaries and non-beneficiaries yielded a significant Z value at 0.01 level of probability implying that beneficiary's development in attitude was significantly higher than the non-beneficiary. This was due to the contribution of Operation Flood programme.

The data on attitude of different categories of beneficiaries as presented in Table-1 reveal that majority (63.64 per cent) of the landless farmers had less favourable attitude whereas majority of the small farmers (65.52 per cent), marginal farmers (75 per cent) and large farmers (87.50 per cent) belonged to moderately favourable attitude category. The results are in agreement with the findings of Roy *et al.* (2000), Sayed *et al.* (1984) and Sharma (1994).

The beneficiaries after joining the Operation Flood programme are not only exposed to information and training but also realised financial benefits from the enterprise. The significant development in their attitude may be due to their success in trying innovations and achieving higher yield. Since society has created facilities and arranged services which have helped them to solve many problems. The members see the object in a real angle. All the above factors might have contributed for significantly higher attitudinal status of the beneficiaries. With respect to attitudinal status of the landless beneficiaries, it is found that they are unable to make use of the various opportunities and facilities given under the project due to their socio-economic backwardness. This has put them in a doubtful psychological state - a relatively lower level of favourable attitude than other categories of farmers.

Conclusion

From the study it could be concluded that beneficiaries had possessed significantly higher knowledge level than non-beneficiaries. The Operation Flood programme was instrumental in raising the knowledge level of the beneficiaries of the dairy enterprise. Similarly member's development in attitude was also higher than the non-members. The significant

development in their attitude may be due to their success in trying innovations and achieving higher yield.

References

1. *Dubey, V.K. and Singh, A. (1975). What crossbred cattle owner know about scientific dairying. A paper presented at Summer Institute, NDRI, Karnal.*
2. *Fulzele, R. (1986). Multi-dimensional analysis of training programme of Krishi Vigyan Kendra, Ph.D. Thesis (Unpublished), N.D.R.I., Karnal.*
3. *Gupta, C.L. (1976). A study of differential motives of dairy farmers of milk cooperatives societies of ICDP Karnal (Haryana) towards the diary innovations, Ph.D. Thesis (unpublished), Punjab University, Chandigarh.*
4. *Mc Clelland, D.C. (1961). The achieving society. In J.W. Atkinson ((Ed.). Motives in fantacy action and Society. D. Van Nostrand, Publ., Princeton, New Jersey.*
5. *Mc Clelland, D.C. (1961). The achieving society. In J.W. Atkinson ((Ed.). Motives in fantacy action and Society. D. Van Nostrand, Publ., Princeton, New Jersey.*
6. *Roy, P. Lopamudra and Pathak, Minaxi (2000). Attitude of farm women towards post-harvest activities. Indian Journal of Extn. Edn., **XXXVI** (1&2): 82-84.*
7. *Sayeedi, A.G. and Sohal, T.S. (1984). Attitude of dairy farmers towards scientific activities in Jammu district. Dairy Guide, **6**(9): 39-43.*
8. *Sharma, R.K. (1994). Farmers perception of constraints in milk marketing and measures for development of efficient extension system for milk marketing in rural areas. Indian Journal of Dairy Science, **47** (8): 54-56.*
9. *Shivalingaiah, Y.N. and Veerabhadraiah, V. (1996). Knowledge assessment and participation of rural youth in dairy management practice. Indian Journal of Dairy Sciences, **49**(9): 91-92.*
10. *Sharma, A. (1994). A study on the attitude of the rural youth and their extent of participation in farming. M.Sc. Thesis (Unpub.), A.A.U., Jorhat.*
11. *Sidhu, K.S. (1980). A study of dimensional variation in knowledge of dairy farmers of ICDP and non-ICDP area of Punjab. M.Sc. Thesis (unpub.), NDRI, Karnal.*
12. *Tyagi, K.S. and Sohal, T.S. (1984). Factors associated with adoption of dairy innovations. Indian Journal of Extn. Edn., **XX** (3&4): 58-60.*

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Empowerment of Farmwomen: Perception and Image Krishi Vigyan Kendra, Santhapur Central Rice Research Institute, Cuttack

J.Nayak[1],P.K.Mallick[2] ,K.M.Das[3] and S.M.Prasad[4]

In India, the position of women was always been rather ambivalent one in our culture. On one side, she has been raised to the status of dignity and on the other side; she has been exploited as some body lower in status to men in every walk of life. Ever since independence, a number of innovative schemes have been launched for the upliftment and empowerment of women in our country. Despite the Government's efforts the representation and significantly marginal empowerment of women is in essential pre-requisite for economic development and social progress of the nation. Empowerment does not simply mean economic empowerment but it involves social-Political, cultural empowerment along with economic empowerments an attempt was done to know the different issues related to empowerment of farm women: Perception and Image with the following objectives.

- To study the socio-economic background of rural women and their empowerment aspect with a profile of the farm women.
- To highlight the problems and difficulties which they face.
- To identify the hardles in the way of gender equality, emancipation, upliftment and subsequent.
- To arrive at logical and implementable methods and procedures to achieve the empowerment of women qualitatively.

Methodology:

The universe in the present study represents the farmwomen two blocks of Cuttack districts; one is Cuttack sadar and another Tangi-Choudwar,which are closely associated with KVK activities. In

SMS, Home Sc. [1] SMS, Vety Sc. [2] Senior Scientist Crop Protection [3] Senior Scientist and Programme Coordinator

administering the schedule, a combination of random and purposive sampling was used. The study universe was first defined in terms of six variables: age, income, educational status, profession, marital status and religion. This was done because the study indicated that the respondent's socio-economic, political and cultural aspects generally depend upon these factors. Then, it was observed that younger respondents were more conscious and aware of their rights. A total of 50 respondents were selected. There are different techniques of data collection, like observation, interviews. In the present study interview method has been used for collection of primary data.

Observation and Discussion:

Age of the respondents in the present study is significant in dealing with, or realizing her feeling of being empowered, or knowing her rights and privileges. The age of a woman plays a significant role in her self realization. In the study the age groups were made into three classes. 18-30years, 31-45years and 45years and above.

Table-I: Age composition of respondents

Sl.No	Age	No	%
A	18-30 years	17	34
B	31-45years	23	46
C	45 and above	10	20
	Total	**50**	**100**

Education:

Education not only brings transformation at the personal level, but at the same time it contributes to the development of a society and a nation.

Table-II: Educational status of respondents

Level of education	No	%
Illiterate	7	14
Primary	23	46
Secondary	13	26
Higher education	7	14

Total	**50**
100	

The educational status of women in the study area was significant

Marital status of respondents

Marital status influences the personality and out look of women and their status

Table-III: Marital status of respondents

Marital status	**No**	**%**
Married women	28	56
Unmarried	28	44

Occupation and position of women plays a significant role in their empowerment and upliftment

Table-IV: Distribution of respondents by occupation

Occupation	**No**	**%**
Working(farm)	31	62
Non working	19	38
Total	**50**	**100**

Generally the head of the family plays a decisive role in the women's involvement in social, economic and political affairs

Table-IV: Family type

Family type	**No**	**%**
Nuclear type	21	42
Joint family	29	58
Total	**50**	**100**

Decision regarding spending of family's income

Table-V: Involvement of women in same major decision

Decision item	**No**	**%**
Food	28	56
Saving and investment	7	14
Education of children	6	12

Expenditure of income	Sales and purchase of farm produce
6	5
12	10
	Total
	52
	100

It is observed that the decision related to food i.e. procurement and cook of food item were generally taken by the house wives (56%). But for important aspects like saving and investment and sales and purchase of farm produce the role of farm women in the study are of very negligence.

Political participation of women in the political process is key to the empowerment of women.

Table-VI: Political participation

No of women	**No always**	**%**	**Occasionally**	**%**	**never**	**%**
Casting vote	25	50	16	32	9	18

Voting decision

Item	**No**	**%**
Decision by self	12	24
Decision by husband	27	34
Decision by other	11	22

Conclusion:

From the above study it was revaled that though the rural women were engaged in different activities for their economical as well as social empowerment but the percentage in important decisions is very negligence, “Women have still not been recognized as producers in their right”. The development of rural women has been recognized as crucial in the overall development of the country. For this qualitative change in our mind-set and method is the need of the hour. The Government, NGO, women’s organization and men folk at large have to play crucial role in making gender equity and reality.

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Involvement of farm women in agriculture:an overview

S. Pattnaik*, B.K Mohanty, P. Ray*****

Women in India play a predominant role in agriculture and other allied activities. According to FAO, women in India play major role in the field of agriculture and actively involved in crop production, livestock management, horticultural plantations, post-harvest operations, agro and social forestry, fish farming, etc. They also participate in off –farm activities like processing and marketing of produce. About 36 million of women in India are engaged as main workers in farm operations starting from sowing to harvesting and storing. However; the extent of involvement differs with the variation in agro-production system and land owning system. Still then, women provide crucial labour in farm operations. Inspite of their much involvement, women in India have remained invisible than their male counterparts. It may be the fact of poor knowledge and exposure in which they are unable to remain in front in managing farm activities. An attempt was therefore made to assess the extent of involvement of women in farm activities with the following objectives.

1. Knowledge of farm women on agriculture and allied activities.
2. Extent of involvement in farm operations.

REVIEW OF LITERATURE:

Kumar & Bhalla (1990) stated that farm women plant, cultivate, weeding, harvest and process almost all crops and play important role in National horticultural productivity.

Prasad & Chauhan(1991) revealed that there were some specific innovative activities where farm women act as prime decision makers and supervise as well as monitor the progress of day to day activities.

Research associate ** Associate professor * Student Dept. Of Extension Education, College of Agriculture, Bhubaneswar*

Tejaswini et.al.(2004) observed that majority of the rural women participated in harvesting, transplanting, manuring, winnowing, cleaning, threshing, transportation and storage of the produce. But, they had poor involvement in bank transactions, farm budget and participation in social organizations.

MATERIALS AND METHODS:

The study was conducted in Narsinghpur and Banki Blocks of Cuttack District in Odisha. Sixty farm women from four different villages of these blocks involved in agriculture were randomly selected totalling to sample size sixty. Information were personally collected through a semi-structured schedule pre-tested earlier. Appropriate statistical measures were employed to arrive at conclusion.

RESULTS AND DISCUSSION:

Possession of knowledge are always related with use of the technologies in farm operations. Farm women should have good knowledge on agriculture and allied activities so that they can use the knowledge in farm operations and contribute significantly for increasing production and productivities. It is observed from the Tabel-1 that the respondents had better knowledge on crop production, vegetable cultivation and dairy farming in comparison to others. Poultry farming, sheep and goat rearing in the secondary source of income of almost all resource poor families and usually managed by farm woman. Similarly, post harvest operations, value addition are the domain of the farm women for quality produce towards better marketing. Mushroom cultivation is being popularized among farm women for leaving by recycling of bio-products and utilization of leisure time. Nutritional Gardening is another important activities of farm woman for nutritional security to the family members. Possession of poor knowledge on these aspects definitely a concern and suggested that the farm woman should be sufficiently exposed to these enterprises so that they can opt for feasible subsidiary vocations and contribute significantly to the family income.

Quality inputs, timely availability, easy access and reasonable price are important considerations for adopting the vocations and much related with possession of knowledge. It is observed from Table-2 that majority of the respondents stated for non-availability of quality inputs except irrigation water which are very much essential for utilization of the acquire knowledge in

Table-1: Knoweldge levels of the farm women on agriculture and allied enterprises.

Sl. No.	Enterprise	Good Knowledge	Partial Knowledge	No Knowledge	Mean Score	Rank
1	Crop Production	42 (70.0)	12 (30.0)	-	2.70	I
2.	Vegetable Cultivation	35 (58.33)	25 (41.67)	-	2.58	II
3.	Tree Plantation	17 (28.33)	13 (21.67)	30 (50.0)	1.78	VI
4.	Dairy Farming	33 (55.0)	17 (28.33)	10 (16.67)	2.38	III
5.	Poultry Keeping	7 (11.67)	11 (18.33)	42 (70.0)	1.41	VIII
6.	Sheep/Goat rearing	7 (11.67)	-	53 (88.33)	1.23	X
7.	Pisciculture	-	-	60 (100.0)	1.0	XII
8.	Nutritional Garden	16 (26.67)	18 (30.0)	26 (43.33)	1.58	V
9.	Mushroom Cultivation	3 (5.0)	-	57 (95.0)	1.10	VII
10.	Post Harvest Operation	26 (43.33)	6 (10.0)	28 (46.67)	1.96	IV
11.	Value addition	6 (10.0_	8 (13.33)	46 (76.67)	1.33	IX
12.	Rural Craft	14 (23.33)	3 (5.0)	43 (71.67)	1.51	XI

(Figures in Parenthesis indicate percentage)

farm activities. This may be one of the factor for which farm women not interested for acquiring knowledge on different enterprises particularly dairy, goatery, pisciculture, mushroom production, value addition, rural craft, etc. as observed from the ….

Acquiring knowledge and involvement in farm activities is related to each other. Individuals acquiring knowledge generally develop interest to put the knowledge into practice for assisting its feasibility. Similarly, involvement in the enterprise also motivate the individual to acquire knowledge and skill to develop

Table-2: Availability of agricultural inputs.

Sl. No.	Inputs	Available	Partially Available	Not Available	Mean Score	Rank
1	Seed Planting Material	19 (31.67)	4 (6.67)	37 (61.67)	1.70	II
2.	Manure/Fertilizers	19 (31.67)	4 (6.67)	37 (61.67)	1.70	II
3.	Plant Protection Chemicals	12 (20.0)	11 (18.33)	37 (61.67)	1.58	III
4.	Implements	6 (10.0)	22 (36.67)	32 (53.33)	1.56	IV
5.	Irrigation Water	60 (100.0)	-	-	3.0	I
6.	Credit/Capital	7 (11.67)	20 (33.33)	33 (55.0)	1.56	V
7.	Labourer	10 (16.67)	13 (21.67)	37 (61.66)	1.55	

(Figures in parenthesis indicate percentage)

competency. It is revealed from the Table-3 that majority of the respondents were not Involved in land preparation (100%),

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Relationship between Affordability to pay for the Veterinary services and profile characteristics of Sheep and Goat farmers

M.Srinivasa Reddy[1]

In India, the veterinary services have been funded, managed and delivered by the public sector .But in recent past the governments financial resources for the provision of veterinary services have not kept pace with the increased livestock population (Carney, 1998) and production resulting in detoriation of quality services by the public sector agencies (Anteneh, 1984; dehaan and Nissen, 1980). Hence privatisation of veterinary services is considered as one strategy that could be implemented to improve the quality of the services and to decrease the financial and administrative burden on scarce public resources. Therefore, the time has come to make transitional shift to private sector for support, though not for total substitution. Intermediate steps do exist between a solely public veterinary service system along with private partnership.

Keeping the above facts in view, the present study is designed to know the relationship between affordability to pay for the veterinary services and profile and selected psychological characteristics of sheep and goat farmers in Andhra Pradesh.

Materials and Methods

An Ex-post facto research design was used to conduct the present study in 3 mandals comprising 6 villages of Mahaboobnagar district of Andhra Pradesh. A total of 90 farmers were selected based on stratified random sampling method. A structured interview schedule was developed and used.

Results and Discussion

The affordability to pay for the veterinary services by the sheep and goat farmers was ascertained and the results were presented in Table 1.

**Part of Ph.D thesis of first author submitted to the Acharya N.G.Ranga agricultural University, Rajendranagar, Hyderabad, Andhra Pradesh.*

Associate Professor[1], Department of Veterinary & A.H. Extension, College of Veterinary Science, Rajendranagar, Hyderabad, Andhra Pradesh.

Table 2: Distribution of the respondents according to their affordability to pay for the veterinary services

S.No	Category	Sheep & Goat farmers	
		N=90	
		F	%
1	Less affordable	18	20.00
2	Medium affordable	61	67.18
3	High affordable	11	12.22
	Total	**90**	**100**

Mean: 36.14 S.D.: 9.68

From the table 2 it could be inferred that, majority of the sheep and goat farmers (67.18%) had medium affordability to pay for the veterinary services. About 20.00 percent of sheep& goat farmers were in less affordable category, while 12.22 percent were highly affordable to pay for the veterinary services.

It could be concluded that, farmers were affordable to pay for the profitable and result oriented services because of the reason that they rear the animals for their livelihood security. Hence we have to generate the competent technological services and then formulate the privatisation strategies accordingly. The results were in accordance with the findings of Ahuja (2004) and Jagadeeswari (2003).

Correlation analysis between the affordability to pay for the veterinary services and profile characteristics of sheep and goat farmers:

Further the data was subjected to correlation analysis to understand the nature of relationship between the profile and other selected psychological characteristics viz., age, education, socio-economic status, innovativeness, achievement motivation, decision making ability, information seeking behaviour, deferred gratification, rationality, scientific orientation, economic orientation, value orientation, marketing orientation and management orientation and the scores of affordability to pay for the veterinary services and presented in Table 2.

Table 2: Correlation analysis between affordability to pay for the veterinary services and the profile characteristics of sheep and goat farmers.

S.No	Variables	'r' values
1	Age	-0.851**
2	Education	0.402**
3	Socio economic status	0.216**
4	Innovativeness	0.572**
5	Achievement Motivation	0.817**
6	Decision making ability	0.333**
7	Information seeking behaviour	0.864**
8	Deferred gratification	0
9	Rationality	0.824**
10	Scientific orientation	0.759**
11	Economic orientation	0.773**
12	Value orientation	-0.026
13	Marketing orientation	0.660**
14	Management orientation	0.619**

** Significant at 0.01% level

From the Table 2, except the variables like age, deferred gratification and value orientation the rest of the variables had positive and significant correlation with the farmers' affordability to pay for the veterinary services. Where as age is having significant and negative correlation.

Regression analysis between the affordability to pay for the veterinary services and profile characteristics:

Further, the data was analysed to quantify the contribution of independent variables with the variation in the dependent variable and the results were presented in the Table 3.

Table 3 : Regression analysis between independent variables and affordability to pay for the veterinary services in sheep and goat farmers

		Coefficients	T
	(Constant)	31.707	2.424
1	Age	-0.297	-4.695**
2	Education	-0.031	-0.078
3	Socio Economic status	-0.439	-0.703
4	Innovativeness	1.227	2.51*
5	Achievement Motivation	-0.429	-0.887
6	Decision making ability	-0.1	-0.182
7	Information seeking behaviour	0.805	3.382**
8	Deferred gratification	0.253	2.123
9	Rationality	0.249	0.446
10	Scientific orientation	0.232	0.857
11	Economic orientation	0.602	1.569
12	Value orientation	-0.375	-0.085
13	Market orientation	0.413	0.958*
14	Management orientation	-0.454	3.159**
R^2	0.712		

** Significant at 0.01% level

* Significant at 0.05% level

It was observed from the Table 3 that, the selected independent variables contributed to explaining 71.2% of the variation in the affordability to pay for the veterinary services among sheep & goat farmers and the remaining 28.8 per cent of the variation was might be due to the external factors or the factors which are not controlled in the research design.

Further, it can be inferred that, out of 14 independent variables,4 variables (innovativeness, information seeking behaviour, market orientation and management orientation) had significant and positive impact on the dependent variable; while only one variable namely, age had significantly negative impact. The remaining 9 variables were not significant. The

findings are in accordance with the results of Woodford J D (2003).

By this relationship, we can conclude that the sheep and goat farmers who are having high and medium profile characters are obviously having high and medium affordability to pay for the services and they are ready to pay for that resulting in the high coefficient of determination.

References

Anteneh, A. (1984) Financing Livestock services: Do directors of Veterinary services have a distinct role in policy making APLAN paper 6,ILCA,Addis Ababa.

Ahuja, V., George, P. S., Ray, S., Mc Connell, K. E., Kurup, M. P. G., Gandhi, V., Umali Deininger, D. and de Haan, C. (2000) Agricultural services and the poor case of livestock health and breeding services in India. Indian Institute of Management, Ahmedabad, the World Bank, Washington D C and Swiss Agency for Development and cooperation, Bern, Switzerland, pp.148.

Carney, D. (1998) Changing public and private roles in agricultural service provision. London, Overseas Development Institute,pp.90.

De Haan, C. and Nissen,N.J. (1980). Animal Health Services in sub-Saharan Africa: Alternative approaches. World Bank Technical Paper 44. The World Bank, Washington, DC.

Jagadeeswari, V.(2003) Establishing private veterinary clinics in Andhra Pradesh-An opinion study. Unpublished M.V.Sc Thesis, Acharya N.G.Ranga Agricultural University, Hyderabad.

Woodford, J. D. (2003) Synergic between veterinarians and para professionals in the public and private sectors: Organizational and Institutional relationships that facilitate the process of privatizing animal health services in developing countries, Rev.Sci.Tech.Off.Int.Epiz.23(1),115-135.

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Drudgery Reducing Farm Implement for Farm Women- A case study in Kandhamal district of Orissa

Shradhanjali Mohapatra
P.C ,KVK ,Kandhamal

Introduction: Women have pivotal role in Agriculture ,they are involved in planting ,transplanting ,weeding ,harvesting & processing to marketing .Studies on participation of rural women in India in Rice cultivation indicate that women participated 15 of 18 rice farming operations either alone or jointly with male counterpart. Therefore attention is important on gender roles so that suitable interventions can be planned. Drudgery is generally conceived as physical & mental strain, agony ,monotony hardship experienced by human beings while all these results is declined in living & working conditions affecting men & women like the plight of the women in this regard is alarming as they continue to be constrained by illiteracy ,malnutrition & unemployment. The energy spent by them in performing these tasks is more than it is physically feasible for them to spend particularly is a below subsistence level of living.

Problem Addressed: High drudgery and low efficiency of farm women involved in intercultural operations like ridging. The majority of farm women in Kandhamal district continue to use age old local tools & implements which are slow in operation & cause considerable fatigue & drudgery during intercultural operations.

Technology Assessed: Hand Ridger

Tested: KVK Kandhamal Odisha

Age of respondents: 20-40

Genesis of work: In Kandhamal district Cabbage & Cauliflower is being cultivated in 2057 ha & 3419 ha respectively throughout the year. Intercultural operation like weeding,hoeing & ridging is important in vegetable crops like Cabbage & Cauli flower This intercultural operations mostly done by Farm women & they usually use age old local implements which causes drudgery & decreases their working efficiency.This research is aimed to reduce their drudgery and increase their working efficiency by introducing hand ridger for ridging.

Working principle of equipment:

1. It is very handy to use & manually operated.
2. Its a Light weight (1.25 kg) ,low cost equipment.
3. It consists of a "V" shaped blade connected with a bend clamp & a long wooden handle.
4. Simple to operate which improves the work posture and also reduces the drudgery of the women worker.
5. This is operated at optimum soil moisture condition and preferably after 40-45 days of planting

Methodology applied:

5 farmwomen from different adopted villages were selected for the study. Ridging in Cabbage with hand Ridger was compared with local Phoura . During the experiment various parameters viz., time ,working efficiency, labour cost & B C ratio .were taken into consideration.

Ridging efficiency calculated by the formulae-

R = {(R1 – R2) / R2} x 100

Where, R = Ridging efficiency, %

- R 1= Ridging area (m^2/hour) using hand ridger.
- R 2= Ridging area (m^2/hour) using local implements.

R = (R 1 - R 2) / R 2 = { (9 6 - 6 2) / 62}x100=54 %

Performance data

Particulars	**KVK**	
	FP	IP
No. of Trials	5	5
No. of farmers involved	5	5
Crop	Cabbage	Cabbage
Soil condition	Sandy	Sandy
Weeding intensity%	-	-
Output m^2/h	62	96
Est. Energy Expenditure kj/min.	-	-
WHR beat/min.	-	-
% reduction in drudgery	-	40
% increase in efficiency	-	54
Impact: no. of farmers adopted %	-	45

Analysis: Making Ridge & furrow in vegetable cultivation is costlier. By using hand ridger the labour cost is reduced by 50 % & increase in output is 54 %.

Comparing with local implement it is found that hand ridger was easy to operate , no bending required , No muscle strain, less energy expenditure for doing intercultural operations.

Output: Intercultural operations is one of the important labour intensive activity .The implement is low cost & easy to operate so farm women accepted this implement .It also saves labour cost by 50 %.One of the ways to substantially reduce drudgery of farm women is to popularize low cost women friendly implements.

Interference: Availability of women friendly, cost effective implements will ease out the drudgery of farm women & will leave enough time for income generating enterprises as well**.** Hand Ridger is women friendly tool because the assessment of technology increases the efficiency and reduces drudgery and it avoids bending and squatting posture. By introducing such small tools, the work and work environment can be improved, physiological workload can be reduced in the agriculture and the efficiency and work out put can be improved significantly.

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Impact of Dyadic Communication for Talking Decision Making Farming Seets

Chitrasena Padhy ", Sri B.P. Mohapatra, Sri B.P. Mohapatra and Dr. A. Sarkar**

INTRODUCTION

Dyadic communication is the direct communication between two people or groups of people. It involved face to face speaking situation. It is described as participants who are dependent upon one another. It is a communication process in which two people interest face to face as senders and receivers.

Better Dyadic communication plays a vital role in disseminating information about scientific farming operations between the family members such as dyad I between family head and wife, between family head and son (dyad-2), between family head and daughter (dyad-3). Interpersonal communication occurs when a person communicates directly with other people in a one to one situation or in small groups. The number of people is not the factor that identifies interpersonal communication, direct communication on a one to one basis is an essential feature. There are varying levels of interdependence among concept or events.

Objective:

1. To study the dyadic communication pattern between husband and wife for taking farming decisions in study area.
2. To find out the distance maintained while communicating in different dyadic situations.

Materials and Methods

The blocks chikiti and Digapahandi of Ganjam districts were purposively selected. Two villages namely Gadagovindapur and B-Nuapada were randomly selected under the two blocks. Fifty farmers were taken from each village. Purposive as well as simple random sampling techniques were adopted for the study. For selection of district and blocks purposive sampling technique was adopted and in case of selection of villages and respondents

** M.Sc (Ag) in Agricultural Extension, BKDV, W.B ** Asso. Professor, Extension Education, OUAT, BBSR, *** Retired Prof. Extension education. B.C.K.V.W.B*

simple random sampling technique was taken up. The total number of farm respondents under study were 100. Dyadic communication among the farm family members w.r.t. Their scientific farming operation is the dependent variable of the study.

Dyadic

Pattern 1: Communication between family Head (F.H) and his wife (DI)

Results and Discussion

Co-efficient of correlation

Table 1: Co-efficient of correlation between dyadic communication and 18 causal variables

Variables			Family head & wife
(D_1)			
1.	Age	X_1	-0.0024
2.	Occupation	X_2	0.0359
3.	Caste	X_3	-0.0630
4.	Educational Level	X_4	0.1857
5.	Family education status	X_5	0.0602
6.	Family size	X_6	-0.0673
7.	Social participation	X_7	-0.0734
8.	House type	X_8	0.0072
9.	Materials Possession	X_9	-0.0551
10.	Land holding	X_{10}	0.0551
11.	Agricultural implements	X_{11}	0.0304
12.	Risk taking ability	X_{12}	0.0240
13.	Cosmpoliteness	X_{13}	0.0283
14.	Mass media exposure	X_{14}	0.0387
15.	Fatalism	X_{15}	0.0410
16.	Dependency	X_{16}	0.0713
17.	Tolerance	X_{17}	0.2219*
18.	Faith	X_{18}	-0.1328

* Significant at 5% level

** Significant at 1% level

Table 1 shows the relations between i) family head and his wife (D1) Tolerance of a farmer is positively and significantly correlated with the dyadic communication in case of dyad 1 i.e. in between family head and his wife. Tolerance is a measure to listen something with patience from any other. One influences the degree of communication in between 2 persons. Degree of communication will increase by listening some one with patience. Table 2: Multiple regression analysis of dyadic communication pattern (D1) and 18 causal variables.

Table & regression graphs

Variables	Standdardized βxR		Multiple regression cofficient (B)	SE of 'b' regression Coefficient	T value	of 'b'
1. Age	X1	0.110	-0.148	0.060	0.085	0.103
2. Occupation	X2	0.065	1.332	0.506	0.955	0.530
3. Caste	X3	-0.151	5.404	1.081	0.198	1.355
4. Education level	X4	0.282	29.667	0.458	0.212	2.163*
5. Family education status	X5	-0.073	-2.483	-0.166	0.295	0.561
6. Family size	X6	-0.067	2.559	-0.112	0.269	0.415
7. Social participation	X7	-0.015	0.632	-0.040	0.339	0.119
8. House type	X8	0.038	0.156	0.309	1.209	0.256
9. Material possession	X9	-0.007	0.207	-0.007	0.150	0.047
10. Land holding	X10	0.180	5.207	0.081	0.072	1.134
11. Agricultural implements	X11	0.073	1.250	0.120	0.238	0.503
12. Risk taking ability	X12	-0.018	-0.243	-0.255	1.592	0.141
13. Cosmopoliteness	X13	-0.083	-1.339	-0.382	0.621	0.615
14. Mass media exposure	X14	-0.095	2.087	-0.085	0.142	0.598
15. Fatalism	X15	-0.003	-0.059	-0.002	0.094	0.019
16. dependency	X16	0.079	3.184	0.123	1.178	0.688
17. Tolerance	X17	0.265	33.403	0.880	0.358	2.460*
18. Faith X18	-0.255	19.183	-0.661	0.340	1.944*	

* Significant at 5% level

Above table represents the multiple regression analysis between dyadic communication in case of family head and his wife and 18 predicted variables to predict the effect of individual predicted variables in presence of other variable on predicted one. The variables education of the respondent, telerance and faith on others had shown a positive and significant effect on the dyadic communication.

The education status of the respondent helps to build a perfect cushion for information endowment and experience procurement to flourish their individual activity towards the communication between family head and his wife.

The variable tolerance of the respondent prepares the mental set up to listen and learn from other people which ultimately leads to the information procurement and creates the analytical framework in their mind. It enhance to belive on the others' information and rationalize that information which he had received from others.

The b x R value represents the percentile contribution of the individual predicted variable to predict the dependent variable. The variable tolerance had shown the highest percentile contribution towards the prediction of dependent variable, the communication in dyad 1, followed by the variable education of the respondent (29.66%).

References:

Lasagni, M.C. (1988) Experience drives changes in communication levels, FAQ 21 (2): 25-28 (En.)

Shamsuddin, M (1989) communication and its role in rural development. Journal of Rural Development and Administration. 21(4): 70-80

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Entrepreneurial characteristics of Women Dairy Cooperative Society Members

*By Dr. Pitamabar Swain**

The cooperative sector in genral and the dairy cooperative in particular contiunes to occupy an important place in India's economy and rural development strategies. Dairy cooperative societies have been playing a pivotal role in bringing about white revolution in India. The first diary cooperatie society registered in Allahabad in UP in 1993 and was called "Katra Cooperative Dairy Society". The dairy cooperative movement in India has achieved a remarkable success in the past 50 years, more so in the last 20 years. The number of registered dairy cooperative societies has reached over 74,000 and 170 milk unions are being operated in 264 districts and more than 10 million dairy farmers have joined the dairy societies (Kurien, 1999).

Women's cooperative societies have made women's participation in different socio-economic activities more challenging. Cooperatives are considered as an important tool for effecting sustainable rural development by utilizing locally available resources. Their role is instrumental in getting higher income, ensuring equitable distribution of income and employment opportunities. Increasing women involvement and motivation in cooperative can bring remarkable changes in their socio economic status and assist them in equity, social justice, self-help development and encouraging the women's organizations with requisite technical an management skill and credit facilities to their activities and operations. In India and Indonesia, special women cooperative societiis are the sources of inspiration of women welfare. Since 1988 the National Dairy Development Board (NDDM) through its cooperative development programme in different parts of India, decided to involve women dairy farmers through cooperative movement.

WDCS is an entrepreneurial unit of livelihood. Many families in rural areas depend upon dairy animals for their living. Milk production and productivity and the remunerative price are the key factors for the successful dairy units. It is hypothesized that entrepreneurial characteristics of the individuals are

related with success or failure of the enterprise. Within the frame work of the study an attempt was made to identify entrepreneurial characteristics of the WDCS members. **Materials and methods**

The study was conducted in two undivided districts namely Cuttack and Dhenkanal in the state of Orissa, which were selected on the basis of performance of milk root and the respondents were selected covering 22 number of WDCS with high and low performance. A multistage sampling procedure was followed to select the sample for the study. The district milk unions and the milk routes were selected purposively, whereas the Women Dairy cooperative Societies and the members were made purposively from each selected. From 22 numbers of WDCS, a sample of 110 respondents covering 50 from Cuttack and 60 from Dhenkanal districts were finally selected and informations were secured through a structured interview schedule adoptin personal interview method. Both parametric and non-parametric statistics were adopted in statistical analysis to obtain relevant findings. **Results and Discussions**

Entrepreneurial characteristics of the WDCS members on ten important aspects as has been explained in the Table 1 in all the cases, the response was measured on a three point scale which have been analyzed.

Table 1. Entrepreneurial behaviour of WDCS members

Characteristc	Cuttack	Dhenkanal	Average	Gap(%)
Hard work	1.84	1.18	1.51	50.66
Desire of achievement	2.04	1.57	1.80	40.00
Optimistic	2.34	2.03	2.18	27.33
Foresightedness	1.70	1.11	1.40	62.00
Independent	1.43	1.38	1.40	53.33
Future planning	1.45	1.26	1.35	55.00
Good organizer	1.60	1.56	1.58	47.33
Innovativeness	1.70	1.61	1.65	45.00
Information seeking	1.60	1.23	1.41	53.00
Quality consciousness	1.45	1.04	1.24	58.66

Average	**1.71**	**1.39**
1.55	**49.73**	

A glance at the table reveals that the gaps in different aspects vary from 27.33% to as high as 62.00%. The analysis reveals that maximum gap is observed in case of foresightedness (62%) followed by quality consciousness (58.66%), future planning (55%), information seeking habits (53%), independent in taking decision (53.33%) and hard work (50.66%).

The other aspects in which considertable gap is observed are to be good organizer, innovativeness, desire for achievement and optimistic in maintenance of enterprise. Taking into consideration of Cuttack and Dhenkanal district, the gap is observed to be more in case of Dhenkanal district than Cuttack. The overall gap is 49.33%, and district wise gap is found to be 43% and 53.66% for Cuttack and Dhenkanal district respectively. So, the overall conclusion is that the members of WDCS have not been educated or trained to exhibit their entrepreneurial characteristics. The high percentage of gap indicates need for intervention in entrepreneurial aspects to boost up their production and productivity level leading to success of the society. The difference between Cuttack and Dhenkanal districts is due to higher level of education, closeness to milk processing unit, better socio economic status and exposure to mass media. **Conclusion and recommendation**

In most of the WDCS, it was seen that a dull and lethargic working culture was prevailing. Because of their low level of education and orthodox culture, there was very slow progress of the society. They have not yet realized the importance of cooperatives for betterment of their livelihood. Majority of WDCS. Inability to engage the professional managers are due to small business turnover and net profit. Paricipatory approach and dynamic leadership are two of the pre-requisites not only for creating and nurturing the WDCS but also for providing a vision, inspiring and guiding both the members and the management so as to enable the WDCS to achieve its purpose. In this respect, no stone should be left unturned in educating to all associates of WDCS about the guidelines, objectives, roles, duties, philosophy of WDCS and it's operational procedures.

Another important area to be attended too is the training procedure. Training methods should be of interactive and participatory enough rather than vertical training confined to theoretical orientation. Use of posters, charts, demostration, field visits and share of success stories and more so a training with problem solving mode to be

adopted. Creation of a mobile training unit would help to secure the participation of more women in group at their suitable time and at their home site.

Reference:

Bichler, R.D. (1985), Changing through dairy development. A case study. Dairy Guide, 8(3): 2-24.

Dubey, V.K., singh, S.B. and Khera, J.K.(1982), Role of rural women in decision making with respect to animal husbandry practices. Indian journal of Home science. 14(2): 18-21.

Nanavaty, R.(2002). Empowerment of women through micro credit. Yojana, 46:47-50.

Puri, S. (1971). Rural families and decision-making pattern. Indian journal of Extension Education. 7(1 &2): 65-67.

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Attitude of Fisherwomen of Astaranga coast towards improved Fish Processing Methods

B.P Mishra, R.MIshra* and K.C.Dora**

Introduction

Indian fisheries sector has come a long way since independence and immensely contributed to the food basket of the country. With a production of 3.6 mmt, India is the 2nd largest producer of inland fish in the world that plays a great role in nutritional security, employment potential and the making of its rural and urban socio-economic fabric as well. The potential of fisheries development in India is highly promising coupled with technological developments.

Fish processing has emerged as major discipline in food processing. Fish has significant quality for processing. Now, only 36% of world fisheries production is marketed as fresh fish, while remaining 64% underwent some form of processing. Improved post-harvest processing is seen as a way of developing the fishery industry without increasing harvests. Emergence of fish as a health food, a source of valuable foreign exchange for many Asian countries and aquaculture becoming a dominant food farming sector are some of the important factors contributing to the phenomenal growth of fish processing and export trade. Fish processing technology has witnessed remarkable developments in the latter half of the 20lh century. The advent of transportation facility, modern packaging materials and various fish processing techniques has all contributed to this development.

Several technologies in the various specialized areas of fish processing technology have been evolved for better utilisation of the trash fish and unutilised parts of fish / prawn and to prepare different products in a more hygienic way. Through various experimental extension programmes, efforts were undertaken to disseminate the appropriate technologies among the fishermen and women in the fishing villages of Astaranga coast of Puri district of Orissa. Russell (1977) reported that the attitudes have intellectual, biological, social and emotional components that are derived from experience and exercise a determining influence upon behaviour. The individual having favourable attitude towards an introduced technology will

adopt the technology, but those who are having unfavourable attitude towards a technology will refuse to adopt the technology. Thus, attitude plays a crucial role in the adoption of the technology. With this backdrop, a study was undertaken with the main purpose to investigate into the attitude of fosherwomen of Astaranga coast ol" Puri district towards the improved fish processing methods with specific reference to hygienically preparation of dry and salted fish, dried prawn, icing and pickling of fish and prawn.

Objective:

To find out the attitude of fisher women towards improved fish processing methods.

Methodology:

The present study was conducted along the Astaranga coast in the Puri district of Orissa. Data were collected from 120 fisherwomen, selected from two fishing villages namely Nuagada and Chandrabhaga in proportionate random sampling procedure through personal interview with the help of pre tested structured schedule. The attitude of fisherwomen was measured following a 3- point scale developed by Thiagarajan *et al*.(1989). Fourteen statements consisting of 7 favourable and 7 unfavourable were included reflecting the feeling of fisherwomen towards the improved fish processing methods. In this, each respondent was asked to indicate her degree of agreement such as Agreed, Undecided and Disagreed. The weightages given were 3,2 and 1 for favourable statements and l,2and 3 for unfavourable statements. The total attitude score for individual fisherwomen was obtained by adding the weightages over all the statements. Also mean attitude score of all respondents on a given item was calculated.

Findings and Discussion:

The mean attitude score for each of the 14 statements was calculated from the tabulated data and presented in Table 1. It is evident from the table that the mean attitude score of statement numbers 1, 2, 4, 5, 6, 11, 12, 13 and 14 were more than the average mean attitude score (2.0) and statement number 2 (2.90) is the highest among them. However, score for statement numbers 3, 7, 8, 9 and 10 were below the average mean score. Since most of those statements having their mean attitude score below average were negatively worded except no. 7 and those having above average score were mostly positively worded and some of the negatively worded, it clearly shows that almost all fisherwomen possess favourable attitude. The total mean score on the scale was 30.50 which was above the corresponding neutral score (28.00) by 2.5. This showed that the overall attitude of the respondents towards the improved fish processing methods was very favourable. The fix statement "It is good to adopt improved methods of

preparations of fish products as they give higher quality product when compared to traditional method of preparation" was supported by most of the respondents.

The analysis of data revealed that all the fisherwomen of Astaranga coast has favourable attitude towards the improved fish processing methods. This can be taken advantage in promoting preparation of good quality fish products and proper utilisation of unutilised parts of fish /prawn by providing necessary training and technical guidance to them.

This will ultimately improve the financial condition of the fishermen community.

References:

RUSSELL, L.I. (1977) Personal development during childhood and adolescence. In. Educational Psychology (Charles E. Skinner, Ed.). Prentice Hall of India Pvt. Ltd., New Delhi, p.71.

THIAGARAJAN, R., B. MOHAN, M.K. KANDORAN (1989) A scale to measure the attitude towards improved fish processing methods. Fish. Technol. 26(2) : 140-143.

Table 1. Attitude scale items with mean score.

Sl. No.	Statements	Mean Score
1.	Improved methods of preparation of fish products are not difficult to be practised.	2.65
2	It is good to adopt improved methods of preparation offish products as they give higher quality products when compared to traditional methods of preparation.	2.90
3.	Improved methods of preparation offish products make one indebted.	1.85
4.	Fisherwomen need not invest more for the adoption of improved methods of preparation offish products.	2.20
5.	Average fisherwomen cannot adopt improved methods of preparation offish products due to high cost involved in it.	2.25
6.	Improved methods of preparation of fish products are only profitable on a commercial scale.	2.30
7.	Improved methods of preparation of fish products will improve	1.80

	the economic condition of the fisherwomen.	
8.	Fisherwomen using improved methods of preparation of fish products will incur heavy loss.	1.90
9.	There is no guarantee that improved methods of preparation of fish products will give good returns every year.	1.25
10.	Improved methods of preparation offish products involve heavy risk.	1.80
11.	Improved methods of preparation of fish products do not increase the knowledge and skill level of fisherwomen.	2.40
12.	Marketing of the improved fish products is not very difficult.	2.45
13.	The raw materials for preparing the fish products are easily available.	2.65
14.	The fish products obtained through the improved methods fetch high price in the market.	2.10
	Total Score	**30.50**

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Constraints Perceived by the Tribal Women in Rice Farming A Case Study in Orissa

Sabita Mishra* & A.B.Das**

Introduction

It has been found that farm women perform varieties of functions in the farm as producers, wage earners and post harvest managers (Balaguru, 1992). They play a crucial role in agriculture development and allied fields. In the tribal economy of Orissa, shifting cultivation ('bogodo'), women spend 105.4 days per year on agricultural operations compared to men who only spend 59.11 days per year on agriculture work (Fernandes and Menon, 1987). No doubt, the farm women face some problems and risks due to our male agricultural extension systems which are not so effective in providing technical information to women farmers. Many constraints exist simultaneously in several stages of development and patterns of progression from one stage to another depending upon the time, place and other sets of conditions (Mishra et.al., 1987). Therefore, recognizing this serious lacuna in extension, it is essential to know the needs and constraints faced by tribal women. So that their capabilities and contribution can be increased significantly.

Objective

Keeping this in view, the study was conducted in tribal belt of Orissa to know the constraints perceived by the tribal women who are involved in rice farming so that the measures can be taken.

Methodology

For the study, four villages in two blocks like Kolenchia and Nuapada were selected in the district of Nuapada. Total 60 numbers of tribal women were selected having direct involvement in rice farming as primary occupation.

Findings and Discussion

I. Personal and economic status

Data was collected from tribal women to get information on their personal and economic status which is reflected in the following table.

Table 1: Personal and Economic status

SI. No.	Personal and Economic status	Frequency	n= 60 Percentage (%)
1.	**Age**		
a)	**20-30 years**	**08**	**13.33**
b)	**3 1 -40 years**	**44**	**73.34**
c)	**> 4 1 years**	**08**	**13.33**
	Total	**60**	**100.00**

*Senior Scientist (ALi). Directorate of Research on Women in Agriculture, Bhubaneswar. Orissa.

** Subject Matter Specialist (Extn), OUAT, Bhubaneswar, Orissa.

2.	**Education**			
	a)	Illiterate	46	76.67
	b)	Primary	11	18.33
	c)	High school	03	5.00
	d)	Above high school	00	0.00
		Total	**60**	**100.00**
3.	**Occupation**			
	a)	Farming (primary)	60	100.00
	b)	Business (secondary)	20	33.33
	c)	Labour work (tertiary)	14	7.77
4.	**Land holding**			
	a)	< 1 acre	04	6.66
	b)	1-3 acre	46	76.67
	c)	> 3 acre	10	16.67
		Total	**60**	**100.00**
5.	**Annual Income**			
	a)	<Rs. 15,000	08	13.34
	b)	Rs.15,001 -Rs.25,000	16	26.66
	c)	>Rs.25,001	36	60.00
		Total	**60**	**100.00**

It reveals from the above table that majority of the respondents were from the age group of 31 to 40 years (73.34%) and illiterate (76.67%). All most all had farming as their primary occupation (100 %) followed by business (33.33%) and labour work (7.77%) as secondary and tertiary occupation respectively. About 77% of tribal women had 1-3 acres of land followed by more than 3 acres (16.67%) and less than 1 acre (6.66%). Rice was the only field crop in kharif for all whereas vegetable in homestead was found with very few respondents in rabi season. Majority of them were (60%) within the income group of more than Rs.25,0017-as annual income against having the income range from Rs. 15,0017- to Rs.25,000/- (26.66%) and less than Rs. 15,0007- (13.34%).

II. Social status

Social status and social participation plays a great role to get new information for solving the constraints. So, analysis was done in this aspect and data is reflected in table as follows.

Table 2: Social status

n = 60

Sl. No.	Social status	Frequency	Percentage(%)
1.	Family head		
a)	Husband	54	90.00
b)	Parents/children	06	10.00
	Total	**60**	**100.00**
2.	**Social participation**		
a)	SHG	60	100
b)	Mahila Samiti	02	3.33
3.	**Extension exposure**		
a)	VLW	58	96.68
Sl.No.	**Social status**	**Frequency**	**Percentage(%)**
b)	Block functionaries	01	1.66
c)	No contact	01	1.66
	Total	**60**	**100.00**
4.	**Mass media exposure**		
a)	TV	40	66.66
b)	Radio	60	100.00

5.	**Field exposure**			
	a)	Farmers field	18	30.00
	b)	No exposure	42	70.00
		Total	**60**	**100.00**
6.	**Undergoing training**			
	a)	Yes	16	26.66
	b)	No	44	73.34
		Total	**60**	**100.00**

The above table shows that 90% of families were headed by their husbands followed by parents/ children (10%). It is clear that the tribal women have no headship in families. Their participation in social organization was limited to only SHGs and 3.33% had contact with Mahila Samitis. As far as exposure with extension people with concerned, about 97% had contact with local VLW and mass media exposure was TV (66.66%) and radio (100%). Out of total 60 respondents, only 30% had visited other farmer's vegetable field demonstrated by watershed department as field exposure whereas 70% had no such type of field exposure. Regarding undergoing agricultural training, about 73% was not imparted any training against 27% who were trained in agriculture field.

III. Perceived constraints

Questions were asked to the tribal women to know the constraints perceived by them in rice farming under five areas like technological, economical, input service supply, institutional and general and then it was analyzed in rank order.

Table 3: Perceived constraints (rank order analysis)

Sl. No.	**Constraints**	**Percentage**	**Rank**
1.	Technological	63.33	11
2.	Economical	58.33	III
3.	Input service supply	75.00	I
4.	Institutional	51.66	IV
5.	General	50.00	V

The obtained data reveals that input service supply was the major problem which 75% of respondents face and they put it as 1st rank followed by technological (63.33%), economical (58.33%), institutional (51.66%) and general (50.00%) as 2nd, 3rd, 4th and 5th rank.

Table 4: Perceived constraints

(n=60)

Sl. No.	Areas	Percentage	Rank
A.	**Technological constraints**		
1.	Lack of knowledge about improved varieties	3.33	VI
2.	Lack of knowledge about latest technology	11.66	II
3.	Lack of skill about latest technology	5.00	V
4.	Lack of knowledge about IPM	6.66	IV
5.	Lack of knowledge about agricultural extension functionaries	0.00	-
6.	Lack of technical guidance at proper time	10.00	
7.	Unavailability of latest technology at village	26.66	I
B.	**Economic constraints**		
1.	Lack of money in time	3.33	IV
2.	Low market price	11.66	II
3.	High fluctuations of rice	1.66	V
4.	Higher cost of quality inputs	6.66	III
5.	Distress sale due to urgent need of money	21.66	I
6.	Lack of proper market	6.66	III
7.	Labour intensive crop	3.33	IV
8.	Problem of transportation charges	0.00	-
9.	Lack of subsidies on inputs	3.33	IV
C.	**Constraints related to input service supply**		
1.	Non-availability of suitable rice varieties	0.00	-
2.	Supply of low quality rice seeds	6.66	VI
3.	Inadequate and untimely canal irrigation	18.33	I
4.	Non-availability of manures and fertilizers	13.33	II
5.	Non-availability of insecticides/ pesticides	10.00	IV
6.	Non-availability of suitable farm implements	8.33	V
7.	Higher agro inputs	11.66	III
8.	Non-availability of initial inputs	6.66	VI

D.	Institutional constraints		
1.	Lack of training institutions for farmers	3.33	IV
2.	Hardship of credit facilities	8.33	II
3.	Lack of coordination among working institutions	5.00	III
4.	Non-availability of village level agricultural worker	5.00	III
5.	Contact farmers' preference by extension workers	3.33	IV
6.	Lack of active and local leaders	1.66	V
7.	No trust worthiness of Agricultural functionaries among farmers	25.00	I
E.	**General constraints**		
1.	Natural calamities	3.33	IV
2.	Lack of supervision by extension personnel	15.00	II
3.	Lack of coordination among the farmers	11.66	III
4.	Fragmented and undulated land resource of poor farmers	20.00	I

Under technological constraints, non-availability of latest technology at village was ranked as first (26.66%) while lack of knowledge about agricultural extension functionaries was not a problem for them. According to Chander & Singh (2003) lack of knowledge about recommended dose of pesticides, bio-pesticides and fertilizers ranked first as technological constraints.

Likewise, distress sale due to urgent need of money was perceived by the tribal women as most economic constraint (21.66%) followed by low market price and lack of proper market. Similar contentions under economic constraints have been reported by Jana (2000).

Inadequate and untimely canal irrigation was viewed to be most serious problem under input service supply followed by non-availability of manures and fertilizers. Input service supply being ranked as most serious constraint has similarity with the contentions of Sudhakar (1998) &Suresh(1998).

Institutional constraints was another important area where the tribal women felt the problem of no trust worthiness of agricultural functionaries among farmers (25.00%) and the less constraint was with lack of active and local leaders.

Lastly, under general constraints, they ranked the area in descending order like fragmented and undulated land

resource of poor farmers (I), lack of supervision of extension personnel (II), lack of coordination among the farmers (III) and natural calamities (IV). Political interference was not felt as a constraint by any of the tribal women.

Suggestions

- A separate support system including financial, research and training institutions, extension and consultancy services, etc. should be developed for tribal women.
- First of all, the agriculture extension functionaries should create faith among the tribal women before transferring any technology.
- The concept of village banking and mobile banking should be introduced.
- Seeing is believing. Hence local research institutes must arrange exposure visit of tribal women to successful demonstration units.
- Education-cum-training facilities should be provided to understand the latest technology and its scope.
- Linkage with funding agencies should be developed for easy finance.
- With widespread illiteracy among tribal women, the crucial skill of "effective communication" should be developed. Technology translator concept can be adapted.
- Rural marketing centers should be established for marketing functions of local, national and export market.

Conclusion

Sea change is required in case of roles played by NGOs, community based organizations and local government organizations. They must intervene in removing constraints to increase productivity and production to go up in the ladder of economy. Task forces and high-level experts should look at the science and technology inputs for tribal women and consider the problems and their solutions to improve the quality of life for women in all walks of life. Location specific policy and plan is needed to minimize the constraints.

References

Balaguru, T. 1992, Gender Issues in Agriculture, National Academy of Agricultural Research Management, Hyderabad, India.

Chander, S & Singh, S.P. (2003) Constraints in Adoption of Integrated Pest Management Practices in Cotton. Ind. Jr. of Extn.Edn. Jan-June, 2003 No.l & 2, pp.41-50.

Fernandes, Walter and Geeta Menon, Tribal Women and Forest Economy, Indian Social Institute, New Delhi, 1987.

Jana, H. (2000), Knowledge & Adoption of Recommended Plant Protection Practices of Paddy Growers in West Bengal. M.Sc. Thesis (Unpublished), CCSHAU, Hisar.

Mishra, A.A., Awasthi, P.K.. & Jaiswal, O.K. (1987), Constraints in utilization of farm technology, in Madhya Pradesh. Paper presented in the seminar on "Constraints in TOT" held at KVK, Dapoli, Oct., 20-30.

Sudhakar, B. (1998). Awareness & Adoption of Integrated pest management (IPM) practices for Cotton. M.Sc. Thesis (Unpublished) Annamalai University, Annamalai Nagar.

Suresh, C. (1998). Adoption & Management of Plant Protection Practices in Kaithal District of Haryana under Rice-wheat Cropping System. M.Sc Thesis (Unpublished) CCSHAU, Hisar.

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Awareness of Consumer issues among the members of Women Self Help Groups in Jharsuguda District

Jyotirmayee Udgata

Introduction

Every person in the society is a consumer of goods/services from the time of his/her birth. Consumption is the sole end and purpose of all production and the interest of both the producer and the consumer ought to be attended. But in an environment of limited choice, inadequate supplies, incomplete information and unlimited demand, it is inevitable that the poor consumer gets cheated.

Now-a-days the women are largely coming to the marketing front which was meager in the past. The women SHG movement in the state has proved that the SHGs have benefited the poor members in myriad ways. The SHGs have provided access to financial services for a large no. of people who previously did not have this opportunity. The SHG members of the district predominantly invest both in small scale agriculture and non farm activities. It implies the women are no longer the consumers in micro environment; they have also entered to the complex macro environment of consumerism.

Objective

To find out the awareness of various consumer issues among the women SHG members.

Materials and methods

A randomly selected 60 members of ten Women Self Help Groups of different blocks in Jharsuguda district constituted the sample for the present study. The data was collected using interview schedules by personal interview method. Statistical analysis of the data was carried out using means, frequencies and analysis of variance.

Results and Discussions

Table-1 reveals the general profile of the sample selected. From the result it is clearly evident that a high percentage of respondents belonged to the age group of 35-45 years (51.7%) representing the expanding stage of family life cycle. Nearly sixty percent of respondents had primary education and only five percent respondents were graduates. Majority of the respondents (86.7%) were from joint families. Nearly

half of the respondents were involved in post harvest value addition of crops. Fifty one per cent of the respondents had monthly income ranging from Rs.5,000 to 10,000.

Table-1 Profile of Respondents

Profile details	No.	Percentage
Age (in years)		
25-35	20	33.3
35-45	31	51.7
45-55	9	15
Total	**60**	**100**
Education		
Illiterate	4	6.7
Primary	37	61.6
High school	15	25
Intermediate	1	1.7
Graduate	3	5S
Total	**60**	**100**
Type of family		
Joint	52	86.7
Nuclear	8	13.3
Total	**60**	**100**
Income generating activities undertaken		
Mushroom cultivation	6	10
Post harvest value addition	28	46.7
Vegetable growing	18	30
Broom stick making from Biren grass	20	33.3
Total	**72 ***	**100**
Total Family Income		

Below 5,000	1	1.7
5,000 – 10,000	31	51.6
10,000 – 15,000	25	41.7
15,000 – 20,000	3	5
Total	**60**	**100**

* Indicate multiple responses

Standard Marks

To ensure better quality products, women as consumers are expected to check standard marks like I.S.I, AGMARK, F.P.O, WOOLMARK, and TRADEMARK etc. on the products.Table-2 explains the extent of awareness of respondents in general towards standard marks. It is evident from the findings that a negligible proportion of the respondents were aware of the standard marks like I.S.I, F.P.O and trademarks. As a whole it is understood that the respondents were unaware of the standard marks in general.

Table-2 Distribution of respondents towards Awareness of Various Standard Marks

Sl. No.	Standard marks	Aware		Not aware	
		No.	Percentage	No.	Percentage
1	I.S.I	2	3.3	58	96.7
2	AGMARK	-	-	60	100
3	F.P.O.	1	1.7	59	98.3
4	WOOLMARK	-	-	60	100
5	TRADEMARK	2	3.3	58	9

Consumer Rights

The findings of table-3 reveal that a very low proportion of the present sample is aware of consumer rights. Comparatively a higher proportion (15%) of the sample is aware of the right to consumer education and right to healthy environment. Reasons for this could be ignorance, lack of interest among respondents, low level of education and lack of exposure to any awareness programme covering this aspect.

Table-3 Distribution of respondents towards Awareness of Consumer Rights

Sl. No.	Consumer Rights	Aware		Not aware	
		No.	Percentage	No.	Percentage
1	Right to Safety	3	5	57	95
2	Right to be Informed	3	5	57	95
3	Right to Choose	2	3.3	58	96.7
4	Right to be Heard	3	5	57	95
5	Right to Redress	2	3.3	58	96.7
6	Right to Consumer education	9	15	51	85
7	Right to Healthy Environment	9	15	51	85

Consumer Responsibilities

Data on consumer responsibilities (table-4) reveals that a very low proportion of the present sample is aware of consumer responsibilities which are same as in case of the consumer rights. Comparatively a higher proportion (11.7%) of the sample is aware of the responsibility for environmental awareness. This may be because of more no. of awareness programmes on environmental issues, as the district is presently facing environmental pollution hazards due to rapid Industrialisation without safeguards in this aspect.

Table-4 Distribution of respondents towards Awareness of Consumer Responsibilities

Sl. No.	Consumer Responsibilities	Aware		Not aware	
		No.	Percentage	No.	Percentage
1	Responsibility for Critical Awareness	3	5	57	95
2	Responsibility for Action	1	1.7	59	98.3
3	Responsibility for Social Concern	3	5	57	95
4	Responsibility for Environmental Awareness	7	11.7	53	88.3

5	Responsibility for Solidarity
1	1.7
59	98.3

Protective Laws

It can be inferred from table -5 that general awareness towards protective laws was very poor among the women SHGs.However there is a substantial no. of women in the sample (11.7%) who are aware of the consumer protection act.

Table-5 Distribution of respondents towards Awareness of Protective Laws

Sl. No.	Consumer Rights	Aware		Not aware	
		No.	Percentage	No.	Percentage
1	Sale of Goods Act, 1930	-		60	100
2	Agricultural produce Act, 1937 (Grading & Marketing)	-	-	60	100
3	The Drugs & Cosmetics Act, 1940	-	-	60	100
4	Food Adulteration Act,1954	3	5	57	95
5	Monopolies and Restrictive 1977 Trade Practices Act,	-	-	60	100
6	The Standard of Weights& 1977 Measures Act,	4	6.7	56	93.3
7	Bureau of Indian 1986 Standards Act,	3	5	57	95
8	Household Electrical 1976 Appliances Order,	2	3.3	58	96.7
9	Consumer Protection Act,1986	7	11.7	53	88.3

Fraudulent Practices

Table- 5 signifies the extent of awareness of the consumers towards fraudulent practices used by the sellers. A large group of consumers i.e. 21% to 55% of the respondents were aware of the fraudulent practices such as improper weighing and measuring, misleading or

false advertisement, selling inferior quality products and adulteration of foods. Murali and kulkarni (1990) in their study reported that majority of the homemakers was aware that most of the food stuffs were adulterated.

Table-6 Distribution of respondents towards Awareness of Fraudulent Practices

Sl. No.	Fraudulent Practices	Aware		Not aware	
		No.	Percentage	No.	Percentage
1	Selling Inferior Quality Products	17	28.3	43	71.62
2	Improper Labeling of the products	9	15	51	85
3	Misleading or False Advertisement	19	31.6	41	68.3
4	Duplicate Products are sold at Original Price	11	18.3	49	81.6
5	Hoarding of Goods	11	18.3	49	81.6
6	Adulteration of Foods	13	21.6	47	78.3
7	Improper Weighing & Measuring	33	55	27	45

Consumer Organisations

Table-7 shows that the awareness of the respondents on the existing consumer organizations in Jharsuguda district is lacking among the respondents. It is very disheartening to note that only fifteen per cent of the respondents is aware of the district consumer forum followed by ten per cent of the respondents aware of the NGO named as CAPARD.(Centre of advancement of public and rural development services)

Table-7 Distribution of respondents towards Awareness of Consumer Organisations

Sl. No.	Consumer Organizations	Aware		Not aware	
	No.	Percentage		No.	Percentage
1	District Consumer Forum	9	15	51	85
2	CAPARD	6	10	54	90

3	The awareness	**Redressal Procedure**
-	-	
60	100	

It was observed in the table-6 that nobody was aware of the redressal procedures among the women of the Self Help Groups expect a very negligible proportion (3.3%) who are aware of the procedures like who can file a complaint and when to file a complaint.

Table-8 Distribution of respondents towards Awareness of Redressal Procedures

Sl. No.	Consumer Organizations	Aware		Not aware	
		No.	Percentage	No.	Percentage
1	Who can file a Complaint	2	3.3	58	96.7
2	When to file a Complaint	2	3.3	58	96.7
3	Where to file a Complaint	-	-	60	100
4	With whom to file a Complaint	-	-	60	100
5	On what grounds Complaint can be made	-	-	60	100100
6	How to file a Complaint	-	-	60	100
7	Benefits and Protective Measures	-	-	60	100

From the results of the study it can be concluded that the awareness on consumer issues like consumer rights, responsibilities,protective laws,redressal procedures, possible consumer actions and consumer organizations is negligible among the members of the women Self Help Groups. It is very important to make the women aware of the consumer issues so as to create an atmosphere of consumer satisfaction which will lead to better economic transaction. To create a true sense of empowerment among the rural women and to save them from the clutches of the middlemen, the most effective measure will be consumer education. Hence consumer education is the utmost need of the hour to bring a desirable change in the present situation.

References

Khana,R(2002)Central Law Agency,Allahabad,P-3-10

Natarajan,K(1990)Consumer Awareness towards ISI marks,Indian Journal of Marketing,Vol.29(6),P-16-31

Sivaprakasham,PRS(2001)Consumer Empowerment Rights & Responsibilities,Kanishka Publishers,New Delhi,P-3-30

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Role of Nokma (Village Headman) in Agriculture of West Garo Hills, Meghalaya

Biswajit Lahiri* and Puspita Das**

In India, most of the states are dependent on agriculture. Higher percentage of contribution in Gross Domestic Production in the economy of most states is the proof of their dependency on agriculture. The state of Meghalaya is also no exception. Almost eighty per cent of total population of Meghalaya is dependent on agriculture for earning their livelihoods. Although agriculture occupies an important place in the economy of the state but only a little more than 8 percent of the total geographical area is available for cultivation and out of which only 13 percent of the cultivated land produces more than one crop in a year (Bhakta, 2002). The rainfall in the state is adequate for agriculture, but due to rugged topography and other various reasons, productivity is not satisfactory. After independence, this part of our country has experienced several geo-political transformations. Inevitably, the development of agriculture also suffered little bit due to these changes. But, after achieving the statehood in 1972, development of agriculture got an impetuous, which is evident by almost forty two per cent increases in total cropped area during last twenty five years. Particularly, in cultivation of food grains, vegetables, fruits, commercial flowers, plantation crops, orchids and *Anthorium*, state have achieved a remarkable progress. (Source: Statistical Hand Book, Meghalaya, 2007). But, like other hilly states, the development of agriculture is also not easy task due to several constraints, like tough terrains, traditional jhum cultivation, tradition bound farmers, poor infrastructural facilities, inadequate marketing facilities and lack of intensive extension activities. Moreover, like other north-eastern states, Meghalaya has diverse ethnicity, which also hinders to take some common programme for the development of agriculture. In Meghalaya, three major tribes, Khasi, Garo and Jaintia are visible, who have different cultures, norms, taboos, customary laws, languages etc. Since, time immemorial, agriculture is interwoven with culture of a society, so there are also differences in terms of agriculture among these tribes. Like,

most of the north-eastern states, shifting cultivation (Jhuming) are also popular in Garo hills. The Garo tribe of the plain areas practice wet-rice agriculture. According to Nakane (1967), they live in a cultural and ecological environment entirely different from that of the Garo of the hills. Thus, the traditional approach of extension activities taken in other parts of the country for development of agriculture may not be too much effective due to different socio-economic, socio-cultural and socio-anthropological situation in this part of the country.

The present study has been confined to particularly on Garo tribes and the contribution of *Nokma* (Village Headman) in the agricultural activities in the area. Thus it is essential to have an idea about the Garo hills, the Garo tribes and their agricultural practices. The majority of the population in Garo hills belongs to the Garo tribe, who called themselves *Aÿchik*. Garo society is matrilineal, and inheritance is through the mother. Kar (1982) stated in his study, in Garo hills, the land is of two types; aÿ king and *aÿmilam* land. The management of the *aÿking* land is entrusted to the *Nokma* or Village Headman. *Nokma* is the husband of the main lady of the founder clan (*Machong*) of the community. The District Council possesses complete records of the boundaries of each tract of an *aÿking* land and handover to *Nokma*. *Nokma* distributes his *aÿking* land among the individual farmer for a particular period for cultivation purpose. The individual needs not to pay any tribute to the *Nokma.* Obviously, *Nokma* has very important role in agriculture in Garo Hills, because he has the sole authority to distribute the land to the villagers and also provides some directions. As *Nokma* has the supreme authority in his *aÿking*, he can play a pivotal role in agricultural development in Garo hills and in extension point of view, they have certain edge to help their people to help themselves.

Thus in this backdrop, the present study was formulated with the following objectives;

- To study the different socio-economic condition of the *Nokma*
- To assess the *Nokma*s' role in different aspects of agricultural operation,
- To explore the potentiality of *Nokma* as rural leader for betterment of agriculture in the area,

Research Methodology:

The present study was conducted on exploratory type of research design. Data were collected from both primary and secondary sources. Different information regarding Garo customary laws in

relation to agriculture were collected form secondary sources, like Garo Autonomous District Council, *Nokma* Association (Council), District Commissioner's Office, Krishi Vigyan Kendra, State Agricultural Department, NGOs etc. For the present study, among the three districts in Garo hills, West Garo hills District was selected purposively for the convenience of the researchers and easy accessibility. For selection of villages, all the villages of West Garo Hill district were grouped into three different categories, namely high hills, medium hills and plain areas. Ten villages from each category were selected by Simple Random Sampling (Without Replacement) from list of total villages in each category. So, altogether 30 (thirty) villages were selected from three categories in the district. Now, each village is governed by only one *Nokma.* Due to lack of proper communication facilities and insufficient funds, study area was confined in thirty villages. So, the 30 *Nokmas* (Thirty) in those thirty villages were also interviewed with semi-structured interview schedule. The data were analyzed through frequency distribution, percentage distribution and correlation co-efficient.

Results and Discussion:

Table-1. Educational Status

Education	**Frequency**	**Percent**
Illiterate	1	3.3
Can Read only	2	6.7
Read and Write	10	33.3
Primary Level	1	3.3
Middle Level	8	26.7
Higher Secondary School	**Total**	
8	**30**	
26.7	**100.0**	

The above table reveals the educational status of the *Nokmas.* It was

found from the study that 33.3 per cent of *Nokma* can read and write only. But, at the same time, more than 50 per cent of the *Nokmas* studied up to Middle level or above. Thus, it can be stated that in terms of higher education, educational status of *Nokmas* was not very high, but the elementary educational status was quite good.

Table-2. Family Type

Family Type	**Frequency**	**Percent**
Nuclear Family	4	13.3
Joint Family	26	86.7
Total	30	100.0

The table states that 86.7 percent of the *Nokmas* lived in joint family and only 13.3 percent of the *Nokma* were staying in nuclear family, which suggests *Nokmas* did not want to break their tradition in terms to their dwelling status.

Table-3. Family Size

Family Size	**Frequency**		**Percent**
Up to 5	5	Above 5	25
16.7		83.3	
Total	**30**		**100.0**

It is evident from the table that in 83.3 percent cases, there were more than 5 family members in *Nokmas'* family. This is probably because majority of the *Nokmas* belonged to joint family.

Table-4. Patterns Followed for Distribution of Land

Distribution of Land	**Frequency**	**Percent**
First come first serve	5	16.7
First to our clan then to others	It was done years back	
10	15	
33.3	50.0	
	Total	
	30	
	100.0	

In the Garo Customary Law, *Nokma* has the sole authority for distribution of agricultural lands to the villager. From the study, it was found that in 50 per cent villages, present *Nokmas* had no role in distribution of agricultural lands as it had been done years back. But, 33.3 percent of *Nokmas* stated that land was distributed first to those farmers, who belong to their clan and then to others, whereas 16.7 percent of the *Nokmas* stated that land was distributed on first come first serve basis.

Table-5. Problem Regarding Distribution of Land	**Response Frequency**	**Percent**
Yes	2	6.7
No	28	93.3
Total	**30**	**100.0**

From the study, it was found that 93.3 percent of the *Nokmas* are not facing any problem regarding distribution of land whereas 6.7 percent of the *Nokmas* opined that there are some problems regarding the distribution of land.

Table-6. Undergone Training in Agriculture	**Response Frequency**	**Percent**
Workshop	5	16.7
No	25	83.3
Total	**30**	**100.0**

Though *Nokmas* are taking important decisions regarding agricultural activities in their villages, but the study reveals that 83.3 percent of the *Nokmas* did not undergone any training regarding agriculture. Only 16.7 percent of the *Nokmas* attended some workshops on agriculture, which were held in their villages.

Table-7. Types of Farming Followed In the Villages		
Types of Farming	**Frequency**	**Percent**
Settled Cultivation	8	26.7
Jhum Cultivation	16	53.3

Both	6	20.0
Total	**30**	**100.0**

The table suggests that 53.3 percent of the *Nokmas* opined that jhum cultivation was mostly practice in their villages, 26.3 percent of the *Nokmas* stated that settled cultivation was mostly practice in their villages and in 20 percent cases both jhum and settled cultivation were practice in their village.

Table-8. Received Plant Nutrients from Different Sources

Different Sources	Government Officials	
Frequency	8	
Percent	26.7	
Purchase from Market	3	10.0
Not Using	19	63.3
Total	**30**	**100.0**

That above table reveals that 26.7 percent of the *Nokmas* were receiving plant nutrients in their villages from the Government officials, whereas 10 percent of the *Nokmas* stated that they purchase the plant nutrients from the market for their cultivation. But, most astonishing in 63.3 per cent cases, they were not using or receiving any plant nutrients in their villages.

Table-9. Knowledge about Integrated Nutrient Management

Response	**Frequency**	**Percent**
Yes	4	13.3
No	26	86.7
Total	**30**	**100.0**

The above table envisages that 13.3 percent of the *Nokmas* have some knowledge about Integrated Nutrient Management whereas 86.7 percent of the *Nokmas* do not have any knowledge about Integrated Nutrient Management.

Table-10. Use of Plant Protection Measure by Villagers

Response	Frequency	Percent
Nothing	20	66.7
Use scarecrow	4	13.3
PP Chemicals	6	20.0
Total	**30**	**100.0**

66.7 percent of the *Nokmas* stated that villagers are not provided any kind of plant protection measures to protect their plants. Only 20 percent of the *Nokmas* told villagers use some plant protection chemicals for their crops.

Table-11. Knowledge about Integrated Pest Management

Response	Frequency	Percent
Yes	4	13.3
No	26	86.7
Total	**30**	**100.0**

The above table states that like Integrated Nutrient Management practices, 86.7 percent of the *Nokmas* have no knowledge about Integrated Pest Management whereas 13.3 percent of the *Nokmas* opined that they have some the knowledge about Integrated Pest Management.

Table-12. Help Villagers in Showing Direction

Response	Frequency	Percent
Yes	18	60.0
No	12	40.0
Total	**30**	**100.0**

The above table reveals that 60 percent of the *Nokmas* showed direction to the villager for the betterment of their agriculture whereas 40 percent of the *Nokmas* did not.

Table-13. Help Villagers with Man Power

Response	Frequency	Percent
Not required	15	50.0
Yes, if needed	15	50.0
Total	**30**	**100.0**

The table shows that 50 percent of the *Nokmas* help the villager with man-power if they needed and 50 percent of the *Nokmas* opined farmers did not need help regarding man-power.

Table-14. Help in Obtaining Agricultural Equipments

Response	Yes	22
Frequency		
Percent		73.3
	No	8
		26.7
Total	**30**	**100.0**

The above table depicts that 73.3 percent of the *Nokmas* help their villagers in obtaining agricultural equipments and 26.7 percent of the *Nokmas* did not help their villagers in obtaining agricultural equipments for their cultivation.

Table-15. Help in Obtaining Necessary Seeds

Response	Frequency	Percent
Yes	17	56.7
No	13	43.3
Total	**30**	**100.0**

The above table reveals that 56.7 percent of the *Nokmas* help their villagers in obtaining necessary seeds for plantation, 43.3 percent of the *Nokmas* stated they did not provide any help as

because some farmers collects their own seeds.

Table-16. Inspect Agricultural Activities

Response	Frequency	Percent
Yes	5	16.7
No	19	63.3
No Formal Inspection	6	20.0
Total	**30**	**100.0**

From the study, it was found that 63.3 percent of the *Nokmas* did not inspect the agricultural activities of their villagers and 16.7 percent of the *Nokmas* inspect the agricultural activities of their villagers on regular basis. Besides that 20 per cent of them inspected villager's agricultural activities as when it was necessary.

Table-17. Attitude towards Modern Agriculture

Response	Frequency	Percent
Good	16	53.3
Good but expensive	7	23.3
Not affordable	5	16.7
No idea	2	6.7
Total	30	100.0

53.3 percent of the *Nokmas* opined that modern agriculture is good as it is evident from the table. But, 23.3 percent of the *Nokmas* told that modern agriculture is good but expensive and 16.7 percent of the *Nokmas* expressed that modern agriculture is not affordable by their villagers.

Table-18. Satisfied with Agricultural Production

Response	Frequency	Percent
Yes	27	90.0
No	3	10.0

Total	**30**	**100.0**

Most interestingly, it was found from the study that 90 percent of the *Nokmas* were satisfied with agricultural production in their village and 10 percent of the *Nokmas* were found to be not satisfied in their agricultural production.

Here an attempt was made to find out, whether any relation exist between opinion of *Nokma* in development of agriculture in village as dependent variable (Y) and other different variables as causal variables or dependent variables (X_1.....X_{11}). The opinion of *Nokma* in development of agriculture in village was measured in 5-point semantic scale against some statement regarding agricultural activities in the villages. The data of the causal variables were also collected in the standard scale developed by the earlier researchers. To find out cause and effect relation, Pearson Correlation Co-efficient were measure. The significant test of the Correlation Co-efficient was done at 5% and 1% level.

Table-19. Correlation between Opinion of *Nokmas* in Development of Agriculture in Village and Other Independent Variables

Independent Variables	**Correlation Co-efficient (r)**
Categories of Area (X_1)	-0.312
Educational Status (X_2)	**0.443***
Family Type (X_3)	0.005
Family Size (X_4)	0.097
Material Possession (X_5)	0.254
Undergone Training (X_6)	-0.003
Types of Farming Followed (X_7)	-0.090
Knowledge about Integrated Nutrient Management (X_8)	0.243
Knowledge about Integrated Pest Management (X_9)	0.096
Inspect Agricultural Activities (X_{10})	**0.457***
Attitude towards Modern Agriculture (X_{11})	0.039

(*5% level of significance)

From the table it is evident that most of dependent variable has no significant relation with the opinion of Nokma in

development of agriculture in village. Only Educational Status(X_2) and Inspect Agricultural Activities (X_{10}) are positively correlated (significant at 5% level) with the opinion of Nokma in development of agriculture in village. Hence, any increase in educational status of Nokma and inspection of agricultural activities of farmers will bring positive change in the opinion of Nokma in development of agriculture in village.

Thus, it was evident from the study that the elementary education status of *Nokmas* is fairly good, but they do not have higher education which has some bearings over their opinion regarding development of agriculture in their villages. Lack of proper education also becomes a hindrance regarding some training in agriculture. But, in Garo Customary Laws, *Nokma* plays a very important role in almost every aspects of village life. But, form the study; it was found that Nokmas do not properly inspect the agricultural activities of the villagers, though in some areas they try to help the farmers. Most, interestingly, most of the *Nokmas* were satisfied with agricultural production in their villages, though productivity data of Garo Hills is not up to the standard. It happens mainly because the lack of proper technical knowhow in field of agriculture. This also restricts the adoption of modern practices of agriculture. Hence, for agricultural development in the village, *Nokma* should possess a very good technical knowledge of agricultural activities. Government should prepare a meticulous plan of location specific extension activities for different terrain (high hills, medium hills, plain areas) to train the *Nokmas*, in different aspects of agricultural activities, so that the *Nokmas* can become the vanguard for agricultural development in Garo Hills.

References:

Playfair, Alan (1909) 'The Garos', Introduction by Sir J. Bampfylde Fuller, London, David Nutt, 1909.16, 172 p. illus., maps.

Nakane, Chie (1967), ' Garo and Khasi: a comparative study in matrilineal systems.' Paris, Mouton.

Kar, P. C. (1982). 'The Garos in Transition'. publ: Cosmo Publications, New Delhi. Pp-22-32, 44-61.

Jadhav, S. S., Dhane, A. V., Dhane, V. P. (1999). 'Planner Role as Perceived and Performed by Sarpanchs.' Journal of Maharashtra Agricultural Universities. ***2:****20-22*

Marak, J. L. R. (2000). 'Garo Customary Laws and Practices.' publ: Akansha Publishing House, New Delhi. Pp.19-20

Bhakta, B.K. (2002) 'Geography of Meghalaya', publ: Akansha Publishing House, New Delhi.

Marak, P.R. (2005), "The Garo Tribal Religion" publ: Anshah Publishing House, Delhi, pp. 37-41

Rahman, S.A. (2006), "The Beautiful India Meghalaya" publ: Reference Press, New Delhi, pp. 139

Rizvi, S. H. M. and Roy, S. (2006). 'Garo (Aÿchik) Tribe of Meghalaya'. publ: B.R. Publishing Corporation, New Delhi. pp. 53-54

Statistical Hand Book, Meghalaya, 2007

Journal of Extension Education
Vol. XIV, Nos. 1 & 2, 2009

Increasing Production of Crops through Village Adoption

Dr (Mrs.) Bishnupriya Mishra and R.Mishra

The agricultural technology recommendations until and unless reach he the end users, the esteemed farming community do not serve the purpose. Transfer of technology is better defined as the dissemination of innovations and research recommendations appropriate for these farm operators to serve the nation in terms of food and economic security.The Krishi Vigyan Kendras in this backdrop play a major role rather catalytic for transfer of technology with scientific touch through methodology of village adoption .The emphasis is laid on capacity building of interest groups ,cluster village approach and model technology dissemination system in varieties of farming systems through knowledge intensive programs for bridging the gap between what is and what ought to be. In this context a study was undertaken in Puri district of Orissa in adopted villages of KVK during 2009 with the following objectives.

1. To study the extent of increase in productivity of crops due to village adoption
2. To study the factors contributing towards the increase in productivity of crops due to village adoption.

Research methodology

Methodology of before and after design of study was followed for the study keeping the external factors as limitations like supply and services rendered by the agriculture extension mechanism of the state . The technological interventions were made after prioritization of problems through participatory rural appraisal , need assessment and follow up activities . The data were collected from three hundred farmers from six adopted villages during the year 2009 through proportionate random sampling technique using pre tested semi structured interview schedule through personal interview method and participant observation technique . The data were analyzed using simple statistics and interpretations were made as per the results revealed .

Findings and Discussion

The findings of the study include the productivity before and after the village adoption as per the tables follow.

Table 1: Year wise distribution of households and their categories in adopted villages

S.LNo	Name of the village	Year of adoption	Total no. of house holds
1	Sundara	2007	78
2	Nandipur	2007-08	31
3	Silary	2008-09	21
4	Damasun	2007	56
5	Suara	2007-08	107
6	Chandikuda	2007	103

The year wise details of households (Table 1) and their categories revealed that the house holds range from 21 (Silari) to 107 (Chandikuda). Though the farmers get HYV seeds, fertilizers and other critical inputs at ease, still they have shown low adoption behavior in use of inputs in crops identified through participatory approach and prioritization by the farmers in order of importance (Table 2).

Table 2: Crops identified for increasing productivity

Sl.No.	Name of the village	Crops identified
1	Sundara	Rice, Groundnut, sunflower, vegetables, betel vine, coconut
2	Nandipur	Rice, cabbage, brinjal, coconut
3	Silary	Okra, betel vine
4	Damasun	Rice, coconut
5	Suara	Rice, vegetables, betel vine, coconut
6	Chandikuda	Vegetables, betel vine, coconut
7	Othaka	Rice, vegetables, betel vine, coconut
8	Gokulapur	Rice, betel vine

The interventions in the village due to adoption includes the motivation towards the use of monetary and non monetary inputs(Table-3) that are responsible for increasing the productivity and production. The monetary inputs alone would not enhance the productivity without proper knowledge on management of soil health, timeliness and appropriate dose of inputs as well as crop rotations that contribute in terms of qualitative improvement of soil which brings productivity up. The continuous follow up by the scientists also are responsible for management of knowledge at critical sages of crop growth in order to have better retention of knowledge on production technology.

Table 3: Interventions of Technology / Inputs

Sl.No.	Type of interventions	Details of interventions
1	Monetary inputs	• HYV seeds • Adoption of seed treatment • Use of balanced fertilizers (FYM, NPK, Green manures and Bio-fertilizers) • Appropriate plant protection measures
	Non-monetary inputs	• Maintaining optimum plant population and spacing • Optimum time of sowing • Proper management of irrigation • Scientific crop rotations • Green manuring with Dhanicha in rice • Use of bio fertilizers & Azolla in rice • Use of bio-fertilizers in oilseeds and pulses • Field visits, focus group discussion and follow up action by KVK scientists for effective monitoring in regular intervals at critical crop growth stage.

Table 4: Crop wise and average productivity of crops of the adopted villages

Sl.No.	Name of the Village	Crops	Avg. Productivity (q/ha) 2006-2007	District avg. productivity (2006-07)
1	Sundara	Rice	20.0	20.46
		Groundnut	12.5	22.30
		Sunflower	3.0	4.72
		Vegetables	185.0	253.8
		Betel vine	17 lakh leaves/ha/yr	25-30 lakh leaves/ha/yr
		Coconut	5490 nuts/ha	7086 nuts/ha
2	Nandipur	Rice	19.5	20.46
		Cabbage	210	276.15
		Brinjal	165.4	145.0
		Coconut	5320 nuts/ha	7086 nuts/ha
3.	Silary	Okra	90.3	
		Betel vine	18.0 lakh leaves/ha/yr	25-30 lakh leaves/ha/yr
4.	Damsun	Rice	16.0	20.46
		Coconut	5600 nuts/ha	7344 nuts/ha
5.	Suara	Rice	18.0	22.46
		Betel vine	19.0 lakh leaves/ha/yr	25-30 lakh leaves/ha/yr
		Vegetables	190.0	253.8
		Coconut	6030 nuts/ha	7086 nuts/ha
6	Chandikuda	paddy	20	22.46
		Betel vine	21.0 lakh leaves/ha/yr	25-30 lakh leaves/ha/yr
		Vegetables	190.0	253.8
		Coconut	5400 nuts/ha	7086 nuts/ha
		Vegetable	190.0	253.8

Table5: Status of inputs used in the adopted villages (2006-07)

Sl.No.	Name of the Village	Crops	HYV/Hybrids fertilizer	Seed treatment	Plant protection measures	
1	Sundara	Paddy	44(88)	29(58)	21(42)	21(42)
		Groundnut	40(80)	15(30)	16(32)	14(28)
		Sunflower	30(60)	12(24)	14(28)	12(24)
		Vegetables	30(60)	19(38)	21(42)	18(36)
		Betel vine	0	0	18(36)	13(26)
		Coconut	0	0	0	3(6)
2	Nandipur	Paddy	27(54)	25(50)	12(24)	21(42)
		Cabbage	24(48)	15(30)	16(32)	0
		Brinjal	14(28)	11(22)	13(26)	11(22)
		Coconut	12(24)	0	3(6)	3(6)
3.	Silary	Paddy	26(54)	14(28)	9(18)	18(36)
		Okra	32(64)	17(34)	9(18)	12(24)
		Betel vine	NA	0	14(28)	16(32)
4.	Damsun	Paddy	22(44)	17(34)	12(24)	18(36)
		Coconut	NA	0	12(4)	2(4)
5.	Suara	Paddy	35(70)	22(44)	14(28)	22(44)
		Betel vine	NA	10(20)	11(22)	19(38)
		Vegetables	32(64)	13(26)	13(26)	18(36)
		Coconut	9(18)	0	0	0
6.	Chandikuda	Paddy	25(50)	12(24)	15(30)	25(50)
		Betel vine	NA	0	15(30)	12(24)
		Vegetables	32(64)	12(24)	11(22)	13(26)
		Coconut	NA	0	0	0

NA-Not available(Local vars.)

Table 6: Level of increase of various inputs by the farmers in selected crops

Name of the Village	Crops	Level of inputs before adoption (2006-07)				Level of inputs after adoption (2008-09)			
		HYV/ Hybrids	Seed treatment	Balanced fertilizer	Plant protection measures	HYV/ Hybrids	Seed treatment	Balanced fertilizer	Plant protection measures
Sundara	Paddy	44(88)	29(58)	21(42)	21(48)	(49)98		29(58)	34(68)
	Groundnut	40(80	15(30)	16(32)	14(28)	(48)96	45(90)	25(50)	32(64)
	Sunflower	30(60)	12(24)	14(28)	12(28)	(48)96	47(84)	44(88)	31(62)
	Vegetables	30	19(38)	21(42)	18(36)	(47)94	44(84)	32(64)	34(68)
	Betel vine	0(0)	0(0)	18(36)	13(26)	(0)0	32(64)	31(62)	31(62)
	Coconut	0	0(0)	0(0)	3(6)	(0)0	20(40)	38(76)	32(64)
Nandipur	Paddy	27(54)	25(50)	25(50)	21(42)	(49)98	42(84)	29(58)	30(60)
	Cabbage	24(48)	15(30)	15(30)	21(42)	50(100)	47(98)	31(62)	31(62)
	Brinjal	14(28)	11(22)	13(26)	11(212)	(37)74	32(64)	31(62)	33(66)
	Coconut	12(24)	0(0)	3(6)	3(6)	(11)22	20(40)	24(48)	21(42)
Silary	Paddy	26(52)	14(28)	9(18)	18(36)	40(80)	31(62)	35(70)	50(100)
	Okra	32	17(34)	9(18)	12(24)	47(98)	24(48)	29(58)	37(74)
	Betel vine	0(0)	0(0)	25(50)	16(32)	0(0)	25(50)	27(54)	26(52)
Damsun	Rice	22(44)	17(34)	12(24)	18(36)	(36)72	39(78)	37(74)	28(56)
	Coconut	0(0)	0()	12(24)	2(4)	(10)20	32(64)	15(30)	13(26)
Suara	Paddy	35(70)	22()0	14(28)	22(44)	(48)96	32(64)	31(62)	31(62)
	Betel vine	9(18)	10(20)	11(22)	19(38)	(0)0	30(60)	33(66)	32(64)
	Vegetables	32(64)	13(26)	13(26)	18(36)	(47)84	42(84)	32(64)	31(62)
	Coconut	9(18)	0(0)	0(0)	0(0)	20(40)	30(60)	21(42)	11(22)
Nandikuda	paddy	25(50)	12(24)	15(30)	25(50	38(76)	38(78)	20(40)	40(80)
	Betel vine	0(00)	0(0)	15(30)	12(24)	0(0)	20(40)	14(28)	32(64)
	Vegetables	32(64)	12(24)	11(22)	13(26)	96(48)	42(84)	33(66)	31(62)
	Coconut	0(0)	0(0)	0(0)	0(0)	20(40)	20(40)	20(40)	20(40)

F.N. Figures in parenthesis indicate percentage

The year wise, crop wise area along with the average productivity of village and that of the district has been appraised for productivity enhancement in the crops. The status of level of inputs used and the extent of adoption of different inputs was also found out before technology dissemination for analytical study. The level of inputs used was seen to be increased after adoption of different components of the technology through interventions of KVK.

Table 7: Increase in productivity of various crops in the adopted villages

Sl.No.	Name of the	Crops	Productivity before adoption (q/ha) 2006-07 after adoption increase	Productivity (q/ adoption (q/ha) 2008-09 (q/ha)	%
1	Sundara	Rice	20.0	26.0	30.0
		Groundnut	12.5	20.0	60.0
		Sunflower	4.0	9.0	125
		Vegetables	185.0	245	32.43
		Betelvine leaves/ha/yr	17 lakh leaves/ha/yr 41.0	24 lakh	
		Coconut	5490 nuts/ha	7224 nuts/ha	31.0
2	Nandipur	Rice	19.5	25.0	28.2
		Cabbage	210	285	33.0
		Brinjal	165.4	220.0	33.0
		Coconut	5320 nuts/ha	7124 nuts/ha	33.9
3.	Silary	paddy			
		Okra	90.3	125.0	38.42
		Betelvine leaves/ha/yr	18.0 lakh leaves/ha/yr 27.7	23 lakh	

4.	Damsun	Rice	16.0	22.0	37.5
		Coconut	5600 nuts/ha	7123 nuts/ha	27.19
5.	Suara	Rice	18.0	24.0	33.0
		Betelvine	19.0 lakh leaves/ha/yr	23.0 lakh leaves/ha/yr	21.0
		Vegetables	190.0	225	18.42
		Coconut	6030 nuts/ha	7520 nuts/ha	20.29
6.	Chandikuda	paddy	22	30	36
		Betel vine	21.0 lakh leaves/ha/yr	26 8lakh leaves/ha/yr	23
		Vegetables	190.0	249	31.0
		Coconut	5400 nuts/ha	7285 nuts/ha	34.90

The productivity has been increased in all the crops ranging from 21% in betelvine to 125.0% in sunflower. The farmers could be able to get the incremental benefits due to increase in productivity of crop through adoption of improved technology through village adoption and knowledge intensive program of KVK.

Factors contributing towards increasing production and productivity

Four important factors were taken as parameters of the study contributing to increasing production and productivity such as technical, extension, social/management and suitability of the technology. Te data in table-8 revealed that choosing HYV/ Hybrid seeds, appropriate seed rate and seed treatment were ranked first followed by soil test, appropriate plant protection measures and use of bio fertilizers(ranked second). Rest sub factors are timely irrigation, method of sowing and fertilizer application , use of farm implements etc The data in table-9 revealed that out of the extension factors training and demonstration were ranked first followed by counseling, group discussion, field visit and technical literatures. Similarly the findings of social and management factors revealed that understanding, group formation and sharing of technology among the farmers were ranked first followed by sharing of

irrigation, marketing, problem solving, cooperation and cosmopolite ness . Regarding the suitability of the technology the data in table-11 revealed that profitability, ecological soundness, humanness and adaptability of the technology were ranked first followed by availability, replicability, stability, gender balancing and accessibility of the technology.

The analysis of the factors that contributed for increasing productivity of crops revealed that due to intervention of KVK an effective linkage could be established among the farmers and input dealers as well as the state department of agriculture for ensuring the supply of critical inputs at the time of need. Similarly the continuous follow up by the scientists of KVK cold render immense impact towards adoption of improved technology by the farmers through formation of groups, encouraging cooperation for sharing f the technology and understanding of the technologies in terms of suitability that includes profitability, humanness, ecological soundness, adaptability and accessibility etc.

Table-8 Technical factors

SL. No	Factors	Rank
1	Choosing hyv/hybrid var.s	I
2	Appropriate seed rate	I
3	Soil test	II
4	See treatment	I
5	Application of balanced fertilizer	II
6	Appropriate plant protection measures	II
7	Timely irrigation	III
8	Method of sowing	IV
9	Method of fertilizer application	IV
10	Method of application of plant protection materials	IV
11	Use of bio fertilizers	IV
12	Use of farm implements	II

Table-9 Extension factors

SL. No	Factors	Rank
1	Training	I
2	Demonstration	I
3	Group discussion	III
4	Field visit	II
5	Technical literature	III
6	Counseling	II

Table-10 Social/Management factors

SL. No	factors	Rank
1	Understanding among farmers regarding technology adoption	I
2	Group formation for procurement of inputs	I
3	Sharing of technology	I
4	Sharing of irrigation	II
5	Sharing of marketing	II
6	Sharing of problem solving	III
7	Cooperation among farmers	III
8	Cosmopolite ness	IV

Table-11 Technical factors

SL. No	factors	Rank
1	Availability of the technology	II
2	Accessibility of the technology	II
3	Profitability of the technology	I
4	Humanness of the technology	I
5	Ecological soundness of the technology	I
6	Acceptability of the technology	I
7	Replicability of the technology	II

8	Stability of the technology	II
9	Adaptability of the technology	I
10	Gender balancing of the technology	II

Conclusion

The study concluded that increase in productivity of crops could be achieved due to the communicative and total effect of the technological interventions suitable to the farming situations could be placed and delivered in a holistic approach. The study further emphasizes that for the better applicability if the technology they need to be assessed in terms of money and time as and when required. The technology should be applicable in similar farming situation to have a better coverage and bringing self reliance among a sizable number of farmers through horizontal spread.

References

1. *Choudhury B.N.(1999). Krishi Vigyan Kendra-Aguide for KVK managers. Publication Division of AgriculturalExtension,ICAR.pp 73-78*

2. *Tiwari K.B. and Saxena A. (2001). Economic Analysis of FLD of oilseeds in Chindwara.Bharatiya Krishi Anusandhan Patrika. 16(3&4):185-189*

3. *Tomar.L.S.,Sharma P.B. and Joshi K(2003). Study on yield gp and Adoption level of potato production technology in grid region .Maha . J. Ext. Edu.22(1): 15-18*