IMPACT OF INTEGRATED FARMING SYSTEM ON SOCIO-ECONOMIC STATUS OF BHARATIYA AGRO-INDUSTRIES FOUNDATION (BAIF) BENEFICIARY FARMERS

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1. INTRODUCTION

"Nothing would contribute to the welfare of the state other than the maintenance of soil fertility."

- "George Washington"

India with 2.2 per cent of global geographical area supports more than 15 per cent of the total world population, 60 per cent of whom depend on agriculture. It also supports nearly 15 per cent of the total livestock population of the world. One third of the gross national product comes from agricultural sector. Though there has been increase in food production from 51 million tones (in 1950) to209 million tones (2005), but nearly 40 per cent of the Indian rural population still lives below the poverty line who cannot afford two square meals a day. Nearly 84 per cent of farm families belong to small and marginal categories. The percapita availability of land has declined from 0.36ha and is projected to touch 0.2ha by the turn of the century.

Indian economy is predominantly rural and agriculture oriented where the declining trend in the average size of the farm holding poses a serious problem. In agriculture 84 per cent of the holding is less than 2 acres. Majority of them are dry lands and even irrigated areas depend on the vagaries of monsoon. In this context, if farmers concentrated on crop production they will be subjected to a high degree of uncertainty in income and employment. Hence, it is imperative to evolve suitable strategy for augmenting the income of the small and marginal farmers by combining to increase the productivity and supplement the income. In an agricultural country like India, the average land holding is very small. The population is steadily increasing without any possibility of increase in land area. The income from cropping for an average farmer is hardly sufficient to sustain his family. The farmer has to be assured of a regular income for a reasonable standard of living by including other enterprises.

This strategy is highly relevant for enhancing the economic options among smaller farms for a labour surplus economy in rural sector for maximization of employment opportunities for the upliftment of landless, small and marginal farmers, who constitute about 84 per cent of total farmers. Opportunities for diversification of labour employment have to be created so that growing surplus labour force may be absorbed in the villages this is because the productivity of small farms is not only too low but also farm size is too small to realize the scale of economies.

The integration of farm enterprises often suggested as the means for rapid economic development in India. Having achieved some success in rising crop production through various technological and institutional changes, the country is now said to be poised for white and blue revolutions involving substantial increase in livestock and fish output. In view of the growing pressure of population and limited scope of increasing additional income through crop production, beyond a point such a diversification is considered essential not only for the liberation of the rural masses from the squalor of poverty but also for meeting the demands of milk products, meat, fish, eggs etc. Which generally show rising trends with increasing levels of percapita income in the country.

Agriculture sector in India

1. Employment : About 60% of the Indian population depending upon agriculture and it contributes about 20% of GDP
2. Per capita availability of land : during 1991-0.23 ha 2000-0.19 ha and 2005-0.17 ha
3. Annually 0.8 to 1.0% agricultural land is being taken away for urbanization, thus reduction in cultivable land area.

Achievements since independence

1. Green revolution lead to 3-fold increase in food grains (from 51 to 209 m.t.)
2. Blue revolution to 6-fold increase in fish (0.75 to 5.65 m.t)
3. Yellow revolution lead to 5-fold increase in oil seeds (5 to 25 m.t)
4. Red revolution leads to 3.5-fold increase in fruits and vegetables (38 to 149 m.t)

5. White revolution lead to 4-fold increase in milk (18 to 71 m.t)
6. The country is heading towards rainbow revolution including the ongoing information technology revolution.

Food grain production in India:

1950	- 51 million tonnes
2000-01	- 196.81 million tonnes
2001-02	- 212.85 million tonnes
2002-03	- 174.19 million tonnes
2003-04	- 213.46 million tonnes
2004-05	- 209.0 million tonnes
2050	- 400 million tonnes (estimated)

In the last 50 years, food grain production was increased by 159 million tonnes in next 50 years, food grain production will be increase by 203 million tonnes.

Agriculture sector in Karnataka:

Eighty three per cent suitable for agriculture and allied activities and 17% not available for cultivation (forestry, pasture, mining, and wildlife) 19%-good cultivable land, 41%-moderately good for cultivation 14%-land suited for grazing and forestry and 2.5%-suitable for wild life, recreation .

Definition of integrated farming system (IFS)

Itnal et al. (1999) stated that, farming system is a resource management strategy to achieve economic and sustained agricultural production to meet diverse requirement of the farm household while preserving the resource base and maintaining high environmental quality.

OR

Integration of two or more appropriate combination of enterprises like crop, dairy, piggery, fishery, poultry, bee keeping etc.,for each farm according to the availability of resources to sustain and satisfy the necessities of the farmer.

Concept of IFS

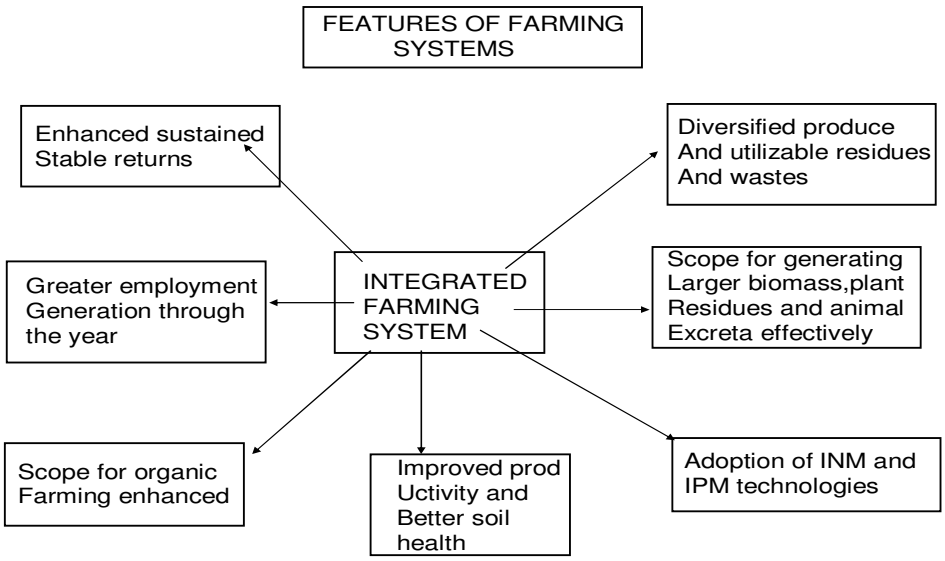
IFS seems to be answer to the problems of increasing food production, increasing net farm income, improving nutritional status promoting natural resource management-sustainable use of land, water and biota.

Farming system is a complex interrelated nature of soils, plants, animals, implements, power, labour, capital and other inputs controlled in part by farming family and influenced by social forces that operate at many levels.

Objectives of Integrated Farming System

1. To encourage farmers to take up improvement in all the crops grown by them by demonstrating new agricultural technologies.
2. To assist farmers in introducing other subsidiary enterprise like dairy, poultry, fisheries, sericulture, piggery etc.
3. To educate farmers to make them account conscious
4. To help farmers improve their standard of living by working with them over a period of tome
5. To develop integrated farming system units as centres of agricultural development in the local areas.

Features of farming systems



Characteristics of IFS

- IFS is a unique method of educating farmers. The farmers who adopt IFS on a long run will gain knowledge on all aspects and can be a management expert in developing model of high returns.
- Develop individual farms over a period of time
- IFS obtain continuous maximum returns
- Efficient management of all the available resources
- IFS is a continuous decision making process
- IFS is a labour intensive technically feasible, environmentally sound, economically viable, and socially acceptable method of agriculture
- Immediate goal of IFS is increasing net income and ultimate goal is family welfare sustenance.

Hence by looking to the present scenario, it is proposed to have the integrated farming system approach instead of growing only field crops. This will supplement the crop loss and enable the farmers to get income from other farm enterprises. Keeping this in view, it was felt necessary to take up the study on integrated farming system.

BAIF is an NGO which has undertaken integrated farming system programmes in Dharwad district. Hence, present study was undertaken to know the impact of IFS on the farm families.

The specific objectives of the study

1. To Study the socio-economic profile of BAIF beneficiary farmers.
2. To analyze the impact of Integrated Farming System on socio-economic status of BAIF beneficiary farmers.
3. To ascertain different farming system/enterprises adopted-under IFS approach by the beneficiary farmers.
4. To elicit opinion of beneficiary farmers about the Integrated Farming System

Scope of integrated farming system

Farming enterprises include crop, livestock, poultry, fish, tree crops plantation crops, forestry sericulture etc. A combination of one or more enterprises with cropping, when carefully chosen, planned and executed, gives greater dividends than single enterprise especially for small and marginal farmers. Farm as a unit is to be considered and planned for effective integration of the enterprises to be combined with crop production activity. The integration of farm enterprises depends on many factors such as

- Soil and climatic features of the selected area
- Availability of the resources, land, labour and capital
- Present level of utilization of resources
- Returns from existing farming system
- Economics of proposed integrated farming system
- Managerial skill of the farmer

Limitations of the study

The present study has been conducted by the researcher who had limited time and other resources. As a result, the study was confined to 140 respondents in ten villages only. In addition to this the ex-post-facto design of the study left scope for bias in recalling of information by the respondents.

2. REVIEW OF LITERATURE

A brief review of literature is an integral part of any investigation as it not only gives an idea on the work done in the past, but also provides the basis for interpretation and discussion of the findings. This investigation is designed to study the impact of integrated farming system on socio-economic status of BAIF beneficiary farmers. Efforts are made to review the available literature having direct or indirect bearing on present study. For the sake of convenience, the available related reviews are presented under the following headings.

2.1 Farming system- concepts and definitions

2.2 Socio-economic profile of beneficiary farmers

2.3 Role of NGO's in rural development and allied activities

2.4 Impact of programme on socio-economic status and annual income of beneficiary farmers

2.5 Different Farming system followed by respondents

2.6 Opinion of beneficiary farmers about the Integrated Farming System

2.1 Farming system- concepts and definitions

Sharma *et al.* (1991) Farming system refers to the farms where in two or more enterprises are integrated with the farm resources with an objective of achieving fuller utilization of available resources to realize maximum profits and also to stabilize returns. It provides an opportunity to utilize the land, labour, water, manure and fertilizers more efficiently. Farming system approach examines the full range of farm activities closely related to one another by the common use of farmers land, labour capital and management factors

Anonymous (1992) Farming is the process of harnessing the solar energy in the form of economic plant and animal products, and systems implies a set of inter-related practices/processes organized into a functional entity. Thus farming system designates a set of agricultural activities organized into functional units to profitably harness solar energy maintaining desirable level of biological diversity and ecological stability.

Anonymous (1992) Farming system has been further defined as a complex interrelated matrix of soils, plants, animals, implements, power, labour, capital and other inputs controlled in part by farm family and influenced by social forces that, operate at many levels. It is an unique and reasonably stable arrangement of family enterprises that, the household manages according to its physical, biological, economic and socio-cultural environment in accordance with household goal, preference and resources

Swaminathan (1996) lists the principle components of intensive integrated farming systems (IIFS) as seven pillars that, include soil health care, water harvesting and management, crop and pest management, energy management, post-harvest management, choice of crops, farm animals and other components of the farming and information, skill, organization and management empowerment.

Radder (1997) views farming system approach as one of the approaches where in risk in dealing with single component can be through effective recycling.

Basavaraj (1999) viewed that, the farming system also refers to the farm as an entity of inter-dependent enterprises carried out on the farm. The farming system conceptually is a set of elements or components that, are inter-related which interact among themselves. At the centre of interaction is the farmer exercising his control and choice regarding the type of activities

Rangasamy (1999) viewed that, the concept of farming systems has got more relevance in the present day farming to reap better harvests in the long by maintaining a productive resource base on a holistic approach. The IFS approach introduces a change in the farming techniques for maximum production in the cropping pattern and takes care of optimal utilization of resources. The farm wastes are better recycled for productive purposes. A judicious mix of agricultural enterprises like dairying, poultry, mushroom, piggery, fishery etc.

suited to the local agro-climatic situations and socio-economic status of farmer would bring in prosperity in the farming

Itnal *et al.* (1999) stated that, “farming system” is a resource management strategy to achieve economic and sustained agricultural production to meet diverse requirements of the farm household while preserving the resource base and maintaining high environmental quality

Hosmani (1999) stated that, farming system takes into account the interactions between the sub systems within a whole farm setting and thus designed to address farmers and society needs and goals. The whole farm is viewed as a system encompassing interacting sub-systems. No potential enterprise is considered in isolation. It looks at the farm family household as a system of natural and human components.

2.2 Socio-economic profile of beneficiary farmers

Age

Reddy and Ratnakar (1993) revealed that, the maximum number of mango growers (56.00 %) were in the young age group followed by middle age group (34.00 %) and old age group (10.00 %).

Patil *et al.* (2000) found that, the most of the tribal farmers were in age of group of 35-45 years.

Murugan and Dharmalingam (2000) in the study conducted at Tamil Nadu reported that, the age group of members lies between 21 and 60 years.

Madhavareddy (2001) in the study on people’s participation in watershed Development programme implemented by government and non government organization indicated that, higher per cent of farmers (38.30%) of government organization watershed belong to young age category compared to (23.30%) of farmers belonging to old age group.

Shashidhar (2003) revealed that, majority of the respondents fall under middle age (48.33%) category followed by young age (31.66%) and old age (20.00%) groups.

Raghunandan (2004) in his study on knowledge and adoption level of soil and water conservation practices by farmers in Northern Karnataka reported that, the respondents belonged to the middle age group (45%), followed by old aged (36.25%) and young age group (18.75%),

Chandra Charan (2005) in his study on profile of Sujala watershed project beneficiary farmers revealed that, majority (46%) of respondents were middle age.

Education

Patil (2000) observed that, 36.67 per cent banana growers were educated up to middle school followed by 25.00 per cent of the banana growers were educated up to high school, while only 05.83 per cent banana growers were illiterate

Basavarajaiah (2001) reported that, education status among the farm families of Mahaboobnagar district was 74.17%, primary school (11.67%), middle school (8.33%), high school (4.17%) and college education (4.17%).

Sridhar (2002) in his study found that, the respondents were educated up to middle school (26.67%).

Moulasab (2004) in his study on mango growers in North Karnataka indicated that, more than 23.00 per cent of the respondents were educated up to primary school followed by higher secondary school (19.16%) and 14.16 per cent of the respondents were illiterates

Raghunandan (2004) revealed that, majority (73.75%) of the respondents are literates of which 22.50 per cent studied up to primary school. 20.00 per cent studied middle school, 15.00 per cent respondents up to high school, 11.25 per cent of respondents up to pre-university, whereas, 5 per cent respondents had graduation, whereas, 23.28 per cent of the respondents were illiterate.

Ninga Reddy (2005) reported that, 30 per cent of the respondents had education up to high school, followed by middle school 28 per cent and primary school 27.33 percent. Nearly 12 per cent of them were illiterates, while a meager 4 per cent of them had education up to college and degree programme.

Chandra Charan (2005) in his study revealed that, the respondents were educated up to high school(28%), followed by up to middle school(27.33%), illiterate(10.67%).

Land holding

Madhavareddy (2001) in the study on people's participation in watershed development programme implemented by government and non- government organization indicated that, 35 per cent of the respondents were marginal farmers, 26.60 per cent were small farmers and 21.80 per cent were medium farmers.

Natikar (2001) in his study reported that, majority of the subscriber (63%) farmers belonged to big farmers category with land holding of more than 25 acres, whereas 21, 11 and 4.4 per cent belong to medium, semi-medium and small farmers category, in respect of their land holding.

Nagaraj (2002) in his study found that, majority of the respondents belonged to medium land holding (48%) followed by semi-medium land holding category (30%).

Ninga Reddy (2005) in the study on knowledge, extent of participation and benefits derived by participant farmers of the watershed development programme reported that, comparatively more number of farmers 64 per cent belonged to semi medium land holding category, followed by 22 per cent in medium category, whereas 10.67 per cent of them had small land holding and a meager 3.33 per cent of them belonged to big land holding category.

Chandra Charan (2005) in his study on profile of Sujala watershed project beneficiary farmers found that, majority (37.33%)of the respondents had land holding up to 5 acres and 34.67 per cent of the respondents had land holding above 10 acres.

Dolli (2006) in his study on sustainability of natural resources management in watershed development project revealed that, majority of respondents belonged to large land holding (7.85 acres).

Parthasarathy (1991) reported that, the diversification of agriculture had more relevance in India owing: 25 per cent of the area by five per cent of household and 50 per cent area by five per cent of household and 50 per cent area by just seven to eight per cent of households.

Farming experience

Sakharkar (1995) in his study on soybean reported that, majority of the respondents (67.00%) were cultivating soybean from the last five to eight year's. 15.00 per cent had 4 years and 18.00 per cent of the respondents had more than 8 years of experience in cultivation of soybean.

Lakshminarayan (1997) reported that, about 34.00 per cent of the farmers had low farming experience while 32.50 per cent and 33.50 per cent farmers had medium and more experience, respectively

Sawant (1999) conducted a study on effectiveness of different mode of presentation of information on mushroom cultivation in Maharashtra on farmers and reported that, 78 per cent of the respondents belonged to the group which had farming experience between three to fifteen years.

Jadhav (2000) reported that, 61.68 per cent had medium farming experience while 19.66 per cent of each of them was noticed in low and high farming experience, respectively. The average farming experience of the respondents was 32 years.

Natikar (2001) in his study found that, majority of the respondents had medium farming experience (48.00%) followed by high (45.00%) and low (7.00%) farming experience, respectively.

Vinay Kumar (2005) in his study reported that, 53.33 per cent of the respondents belonged to low experience category followed by medium (45.00%) and high (1.67%) farming experience

Thiranjangowda (2005) observed that, 40.62 per cent of the respondents belonged to high experience category while, 35.93 per cent and 23.45 per of the respondents belonged to medium and low experience category, respectively.

Source of information

Wagdhare *et al.* (1998) reported that, village extension workers of training and visit systems were the top most credible source and information as perceived by the small farmers of the Maharashtra, followed by neighbours /friends, progressive farmers and TV.

Kumar (1998) in his study on knowledge, adoption and economic performances of banana growers, revealed that, a major proportion 50 per cent of the banana growers had consulted neighbours and friends to get information regarding banana cultivation

Jyothi (2000) reported that, input dealers were the most frequently consulted information sources followed by progressive farmer, TV, Extension personnel of private organization, friends, radio and Assistant Agriculture Officers

Sonawane *et al.* (2001) conducted a study on utilization of communication sources by the farmers for seeking farm information and revealed that, among the personal localite sources friends (90.62%) were the major source of information for the farmers followed by neighbourers (76.56%), relatives (60.15%) and progressive farmers (60.15%), whereas, among the personal cosmopolite sources agricultural assistant (96.87%) was the main source of information followed by university scientists (53.90%), agricultural officer (25.78%) and subject matter specialists (21.87%). Out of several sources of information used by the ornamental fish farmers, fisheries extension worker found to be more credible, followed by friends and neighbours. Fisheries population, Agriculture Assistants, progressive farmers and television as reported by Rushidi (1995) and Kumar (1998)

Mass media participation

Gupta (1999) reported that, all the respondents possessed radio, while 86.60 per cent of them possessed television sets and 72.00 per cent were of them regular listeners of agricultural programmes and 64.67 per cent listen other programmes. While 48 per cent and 41 per cent of them were occasionally viewing agricultural and general programmes, respectively on television.

Dhamodaran and Vasanthkumar (2001) noticed that, about half (53.33%) of the respondents had medium level of mass media exposure followed by (40.00%) of the respondents with high level of mass media exposure.

Vedamurthy (2002) in his study on arecanut growers of Shimoga district of Karnataka state observed that, relatively more number of growers (48.00%) were medium mass media users, while (37.00%) had high mass media users and (27.33%) were of low mass media users.

Shashidhara (2003) in his study reported that, 41.11 per cent of the respondents belonged to medium level of mass media participation, followed by low level 35.56 per cent of mass media participation, whereas 23.33 per cent of respondents were noticed in high mass media participation.

Venkataramalu (2003) indicated that, 22.50 and 74.17 per cent of the respondents possessed radio and television respectively. Among them 10 and 4.17 per cent of them regularly listeners of news and entertainment farm radio, 55.83 and 26 per cent of them were regular viewers of news and advertisement from television. Further, it was reported that, 41.67 and 28.33 per cent of the respondents regularly read news paper and success stories of farm magazines, respectively.

Sunil Kumar (2004) revealed that, 59.17 per cent of the respondents were occasionally listening agricultural programmes in radio, whereas 30.00 per cent of them viewed agricultural programmes in television occasionally and 70.83 and 85.00 per cent of the respondents never used to read the news papers and farm magazines, respectively.

Moulasab (2004) conducted study on mango growers of North Karnataka and found that, 74.17 per cent of the respondents are subscribers of television followed by 32.50 and 6.67 per cent of the respondents possess farm magazines and news papers, respectively. Among these, 43.33 per cent of the respondents are occasional viewers of television

Ninga Reddy (2005) in his study reported that, 80 per cent of the resp possessed radio and 54 per cent television, while 40.61 per cent of them subscribed newspaper. Further, in case of radio it is reported that, 22 per cent of them listened to agricultural programme regularly, in case of television 25.34 per cent of respondent farmers viewed the agricultural programme regularly.

Muni Kishore (2006) in his study on beneficiaries' attitude and project facilitation services of Sujala watershed project reported that, 70.80 per cent of the farmers possessed radio. While 35 per cent and 18.33 per cent of the farmer's regularly listened general and agricultural programmes, respectively. In case of television 44.16percent of farmers possessed television and 65 per cent and 17.50 per cent regularly viewed general and agricultural programmes respectively.

Extension participation

Saravanakumar (1996) conducted a study on mango growers in Krishnagiri taluka of Dharmapuri district in Tamil Nadu and observed that, majority of the respondents never participated in various extension activities namely demonstration (83.34%), training programmes (70.83%) and discussion meeting (67.50%). About (68.33 %) and (54.17%) of the mango growers participated occasionally in 'field day' and 'tour', respectively.

Vijayakumar (1997) observed that, majority of the rose growers participated in extension activities like field days (31.00%) and Krishimela (42.33%). Most of the farmers never participated in group discussion meetings and training programmes.

Angadi (1999) in his study on pomegranate growers in Bagalkot district of Karnataka reported that, majority of the respondents had not participated in various extension activities (98.76%), group meetings (75.23%) and training programmes (72.50%). Only 43.75 and 38.13 per cent of the respondents participated regularly in 'method demonstration' and 'Krishimela' respectively. Sunil Kumar (2004) revealed that, nearly 23.00 per cent of respondents participated regularly in agricultural exhibition followed by 20.83 per cent in demonstrations. Majority of them never attended in activities like training (66.67%), educational tour (94.17%) and field visits (92.05%).

Shashidhara (2004) conducted a study on drip irrigation farmers of Bijapur district and revealed that, 45.83 per cent of the respondents participated in group meetings followed by exhibition (41.66%) and 18.33 per cent of the respondents participated in Krishimela.

Economic motivation

Srinivasareddy (1995) conducted a study in Kolar district of Karnataka state and reported that, 40.00 per cent of the mango growers had high level of economic motivation followed by medium (34.0%) and low (26.0%) economic motivation, respectively

Sawant (1999) in his study reported that, 78 per cent of the respondent belonged to medium economic category.

Siddappa (1999) in his study reported that, majority of the pomegranate growers had medium level of economic motivation (50.63%) whereas, 28.75 and 20.68 per cent of the respondents belonged to high and low economic motivation categories respectively.

Barman and Gogoi (2000) in his study found that, majority of farmer belonged to medium economic motivation category.

Bheemappa (2001) reported that, majority of farmers belong to medium level economic motivation category.

Natikar (2001) in his study on attitude and use of farm journals by the subscriber farmers and their profile indicated that, the subscriber farmers had medium economic motivation (65%) followed by high (18.75%) and low (16.25%) economic motivation.

Deepak (2003) reported in the study that, majority *i.e.,* 54.67 and 52 per cent of non-beneficiaries and beneficiaries of WYTEP respectively belonged to medium economic motivation category respectively.

Sandesh (2004) in his study reported that, majority (51.67%) of the respondents belonged to medium level of economic motivation. Whereas, 28.33 per cent and 20.00 per cent of the respondents belonged to high and low level of economic motivation categories, respectively.

Innovativeness

Hareesha (1994) found that, 45.83 per cent of the respondents had high innovativeness while, 37.5 per cent had low innovativeness.

Raghupathi (1994) reported that, 42.50 per cent of command area farmers were in the medium innovative proneness category, whereas only 15.00 per cent were in low innovativeness category.

Reddy (1995) revealed that, majority (62.00%) of the farmers had medium innovativeness, 20 per cent had high and 18 per cent had low innovativeness.

Barman and Gogoi (2000) in his study found that, majority of farmers belonged to medium level innovativeness category.

Natikar (2001) reported that, the subscriber farmers belonged to medium (73.75%) innovativeness category followed by low (15.63%) and high (10.62%).

Shashidhar (2004) reported that, higher percentage (47.50%0 of the respondents were in medium innovativeness category followed by low (31.66%) and high (20.83%) innovativeness category

Risk orientation

Saravanakumar (1996) found that, the majority (70.00%) of the mango growers of Dharmapuri district were in the medium scientific orientation category followed by low (15.83%) and high (14.17%) category

Gupta (1999) observed that, majority (64.00%) of respondents were average risk bearers followed by low (24.67%) and high (11.33%) risk bearers.

Meeran and Jayaseelan (1999) found that, about three fourth (72.00%) of the shrimp farmers were found to have high level of risk orientation followed by medium (26.00%) and low level (26.00%) of risk orientation.

.Natikar (2001) in his study indicated that, the subscriber farmers belonged to high risk orientation category (67.5%) followed by medium risk orientation (16.87%) and low risk orientation (15.63%) categories.

Madhavareddy (2001) indicated that, more than two-third of NGO beneficiaries had low risk orientation (66.7%), high (23.3%) and medium (10%) belong to risk orientation categories respectively.

Ninga Reddy (2005) reported that, 56 per cent belonged to medium risk orientation category followed by high 28 per cent and low 19.33 per cent risk orientation categories respectively.

Organizational participation

Thangavel *et al.* (1996) found that, 38 per cent of the respondents in dry and nearly 24 per cent in wet area showed medium level of organizational participation, 34 and 42 per cent of the respondents found in high level of organizational participation in both area and rest had low level of organizational participation.

Saikrishna (1998) conducted a study in Raichur district on Andhra migrant farmers reported that, six per cent of the respondents were members of milk cooperative society, only 1.33 per cent of farmers were office bearers. Only 3.3 per cent of farmers were the members of

Village Panchayat and no one was its office bearer and two per cent of migrant farmers were members of youth club and cooperative bank.

Meeran *et al.* (1999) found that, 78 per cent of the respondents were found to have low level of organizational participation. Agricultural credit societies, local shrimp farmers association and caste association were the some of important organizations in which the respondents participated.

Siddappa (1999) found that, 6.87 per cent and 6.25 per cent of the pomegranate growers were members of fruits growers association and youth club respectively. Only 4.37 per cent and 3.75 per cent of the respondents were the members of taluk panchayat and gram panchayat, respectively.

Sandesh (2004) found that, 39.17 per cent of the respondents were members co-operative societies only 3.3 per cent of the respondents were members of taluka panchayat and 0.83 per cent are members of zilla panchayata, among these 57.50 per cent of the respondents' regularly participating in cooperative societies.

Srinivas Reddy (1995) in his study reported that, more than half number of the mango growers (57.0 per cent) had medium level of social-participation followed by low (33.0 per cent) and high (10.0 per cent) level of social participation. .

Saravanakumar (1996) in his study revealed that, 79.17 per cent and 78.33 per cent of the mango growers were members of co-operative milk society and district co-op bank. While, only 9.17 per cent of the mango growers were members of youth club and farmers discussion group.

2.3 Role of NGO's in rural development programme and allied activities

Esakky (1990) studied on impact of IRDP on eradication of poverty among weaker sections revealed that, the animal husbandry schemes generated additional employment to the tune of 90.06 per cent among beneficiaries. So, also the family income of the beneficiaries was enhanced and as a result of it, out of 205 eligible beneficiaries of the sample, 169 families (82.44%) crossed the poverty line.

Molly (1990) found that there is lionsshare of NGOs programmes in the selected organizations related to the provision of factory type employment such as ready made garments, khadi and village industries, candle sticks, match box, carpentry, foot wear etc. The major production schemes especially on household basis which occupied 24 per cent of total schemes were animal husbandry, poultry, sericulture, fodder cultivation, kitchen garden and others. The major schemes for facilities like housing, drinking water, sanitation, health care, biogas plants, smokeless Chula, crèche, hotels, marketing etc. were 26 per cent.

Jyotimani and Sithalakshmi (1995) conducted study on income generation under DWCRA programme in Periyur district. The results indicated that, the emerging trend that, rural women at the subsistence level have high potentialities as economic providers for their households and could become a viable and independent entity.

Veluswamy and Manoharan (1998) in a study on impact on non-government organization in rural development perceived that, beneficiaries were found to have increased in outside contact and knowledge about various development programmes after their participation in NGO programme. In the areas where development programme are implemented is the chance for more savings and clearing debts, so as to have a follow up programme "small savings" may be encouraged.

Sahu (2000) in the study on voluntary organizations for rural development opined that, voluntary organizations have a great role to play in the socio-economic transmission of rural people. They could give a helping hand to the government and other agencies concerned with rural development. The success of these organizations depends on the financial assistance provided by the government and other funding agencies.

Ito Kasumi *et al.* (2001) in a study on NGO involvement in bilateral aid projects for community forestry in Nepal revealed that, grass root activities to support community forestry

extension in Nepal have implemented by NGO's and they are becoming a fundamental organization for CF. Additional investigation of the influence and impact of NGO's involvement to develop efficient methods of such involvement in community forestry aid projects is essential

Reddy (2001) found that, improvements in the household income and employment are statistically significant in all the sample villages with the total livelihoods assets (financial capital), while fuel wood and water availability was not found significant in all the villages except Mallapuram (natural capital); human capital indicators have improved significantly whereas social capital has not changed significantly due to watershed intervention.

Satyanarayana (2002) in his study on evaluation of watershed programme in Tumkur district reported that, majority of the beneficiaries received higher income and all of them were employed after the development programme

De Haan (2002) found an inverse relationship between land and livestock ownership and migration, suggesting that, it is the poorer that, migrate more, although migration is seldom from households that, did not own any land at all. Migrants from two sites in Bangladesh were less likely to be from landless households and on an average owned more land than households without migrants, although the differences were small and varied according to locality, and international migrants in particular were from better off households in terms of landholdings.

Rama Rao *et al.* (2004) in his study on a comparative analysis of performance of watershed development programme observed that, the watershed structures were more likely to be maintained when more ground water recharge was created and in watersheds implemented by NGOs.

2.4 Impact of programme on socio-economic status and annual income of the beneficiary farmers

Socio-economic status

In an evaluation study of dry land development programme in Bijapur, Karnataka state by Narasimha Reddy (1989) considered the changes in the crop yield, output, area, land use, cropping pattern, income and employment of the people living in the watershed area as an impact measurement parameters

In an impact study on dry land agriculture technology in Jogipet taluka of Medak district, Andra Pradesh, Rao (1991), considered the impact indicators as 1) changes in cropped area, cropping pattern ,farm asset structure and work force of the respondents 2) awareness and attitude of respondents towards improved dry land technology 3) change in the knowledge and adoption behaviour of farmers towards various components of improved dry land technology and 4) changes in terms of yield, income and employment between pre-project and post-project periods in the project area.

Thiruvakkavarn *et al.* (1991) while explaining the impact of operation flood programme i.e., changes in the income and employment of the most vulnerable sections of the rural milk producers in North Arcot district in Tamil Nadu.

Balbir kumar and Dhawan (1992) analyzed the influence of land development work on a range of socio-economic indicators as recommended in the World Bank Publication (1981) by using ex-ante (1980) and ex-post evaluation technique. These indicators were classified into three groups:1)output indicators consisted seasonal crops, tree crops, livestock and animal products, 2)economic indicators consisted farm and off-farm income input usage rates and 3)quality of life including family size, workforce, depending ratio, man land ratio, shelter, access to essential amenities, food consumption health, education, dress etc. specifically, it was examined on farm earnings as well as non-farm earnings along with the consumption pattern of the after the completion of programme.

The study conducted at a selection location close to agricultural research station, Mahallupallama, Srilanka reveals that, inclusion of trees in a random manner utilized approximately 10 per cent of land unavailable for crop production. In terms of yield the plots planted with trees in a random manner produced greater yields than plots without tree avenues

although productivity of land was greater in the latter. The control which had no trees conforming to traditional systems produced the lowest yields (Sangakkara and Bandana, 1994)

Ingle (1994) conducted on evaluation of Manoli Watershed project in Maharastra and reported that, the indicators used for evaluation included the changes in terms of farm dry land development i.e., agro forestry and pasture, horticulture, cropping pattern, cropping intensity, knowledge, adoption and skill required.

Sridhar (2002) in his study on watershed programme found that, their was significant increase in farm power, material possession and social participation after implementation of watershed project.

Annual Income

Rama Mohan Rao (1996) while studying the impact of watershed development in Chinnateur watershed of Kurnool district in Andhra Pradesh income revealed that, the increase in income was higher in case of on small and medium farmers compare to marginal and large farmers.

Chandregowda and Jayaramaiah (1990) in a study on impact of watershed development programme on socio-economic status, land productivity and income o small and marginal farmers revealed that, average annual gross income increased I case of small farmers (Rs 11,970) and marginal farmers (Rs 3,420).

Arun Kumar (1998) in his case study on Kuthangere micro watershed I Karnataka found that, the total income of watershed farmer was Rs 27,411.25 was higher by Rs 10183.46 compared to that, of the non-watershed farmer Rs 17,227.79.

Nirmala (2003) in her study on impact of watershed development programm on socio-economic dimensions of beneficiaries revealed that, the household income generated from the watershed area Rs 30655.56 was found to be relatively higher than that, of non-watershed area Rs 23171.47. There was increase in (32.29%).

Verma *et al.* (2004) in the study on national watershed development programme that, net income by family labour and from farm business was higher o all size groups in NWDPRA area as compared to non-NWDPRA area.

Ninga Reddy (2005) in the study on knowledge, extent of participation an benefits derived by participant farmers of the watershed development programme reported that, majority of the respondents belonged to income group of Rs 11,001 t Rs 22,000 per annum (60%) followed by Rs 22,001 to 33,000 (20%) and Rs 11,00 t Rs 33,000 (10%).

Chandra Charan (2005) in his study on profile of Sujala watershed project beneficiary farmers revealed that, 18 per cent of the respondent families had annual income above Rs 33,000, 48 per cent of respondent families had annual income between Rs 11,001 to Rs 22,000.

Dasaratharamaiah *et al.* (2006) reported that, 10.0 per cent of beneficiaries ha income between Rs.7,201 and above, 20.67 per cent had income between Rs. 4,801 t 7,200 and 31.33 per cent have income Rs. 3,601 to 4,800 and 38.00 per cent have income below Rs.3,600 per annum after implementation of DWCRA. And it wa found that, there are no persons without any income.

2.5 Different farming systems followed by respondents

Thorne and Galgalikar (1985) stated that, the integration of crop farming with high yielding milk animals increased income and employment on small farmers. It has a positive effect on all farmers with different size holdings. It was observed that, in small farms up to 2 ha maximum returns can be obtained with one buffalo and two cows, in medium and large farms (4 ha), 4 milch cattle (2 buffaloes+2 cows) were found optimum to maximize the net returns

Christopher Lourduraj *et al.* (1992) reported that, cultivated fodders show a considerable degree of shade tolerance and compatibility as intercrop in coconut. The cereal fodders, under moderate shade, grow lankey and produce poor green matter. However, the fodder legumes tend to produce dense foliage and have higher green matter production.

Sharma and Gangwar (1994) opined that, a system based approach was essential for productive cropping intensity to meet the new challenges. It was also reported that, the cropping intensity in the country had increased over the years and was likely to increase up to 140 per cent by the turn of the century from the present 127 per cent.

Devasenapathy *et al.* (1995) opined that, the integrated farming with groundnut-black gram-maize and groundnut-gingelly-ragi with integration of other enterprises such as dairy, fish culture, poultry and rabbit rearing resulted in higher net income, benefit-cost ratio and employment opportunities as compared to conventional cropping system (CCS)

Prasad (1996) studied the cropping pattern systems and sustainability of agriculture. Balanced fertilization, integrated plant nutrient system, insitu nutrient cycling and changing crops in one or both seasons in a cropping system were considered as the activities leading to sustainability. It was also observed that, rice-wheat rotation, substitution of wheat by rape seed-mustard, gram and lentils had been found promising.

Randall *et al.* (1996) found that, legumes incorporated into established grass (*Panicum virgatum* L.) could provide symbiotic nitrogen, improved herbage quality and did not affect grass stem density.

Singh *et al.* (1997) inferred that, introduction of suitable mixed farming system comprising crop production and animal component should be considered optimum for extra family labour employment throughout the year.

Chittapur (1999) stated that, comprising is a non-polluting and safe method for disposal and recycling of organic wastes by bio-conversion to nutrient sources.

Ramamurthy (1999) listed the advantages of overlapping cropping system of forage crops, taking advantage of growth periods of different species for uniform supply of green fodder throughout the year, availability of green forage during dormancy period of hybrid Napier, efficient utilization of inter-row spaces, enrichment of soil fertility and fodder quality and easy establishment of hybrid Napier without much care and cost.

Ghosh *et al.* (2001) conducted study on socio- economic profile and cropping pattern in canal command area in Khunda district of Orissa and found that, rice- rice was the cropping sequence in 95 per cent of the command area if water released during *rabi* season. The cropping intensity was 180 per cent. If the water is not released during *rabi* then the cropping intensity will be 120 per cent with rice- black gram, rice-green gram and rice-horse gram sequence under residual moisture.

Hadole (2005) reported that, majority (78 %) of respondents were growing only *kharif* crops and 16 per cent were growing both *kharif* and *rabi* crops, whereas 4 per cent had grown both *kharif* and summer crops and only 2 per cent of respondents were practicing *kharif*, *rabi* and summer crops, however rice was the major crop grown by about 88 per cent of respondents

2.6 Opinion of beneficiary farmers about the Integrated Farming System

Nagendranath (1980) found that, majority of the farmers expressed the need for low interest credit, supply of more inputs. A small percentage (11.67%) of farmers expressed the need for availability of technical help in greater degree.

Ingle and Wayazade(1989) conducted a study in Akola district of Maharastra reported that, beneficiaries of the watershed programme have to be motivated to adopt all the recommended practices and support the economic base of the farmers by introducing subsidiary occupations like dairy and poultry.

Osmeoba (1990) reported that, to enhance agro forestry implementation, government should educate the rural people, train the extension workers and provide facilities to promote effective campaigns for mutual integration of tree into the farming system.

Elz (1990) reported that, due to intangible benefits from agro forestry practices, not only due to the economic benefits and improvement in the benefit cost and risk ratio but also due to their need for trees such as Eucalyptus, silver oak and Neem.

Tewari *et al.* (1990) reported that, the credit facilities should be extended particularly to small farmers who may wish to adopt a more productive, but expensive agro forestry technology.

Sumitra (1991) reported that, the better intensification and implementation of agro forestry required the formation and promotion of farmer's organizations, the provision of fertilizers, pesticides and seed of improved varieties of food crops, the improvement in credit facilities and the promotion of soil and water conservation measures.

Sen *et al.* (1993) reported that, majority of the respondents 65 per cent in Tamil Nadu expressed their views in favour of covering the land under plantation with tree species.

Raghunandan (2004) reported that, 58 per cent of the respondents expressed the need for more technical information and guidance by the concerned authority and 40.00 per cent sought financial assistance for maintenance of soil and water conservation work. Whereas the suggestion of enhancing the subsidy amount, providing bank loan with lesser rate of interest were expressed by 25 per cent of respondents

3. METHODOLOGY

The study was conducted during the year 2007-08 in Dharwad district of Karnataka state. The main focus of the investigation was to study the impact of integrated farming system on socio-economic status of BAIF beneficiary farmers. The methodology used in this study is presented under the following headings.

3.1 Research design

3.2 Locale of the study

3.3 Selection of NGO

3.4 Selection of taluks and villages

3.5 Selection of respondents

3.6 Operationalisation and measurement of variables

3.7 Administration of interview schedule

3.8 Statistical tools used in the study

3.1 Research design

The research design adopted for this study was of ex-post-facto in nature since the phenomenon has already occurred. According to Kerlinger (1973) ex-post facto research, is a systematic empirical inquiry in which the researcher does not have direct control over independent variables, because their manifestation has already occurred or because they are not inherently manipulated.

3.2 Locale of the study

Dharwad district is situated in the north western part of Karnataka surrounded by six districts. The district consists of five taluks. Dharwad district is situated between 15°36' and 15°06' north latitude and between 74°57' and 74°54' east longitude. The district comes under northern dry zone as well as northern transitional zone. Geographical area of Dharwad district is 4,260 square kms. The population of Dharwad district is 16,04,253 comprising 8, 23,204 males and 7, 81,049 females. The literacy rate of male is 80.8 per cent and that of female is 61.9 per cent. The total literacy rate of the district is 71.6 per cent. There are about 3000 non-governmental organizations working in the Karnataka state for the welfare of both rural and urban masses. With the vast experience and dedication NGOs formed their own federation known as Federation of Voluntary Organizations for Rural Development. In Karnataka there are 150 NGOs with certain standards and enough resources and found themselves registered under FEVORD-K. Out of these 23 NGOs arelocated in Dharwad district. The important crops grown in the area are cotton, jowar, maize, chilli, groundnut, sunflower, safflower, wheat and onion. Among the five taluks in Dharwad district, Hubli and Kalghatgi taluks were purposively selected for the study, because BAIF implemented Integrated Farming System approach in these two taluks.

3.3 Selection of the NGO

Bharatiya Agro-Industries Foundation (BAIF) an NGO which has under taken developmental programmes in Dharwad district was purposively selected, as it is supporting to farmers through different developmental programmes. It has assisted more than 2500 poor beneficiary families in Dharwad district. Dr. Manibhai Desai who was assigned the responsibility of management, worked closely with the villagers to tackle their problems. He established the Bharatiya Agro Industries of Foundation (BAIF), a non-profit, Public Charitable Trust in 1967 to replicate his experiences in rural development. BAIF has now been renamed as BAIF Development Research Foundation.

3.4 Selection of taluks and villages

BAIF has implemented livelihood improvement activities in two taluks of Dharwad district namely Hubli and Kalghatgi. Hence, these taluks were purposively selected for the study. The geographical area of Hubli taluk is 207 square kms. The population of the Hubli

taluk is 1,28,380 comprising 66,000 males and 62,380 females. The literacy rate of the taluk is 63 per cent. The important crops grown in Hubli taluka are onion, chilli, potato, soybean, *rabi* jowar, wheat, green gram and black gram. Kalghatgi taluk: The geographical area of Kalghatgi taluk is 201 square kms. The population of the taluk is 1,37,016 comprising 70,780 males and 66,236 females. The literacy rate of the taluk is 58.3 per cent. The important crops grown in Kalghatgi taluk are paddy, cotton, soybean, *rabi* jowar, pulses, chilli, hybrid jowar, plantation crops like mango and sapota.

Selection of villages

There are five taluks in Dharwad district, out of which BAIF has selected Hubli and Kalghatgi taluks for the implementation of developmental programmes. Five villages selected from each of these taluks based on the criteria of maximum number of beneficiaries under BAIF programmes. Five villages from each taluk were selected. Thus, Ten villages were purposively selected namely Polikoppa, Channapura, Tiramalakoppa, Kurudikeri, Kamplikoppa, from Hubli taluka and Surshettikoppa , Bogenagarakoppa, Kamadhenu, Gangigatti, Sutagatti, from Kalghatgi taluka.

3.5 Selection of the respondents

Two taluks namely Hubli and Khalghatgi were considered. From each taluk, five villages and from each village 14 respondents were randomly selected. Consequently, 140 total respondents were randomly selected to spread over ten villages belonging to two selected taluks constitute the sample for the study.

Name of the taluk	Villages selected	No of respondents
Hubli	Polikoppa	14
	Channapura	14
	Tiramalakoppa	14
	Kurudikeri	14
	kamplikoppa	14
Kalghatgi	Surshettikoppa	14
	Sutagatti	14
	Bogenagarakoppa	14
	Kamadhenu	14
	Gangigatti	14
	Total	140

3.6 Operationalisation and measurement of variables

Dependent variables

The dependent variables selected for studies were; socio- economic status, and farming system. The benchmark data was obtained from the secondary data available at the office of the BAIF.

Socio- Economic status

The socio- economic status of farmers was measured by using the scale developed by Trivedi (1963) and as followed by Chidannada (1996). Since the land holdings of respondents were of different kind's *viz*., dry, wet, garden land. They were all converted into one common unit as standard acres. This conversion was done as per the Karnataka land reforms act 38 of 1966- part B, under sec 2(a) 32. The cumulative total of the sub-items scores formed the socio-economic status score for each respondent.

Farming system

Farming system consists of several enterprises like cropping system, horticulture, forestry, dairy, vermiculture, forage crops, piggery, sericulture etc.

In the present study the Farming system was studied by contacting the respondents regarding the enterprises .Frequency and percentages were used for analyzing the data.

Independent variables

Age

The age of the farmer was measured by considering the number of completed years of age at the time of interview. The procedure followed by Channegowda (1977) and as followed by Madhavareddy (2001) was used to quantify this variable. The respondents were classified into three categories

Category	Age (years)
Young	Up to 35
Middle	36 to 50
old	Above 50

Further frequency and percentages were used to present the data

Education

Education was operationally defined as the number of years of education acquired by a respondent. Education was measured by using a scale developed by Trivedi (1963) and as followed by Madhavareddy (2001). The respondents were grouped into following categories.

Category	Scores
Illiterate	0
Can read only	1
Can read and write	2
Primary school	3
Middle school	4
High school	5
Graduate	6
And above	7

Further, frequencies and percentage were used to present data.

Land holding

It refers to the total land acquired by the respondent. The land holdings of the respondents were of different kinds namely wet, dry and garden. Hence, they were converted into standard acres, according to Karnataka land reforms Act 38 of 1996, one acre of garden/wet land was equated to three acres of dry land. The same conversion procedure was followed in the study to calculate the total land holding. The government of Karnataka 1992-93 has prescribed norms for the categorization of land holding and the procedure as followed by Madhavareddy (2001) was made use.

Categories	Size of land	Scores
Marginal farmers	Up to 2.5 ac	1
Small farmers	2.6 ac to 5 ac	2
Medium farmers	5.1 ac to 10 ac	3
Large farmers	Above 10.1 ac	4

Further, frequencies and percentage were used to present the data.

Organizational participation

This refers to the degree or participation or involvement of respondent in formal organizations either as member or as office bearer, including their degree of participation in these organizational activities. This variable was measured by using the procedure outlined by Trivedi (1963) and as followed by Sridhara (2002) with slight modification.

Category	Score
Non membership	1
Membership in one organization	2
Membership in more than one organization	3
Office bearer in one organization	4
Office bearer in more than one organization	5

Degree of participation	Score
Regular	2
Occasional	1
Never	0

The composite score was arrived at by summing up the scores obtained by respondent and were classified into three categories by using on mean and standard deviation as measure of check

Categories	Score
Low	Less than (Mean - 0.425)
Medium	Between (Mean $\pm$ 0.425)
High	More than (Mean + 0.425)

Farming experience

This is a period from which the farmer is actually cultivating land with his own experience. The respondents were categorized based on the procedure followed by Thoke (1999).

Category	Years
High	Above 28 years
Medium	15 – 28 years
Low	10 – 15 years
Very low	Up to 10 years

Mass media participation

It refers to the extent to which the farmer is exposed to different mass media of communication such as news paper, radio, farm magazines and television.

The procedure followed by Trivedi (1963) with little modification was used for measuring mass media participation of the respondents.

The respondents were asked for their ownership or subscription for the sources and the scores were given as follows.

Sl. No.	Source		Owner/ subscriber	Non-owner/ non-subscriber
1	Radio	Agri / others	1	0
2	Television	Agri / others	1	0
3	Newspaper	Agri / others	1	0
4	Farm magazine	Agri / others	1	0

Sl. No.	Activities	Frequency of participation		
		Regular	Occasionally	Never
1	Reading news paper	2	1	0
2	Listening to farm radio programme	2	1	0
3	Reading farm magazines	2	1	0
4	Watching TV programmes relating to agricultural activities	2	1	0

The total score obtained by the respondent on the scale formed the mass media score. Further frequencies and percentages were used for presenting the data.

Information sources consultancy

Sources of information refer to the frequency with which the sources are consulted by the farmers in order to seek information regarding integrated farming system. To find out the extent of consultation of information to each of these sources were fitted in three point continuum that is regularly occasionally and never and the scoring of 2, 1 and 0 followed respectively. It was measured by using the procedure followed by Byrareddy (1971) and as followed by Raghavendra Naik (2007) was used with slight modification. The data has been presented by using in frequency and percentage.

Sl. No.	Source of information	Frequency of use		
		Regular	Occasional	Never
1	Officials of BAIF organization	2	1	0
2	Assistant Director of Agriculture	2	1	0
3	Assistant Horticulture officer	2	1	0
4	Subject matter specialists UAS, Bangalore or Dharwad	2	1	0
5	Private consultants of agriculture	2	1	0
6	Progressive farmers	2	1	0
7	Radio	2	1	0
8	Newspaper	2	1	0
9	Farm magazines	2	1	0
10	Television	2	1	0
11	Others (specify)	2	1	0

Extension participation

It refers to the extent of participation of farmers in different extension activities. This variable was quantified by following the procedure used by Ravikumar (1979) and was followed by Raghavendra Naik (2007) was used with slight modifications. A list of extension activities was prepared and the respondents were asked to indicate their extent of participation in each one of the activities.

Sl. No.	Extension activities	Organized by BAIF	Organized by other agency	Extent of participation		
				Regular	Occasional	Never
1	Group discussion meetings	2	1	2	1	0

2	Trainings	2	1	2	1	0
3	Demonstrations	2	1	2	1	0
4	Agril. Exhibitions	2	1	2	1	0
5	Krishimelas	2	1	2	1	0
6	Field visits	2	1	2	1	0
7	Lecture	2	1	2	1	0
8	Educational tours	2	1	2	1	0
9	Others (specify)	2	1	2	1	0

Economic motivation

It refers to the occupational excellence in terms of profit making and relative value placed on economic ends by a farmer measured by the scale developed by Dasand Sarkar (1970) and as followed by Shashidhara (2006) was used with slight modifications. The scale consisted of seven statements (four positive and three negative). The responses were collected on three point continuum namely.

Category	A	UD	DA
Score for positive statements	3	2	1
Score for negative statements	1	2	3

A – Agree; UD – Undecided; DA - Disagree

The above scoring was used for positive and negative statements. The total score obtained by a respondent on this scale formed the economic motivation score for that respondent Based on the score, the respondents were grouped into 3 categories by using mean and SD as measure of check.

Categories	Score
Low	Less than (Mean - 0.425)
Medium	Between (Mean $\pm$ 0.425)
High	More than (Mean + 0.425)

Innovativeness

Innovativeness is the degree to which an individual is relatively early in adopting the new ideas/practices when compared to other member in the social system. This variable was quantified by using the scale developed by Moulik and Rao (1973) and as followed by Ningareddy (2005) was used. The scale consists of 5 statements. The scoring pattern followed is given below

Category	A	UD	DA
Score for positive statements	3	2	1
Score for negative statements	1	2	3

A – Agree; UD – Undecided; DA - Disagree

The total score obtained by a respondent on this scale formed the innovativeness score for that respondent. Further, based on the score the respondents were grouped into three categories by using mean and standard deviation, as measure of check.

Categories	Score
Low	Less than (Mean - 0.425)
Medium	Between (Mean $\pm$ 0.425)
High	More than (Mean + 0.425)

Risk orientation

Risk orientation was operationalised as the degree of which the farmer was oriented towards risks and uncertainty in accepting new ideas in integrated farming system. Risk orientation scale developed by Supe (1969) and as followed by Chandrashekar (2007) was used with suitable modification

In this study the scale consists of six statements out of which five were positive and one was negative. The respondents were measured on three point continuum as agree, undecided and disagree. The scoring was 3, 2 and 1 respectively for positive statements and 1, 2 and 3 for negative statements. Based on the total score, the respondents were grouped into three categories by using mean, standard deviation, as a measure of check.

3.6 Opinion of beneficiary farmers about the programme

Guidelines were prepared to get the opinions of beneficiaries about the programme. But opinions were obtained through open end questions. The frequency and percentage were calculated for analyzing the opinion of respondents.

3.7 Administration of interview schedule

The data was collected by personal interview method using structured schedule, and the benchmark data was collected from BAIF organization.

3.8 Statistical tools and tests used

The data collected from the respondents were scored, tabulated and analyzed using suitable statistical methods. The statistical methods used in the present study are. Frequency, Percentage Mean, Standard deviation and Wilcoxon matched-pairs signed-ranks test

Wilcoxon matched pairs signed rank test

$$\text{Mean} = \mu_T = \frac{N(N+1)}{4}$$

$$\text{Standard deviation} = \sigma_T = \sqrt{\frac{N(N+1)(2N+1)}{24}}$$

The sample size is >15 that's why the 'Z' test was employed.

$$Z = \frac{T - \mu_T}{\sigma_T} = \frac{T - \frac{N(N+1)}{4}}{\sqrt{\frac{N(N+1)(2N+1)}{24}}}$$

4. RESULTS

Findings of the present investigation on study of impact of integrated farming system on socio-economic status of BAIF beneficiary farmers in Dharwad district are presented under the following headings.

4.1 Personal and socio-economic profile of the beneficiaries

4.2 Impact of Integrated Farming System on socio-economic status and annual income of the beneficiaries

4.3 Different farming systems / enterprises adopted by BAIF beneficiary farmers

4.4 Opinion of beneficiaries about the Integrated Farming System

4.1 Personal and socio-economic profile of the beneficiaries

4.1.1 Age

As it is seen in Table 1 that, majority of the respondents (51.43%) were middle age group, while 27.14 per cent were old age group and 21.43 per cent were of young age group.

4.1.2 Education

The education level of the respondents can be observed from Table 1 that,(34.30%) of the IFS beneficiaries were illiterates, followed by primary school (17.86%), can read only (15.70%), can read and write (11.43%), middle school (10.70%), high school (9.30%) and PUC (0.71%).

4.1.3 Land holding

The data in Table 1 exhibits that, 50.72 per cent of the beneficiaries were small farmers, followed by marginal farmers (25.72%), medium farmers (22.14%) and large farmers (1.42%).

4.1.4 Annual income

It could be observed that, 56.43 per cent of the beneficiaries were belonged to medium income category (Rs. 34,001 – 51,000). Whereas, 17.86, 12.14 and 13.57 per cent of the beneficiaries belonged to semi-medium (Rs. 17,001 – 34,000), high (Rs. >51,000) and low (Rs. 17,000) income category, respectively.

4.1.5 Farming experience

It can be seen from Table 1 that, the majority (33.58%) of the respondents belonged to medium experience category (15 – 28 years), while 31.43 per cent of the respondents had high experience (>28 years). Whereas, 20.71 per cent of respondents had very low experience (<10 years) and 14.28 per cent had low (10 – 15 years) farming experience.

4.1.6 Economic motivation

The results presented in Table 2 indicated the economic motivation of beneficiaries to the individual statements. About 56.43 per cent of the respondents expressed their agreement to the statement that ‘All I want from my farm is to make just a reasonable living for my family’. Followed by 30.00 and 13.57 per cent of the respondents said that they have ‘undecided’ and ‘disagree’ with the statement, respectively.

While, 47.14 per cent of the respondents ‘agreed’ for the statement that ‘In addition to making a reasonable amount of profit, the enjoyment of farming life is also important’. And for the same statement 37.14 and 15.72 per cent of the respondents expressed their ‘undecidedness’ and ‘disagreement’, respectively.

Whereas, 33.57 per cent of the respondents are ready to invest in ‘Integrated farming system practices to the maximum in order to gain large profit’. Further, 44.00 and 26.43 per cent that they are in ‘undecided’ and ‘disagree’, respectively.

Table 1: Socio-economic profile of beneficiary farmers

(n = 140)

Sl. No.	Variable	Category	Frequency	Percentage
1.	Age	Young (upto 35 years)	30	21.43
		Middle (36 – 50 years)	72	51.43
		Old (above 50 years)	38	27.14
2.	Education	Illiterate	48	34.30
		Can read only	22	15.70
		Can read and write	16	11.43
		Primary school	25	17.86
		Middle school	15	10.70
		High school	13	9.30
		PUC	1	0.71
		Graduate	0	0.00
		Graduate and above	0	0.00
3.	Land holding	Marginal farmers (upto 2.5 acres)	36	25.72
		Small farmers (2.6 – 5.0 acres)	71	50.72
		Medium farmers (5.1 – 10 acres)	31	22.14
		Large farmers (>10.1 acres)	2	1.42
4.	Annual income	Low (upto Rs. 17,000)	19	13.57
		Semi-medium (Rs. 17,001 – 34,000)	25	17.86
		Medium (Rs. 34,001 – 51,000)	79	56.43
		High (above Rs. 51,000)	17	12.14
5.	Farming experience	High (>28 years)	44	31.43
		Medium (15 – 28 years)	47	33.58
		Low (10 – 15 years)	20	14.28
		Very low (<10 years)	29	20.71

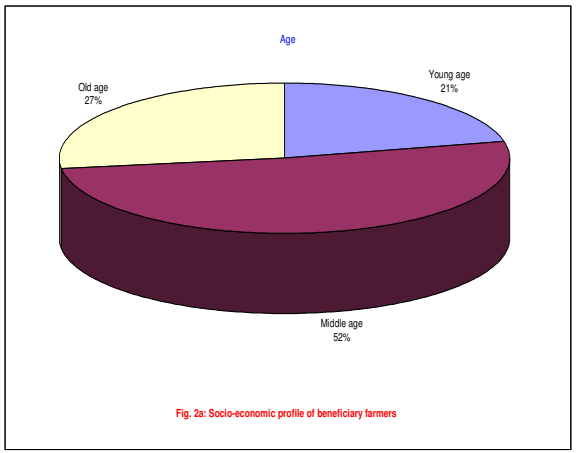


Fig. 2a: Socio-economic profile of beneficiary farmers

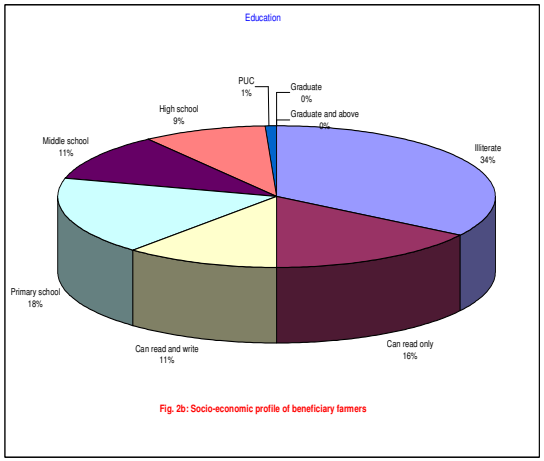


Fig. 2b: Socio-economic profile of beneficiary farmers

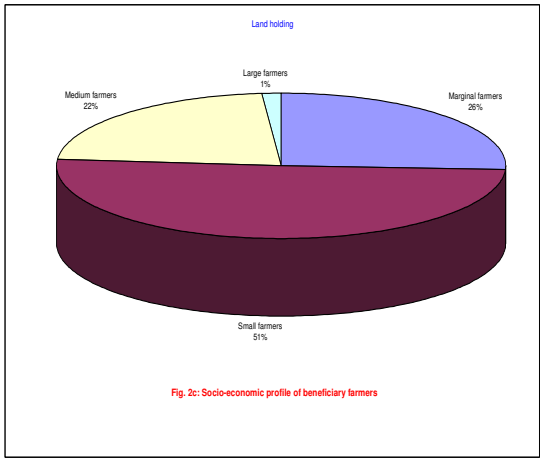


Fig. 2c: Socio-economic profile of beneficiary farmers

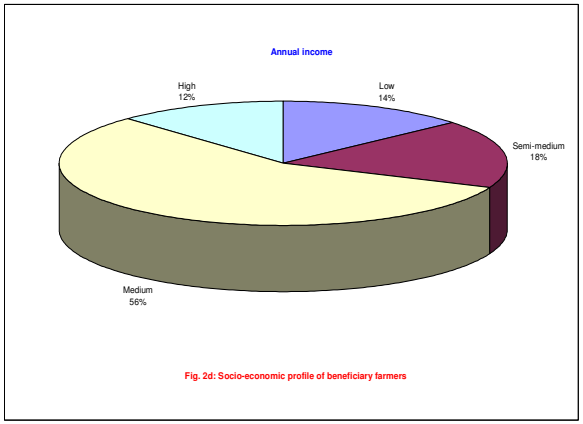


Fig. 2d: Socio-economic profile of beneficiary farmers

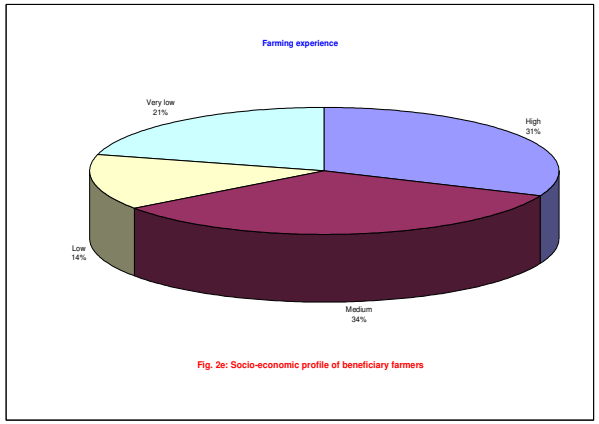


Fig. 2e: Socio-economic profile of beneficiary farmers

Fig. 2: Socio-economic profile of beneficiary farmers

Table 2: Economic motivation of beneficiary farmers

(n = 140)

Sl. No.	Statements	Agree		Undecided		Disagree	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1.	All I want from my farm is to make just a reasonable living for my family.	79	56.43	42	30.00	19	13.57
2.	In addition to making a reasonable amount of profit, the enjoyment of farming life is also important.	66	47.14	52	37.14	22	15.72
3.	I would invest in integrated farming system practices to the maximum in order to gain large profit.	47	33.57	56	40.00	37	26.43
4.	I don't hesitate to borrow any amount of money in order to run the farm properly.	32	22.86	49	35.00	59	42.14
5.	I hate to borrow money in principle even when it is necessary for purchasing new farm implements.	64	45.72	45	32.14	31	22.14
6.	I avoid excessive borrowing of money for investment in developing soil and conservation structure.	80	57.14	36	25.72	24	17.14
7.	My main aim is maximizing profit in farming by following improved IFS practices than continuing old practices.	53	37.86	66	47.14	21	15.00

Table 3: Economic motivation of beneficiary farmers

Variable	Category	Frequency	Percentage
Economic motivation	Low	27	19.29
	Medium	72	51.43
	High	41	29.28

Mean : 16.23
SD : 1.46

Table 4: Risk orientation of beneficiary farmers

(n = 140)

Sl. No.	Statements	Agree		Undecided		Disagree	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1.	A farmer should grow large number of crops to avoid higher risk involved in growing one or two crops.	76	54.29	35	25.00	29	20.71
2.	A farmer should rather take more of chance in making big profits than to be content with a smaller but less risky profits.	58	41.43	51	36.43	31	22.14
3.	A farmer who is willing to take greater risks than the average farmer usually does better financially.	49	35.00	58	41.42	33	23.58
4.	It is good for a farmer to take a risks when he knows his chance of success is high in adopting IFS practices.	42	30.00	57	40.71	41	29.29
5.	It is better for a farmer not to try new farming method unless most others have used them successfully.	30	21.43	52	37.14	58	41.43
6.	Trying of entirely new method in farming by a farmer involves risks but it is worthy.	39	27.86	63	45.00	38	27.14

Table 5: Risk orientation of beneficiary farmers

Variable	Category	Frequency	Percentage
Risk orientation	Low	46	32.86
	Medium	68	48.57
	High	26	18.57

Mean : 14.98
SD : 2.58

About 42.14 per cent of the respondents said ‘disagree’ for the statement that ‘they don’t hesitate to borrow any amount of money in order to run the farm properly’, followed by 35.00 and 22.86 per cent of the respondents said ‘undecided’ and ‘agree’, respectively.

About 45.72 per cent of the respondents ‘agreed’ to the statement that, ‘they hesitate to borrow money in principle even if it is necessary for purchasing new farm implements’, while 32.14 and 22.14 per cent were ‘undecided’ and ‘disagreement’, respectively with the statement.

Majority (57.14%) of the respondents ‘agreed’ to the statement that, ‘they avoid excessive borrowing of money for investment in developing soil and water conservation structure’, followed by 25.72 marking undecided and 17.14 per cent of respondents ‘disagreeing’ for the same statement, respectively.

Further, 37.86 per cent of the respondents ‘agreed’ to the statement that, their ‘main aim is to maximize profit in farming by following improved IFS practices than continuing old practices’. Whereas, 47.14 and 15.00 per cent of them had ‘undecided’ opinion and ‘disagreeable’, respectively for the statement.

It can be observed from Table 3 that 51.43 per cent of the respondents belonged to medium economic motivation category, followed by high (29.28%) and low (19.29%) economic motivation category.

4.1.7 Risk orientation

The data in Table 4 revealed the risk orientation of the IFS beneficiary farmers towards the individual statements. About 54.29 per cent of the farmers ‘agreed’ to the statement of ‘growing of large number of corps mainly helps to avoid higher risk involved in growing one or two crops’, while 25.00 and 20.71 per cent of them have ‘undecided’ and ‘disagreement’ opinion, respectively.

Whereas, 41.43 per cent of the respondents were ‘agreement’ to the statement of ‘a farmer should rather take more of chance in making big profits than to be content with a smaller but less risky profits’. About 36.43 and 22.14 per cent of them had ‘undecided’ and ‘disagreement’ response respectively to the same statement.

While, 35.00 per cent of the beneficiaries have ‘agreed’ to the statement, ‘a farmer who is willing to take greater risks than the average farmer usually does better financially’, whereas 41.42 and 23.58 per cent said ‘undecided’ and ‘disagreement’ with this statement, respectively.

Maximum percentage of respondents (40.71%) had the ‘undecided’ opinion towards the statement, ‘it is good for a farmer to take a risks when he knows his chance of success is high in adopting IFS practices’. Whereas, almost equal percentage of respondents ‘agreed’ and ‘disagreed’ (30.00% and 29.29%), respectively to the statement.

About 21.43 per cent of the respondents expressed their agree ness to the statement of ‘it is better for a farmer not to try new farming methods unless most others have used them successfully’, while 37.14 and 41.43 per cent of the respondents said ‘undecided’ and ‘disagree’ for the same statement, respectively.

Further, 27.86 per cent of the respondents said they ‘agree’ to the statement of ‘trying of entirely new method in farming involves risks but, it is worthy’. Whereas about 45.00 and 27.14 per cent of the respondents said ‘undecided’ and ‘disagree’, respectively.

It can be observed from Table 5 that 48.57 per cent of the beneficiaries had medium risk orientation. Whereas, 32.86 and 18.57 per cent of them had low and high level of risk orientation respectively.

4.1.8 Innovativeness

The data in the Table 6 revealed the innovativeness of beneficiaries. About 40.00 per cent of the respondents, ‘agree’ to the statement that ‘they are very much interested in adopting whatever new practices those are helpful in conserving soil and water’, while 31.43 and 28.57 per cent of the respondents gave ‘undecided’ and ‘disagreement’ opinion to the statement, respectively.

Table 6: Innovativeness of beneficiary farmers

(n = 140)

Sl. No.	Statements	Agree		Undecided		Disagree	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1.	I am very much interested in adopting whatever new practices those are helpful in conserving soil and water	56	40.00	44	31.43	40	28.57
2.	Since I am not sure of the success of the new IFS practices, I would like to wait till others adopt	0	0.00	69	49.26	71	50.74
3.	Since IFS practices are not profitable I am not interested in any of them	0	0.00	55	39.26	85	60.74
4.	I try to keep myself well informed about the improved IFS practices try to adopt as soon as possible	70	50.00	67	47.88	3	2.14
5.	New IFS practices are not easily adoptable and hence I don't adopt	0	0.00	0	0.00	140	100.00

Table 7: Innovativeness of beneficiary farmers

Variable	Category	Frequency	Percentage
Innovativeness	Low	40	28.57
	Medium	68	48.57
	High	32	22.86

Mean : 12.50
SD : 1.51

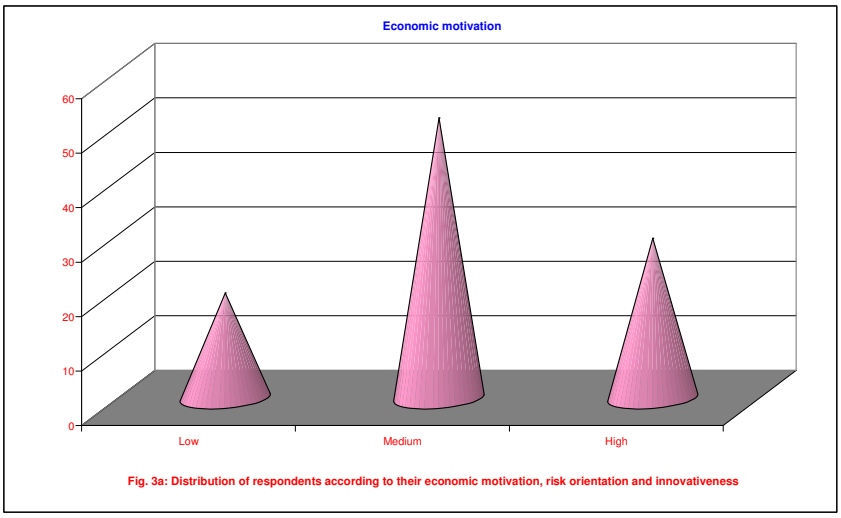


Fig. 3a: Distribution of respondents according to their economic motivation, risk orientation and innovativeness

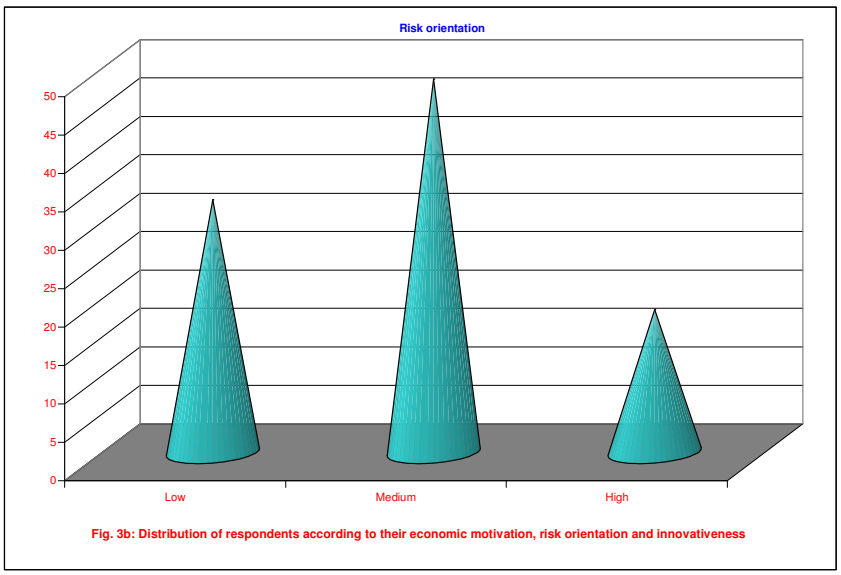


Fig. 3b: Distribution of respondents according to their economic motivation, risk orientation and innovativeness

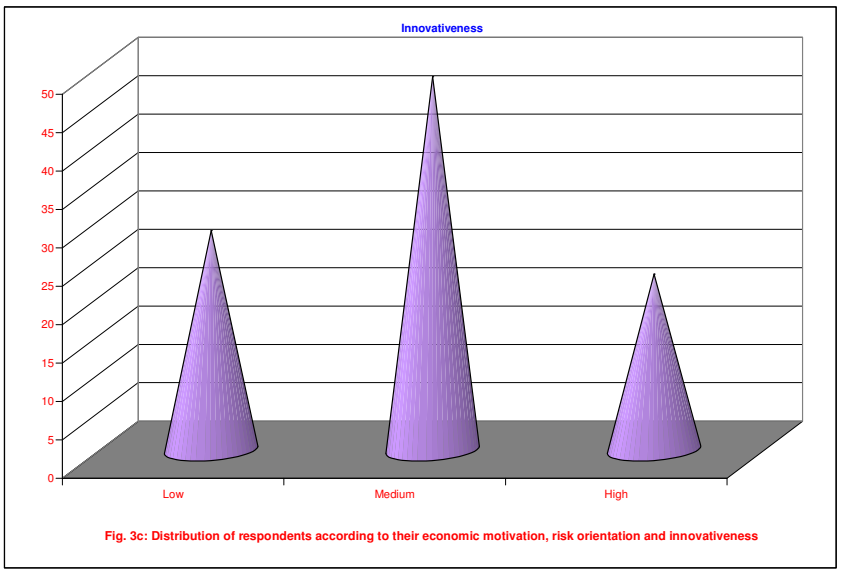


Fig. 3c: Distribution of respondents according to their economic motivation, risk orientation and innovativeness

Fig. 3: Distribution of respondents according to their economic motivation, risk orientation and innovativeness

Whereas, 50.74 per cent of the respondents 'disagreed' to the statement i.e., 'they are not sure of the success of the new IFS practices and like to wait till others adopt'. About 49.26 per cent of the respondents gave 'undecided' opinion.

While, 60.74 per cent of the respondents 'disagreed' to the statement of 'IFS practices are not profitable and not interested in any of them'. About 39.26 per cent of the respondents were 'undecided' about the statement.

Majority (50.00%) of the respondents said 'agree' to the statement i.e., 'they try to keep well informed about the improved IFS practices and try to adopt as soon as possible'. About 47.80 per cent of the respondents gave undecided opinion and only 2.14 per cent of the respondents 'disagreed' to the statement.

Further, 100 per cent of the respondents were 'disagreement' to the statement i.e., 'new IFS practices are not easily adoptable and hence I don't adopt'.

It an be revealed that 48.57 per cent of the respondents belonged to medium level of innovativeness category. While, 28.57 and 22.86 per cent of the respondents belonged to low and high innovativeness categories, respectively as presented in Table 7.

4.1.9 Extension participation

A perusal of Table 8 revealed the extension participation of beneficiaries. Regarding 'group discussion meetings', 53.50 per cent of the respondents participated in group discussion meetings organized by BAIF agency. Of which, 32.14 and 21.43 per cent of the respondents had occasional and regular participation, respectively. While, 46.43 per cent of the respondents never participated,

It can be seen from the Table 8 that, 47.80 per cent of the respondents participated in 'training programmes' organized by BAIF. About 27.14 per cent of respondents participated regularly in training programmes, while 20.72 per cent of respondents participated occasionally and 52.14 per cent of them never participated.

Regarding 'demonstrations', 27.14 per cent of respondents participated in demonstration organized by BAIF. About 15.00 per cent of the respondents participated occasionally followed by 12.14 per cent of them participated regularly and 72.86 per cent of them never participated.

About 21.42 per cent of the respondents participated in 'exhibitions' organized by BAIF agency and 5.71 per cent of respondents participated in exhibitions organized by other agencies. Majority (70.00%) of the respondents had no participation. Whereas, 20.71 and 9.29 per cent of the respondents participated occasionally and regularly, respectively.

It can be observed from the Table 8 that 50.71 per cent of the respondents participated in 'Krishimela' organized by other agencies. While, 49.28 per cent of the respondents had no participation. Whereas, 22.86 and 27.86 per cent of the respondents participated regularly and occasionally, respectively.

In case of 'field visits', 30.70 per cent of the respondents participated in field visits organized by BAIF agency. Whereas about 69.28 per cent of them never participated, followed by 17.86 and 12.86 per cent of the respondents participated occasionally and regularly, respectively.

It can be seen from the Table 8 that, 17.10 per cent of the respondents participated is' lectures', while 82.86 per cent had no participation, whereas 16.43 and 0.71 per cent of respondents participated occasionally and regularly, respectively.

Further, 40.70 per cent of the respondents participated in 'educational tours' organized by BAIF agency and it can be also observed that, 32.14 per cent of the respondents participated occasionally and 8.57 per cent participated regularly whereas 59.29 per cent of the respondents did not participate.

4.1.10 Sources of information

The data in Table 9 revealed the sources of information consulted by the beneficiaries. Regarding contact with 'officials of BAIF organizations', 92.14 per cent of the respondents consulted regularly, 7.86 per cent of the respondents contacted occasionally.

Table 8: Extension participation of beneficiary farmers

(n = 140)

Sl. No.	Categories	Organized by BAIF		Organized by other agency		Regular		Occasional		Never	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1.	Group discussion meetings	75	53.50	0	0	30	21.43	45	32.14	65	46.43
2.	Trainings	67	47.80	0	0	38	27.14	29	20.72	73	52.14
3.	Demonstrations	38	27.14	0	0	17	12.14	21	15.00	102	72.86
4.	Agricultural exhibitions	30	21.42	8	5.71	13	9.29	29	20.71	98	70.00
5.	Krishimela	0	0..00	71	50.71	32	22.860	39	27.86	69	49.28
6.	Field visits	43	30.70	0	0	18	12.86	25	17.86	97	69.28
7.	Lectures	24	17.10	0	0	1	0.71	23	16.43	116	82.86
8.	Educational tours	57	40.70	0	0	12	8.57	45	32.14	83	59.29

Table 9: Sources of information consulted by of beneficiary farmers

(n = 140)

Sl. No.	Category	Regular		Occasional		Never	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1.	Officials of BAIF organization	129	92.14	11	7.86	0	0.00
2.	Assistant Director of Agriculture	4	2.86	38	27.14	98	70.00
3.	Assistant Horticulture Officer	3	2.14	45	32.14	92	65.72
4.	Subject Matter Specialists, UAS Bangalore, Dharwad	12	8.57	38	27.14	90	64.29
5.	Private Consultants of Agriculture	14	10.00	16	11.43	110	78.57
6.	Progressive Farmers	3	2.14	47	33.57	90	64.29
7.	Radio	34	24.29	48	34.29	58	41.42
8.	Newspaper	8	5.72	22	15.71	110	78.57
9.	Farm Magazines	7	5.00	4	2.86	129	92.14
10.	Television	20	14.29	23	16.42	97	69.29

Further, it can be seen from the Table 9 that 27.14 per cent of the respondents consulted 'Assistant Director of Agriculture' occasionally, whereas 70.00 per cent never consulted while 2.86 per cent contacted regularly.

Regarding contact with 'Assistant Horticultural Officer', 32.14 per cent of the respondents contacted occasionally, while 65.72 per cent never contacted, whereas 2.14 per cent of them consulted regularly.

Regarding contact with 'subject matter specialists of UAS Dharwad', 64.29 per cent of respondents never consulted, while 27.14 and 8.57 per cent consulted occasionally and regularly, respectively.

It is clear from the result that the majority (78.57%) of the respondents never consulted the 'private consultants of agriculture', whereas 11.43 per cent respondents contacted occasionally, while 10.00 per cent of respondents consulted regularly.

It was also noticed that, the majority (64.29%) of the respondents never consulted 'progressive farmers', whereas 33.57 per cent of respondents contacted occasionally. Further, 2.14 per cent of respondents consulted regularly.

It could be observed from the Table 9 that, 41.42 per cent of the respondents not listening radio. Whereas 34.29 per cent of the respondents listen to radio occasionally, whereas 24.29 per cent of the respondents listen radio, regularly.

Further, only 5.72 per cent of the respondents read 'newspaper' regularly, while 15.71 per cent of the respondents read newspaper occasionally and majority 78.57 per cent of them never read the newspaper for agricultural information.

From the Table 9, it is evident that majority (92.14%) of the respondents never had farm magazine' reading habit, remaining 5.00 per cent of them read regularly and 2.86 per cent of the respondents read occasionally for agriculture information.

It is clear from the result that, 14.29 per cent of the respondents got agriculture information by viewing television regularly. While 16.42 per cent of the respondents view television occasionally. As high as, 69.29 per cent of respondents never saw television to get information on agriculture.

4.1.11 Mass media participation

Table 10 revealed the mass media participation of BAIF beneficiary farmers. Regarding possession to radio, 51.40 per cent of the respondents possessed radio, further 42.86 per cent of respondents listen regularly to other than agricultural programmes,whereas only 7.14 percent of them listen radio for agricultural information regularly. While 17.86 and 27.14 percent of the respondents listen radio occasionally for agriculture information and other programmes respectively. Further 75.00 and 30.00 percent of them never listen to agricultural programmes and other programmes respectively.

Only 10.00 per cent of the respondents were subscribers to news paper whereas 10.71 and 37.14 per cent of the respondents read news paper occasionally about agriculture related articles and also other articles respectively, followed by 83.58 and 45.00 per cent of respondents never read, while 5.71 and 17.86 per cent were of them regular readers of agricultural information and other than agriculture information respectively.

Regarding farm magazines, 7.80 per cent of the respondents were subscribers, and 92.14 per cent never read farm magazine whereas 4.29 per cent read regularly, while 3.57 per cent were occasional readers.

It can be seen from the Table 10 that 30.71 per cent of the respondents were possessing television further 21.43 per cent of them view T.V programmes regularly to agriculture related programmes, while 30.71 percent see T.V regularly to other than agriculture programmes. About 40.71 and 20.00 per cent of them watch TV occasionally relating to other programmes and agriculture related programmes, respectively .While 58.57 and 28.58 per cent never watch television.

Table 10: Mass media utilization of beneficiary farmers

(n = 140)

Sl. No.	Organization		Owner/ subscriber	Extent of reading / listening / viewing					
				Regular		Occasional		Never	
				Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1.	Listening radio	Agriculture	72 (51.40)	10	7.14	25	17.86	105	75.00
		Others		60	42.86	38	27.14	42	30.00
2	Reading newspaper	Agriculture	14 (10.00)	8	5.71	15	10.71	117	83.58
		Other		25	17.86	52	37.14	63	45.00
3.	Farm magazine	Agriculture	11 (7.80)	6	4.29	5	3.57	129	92.14
4.	Watching TV	Agriculture	43 (30.71)	30	21.43	28	20.00	82	58.57
		Other		43	30.71	57	40.71	40	28.58

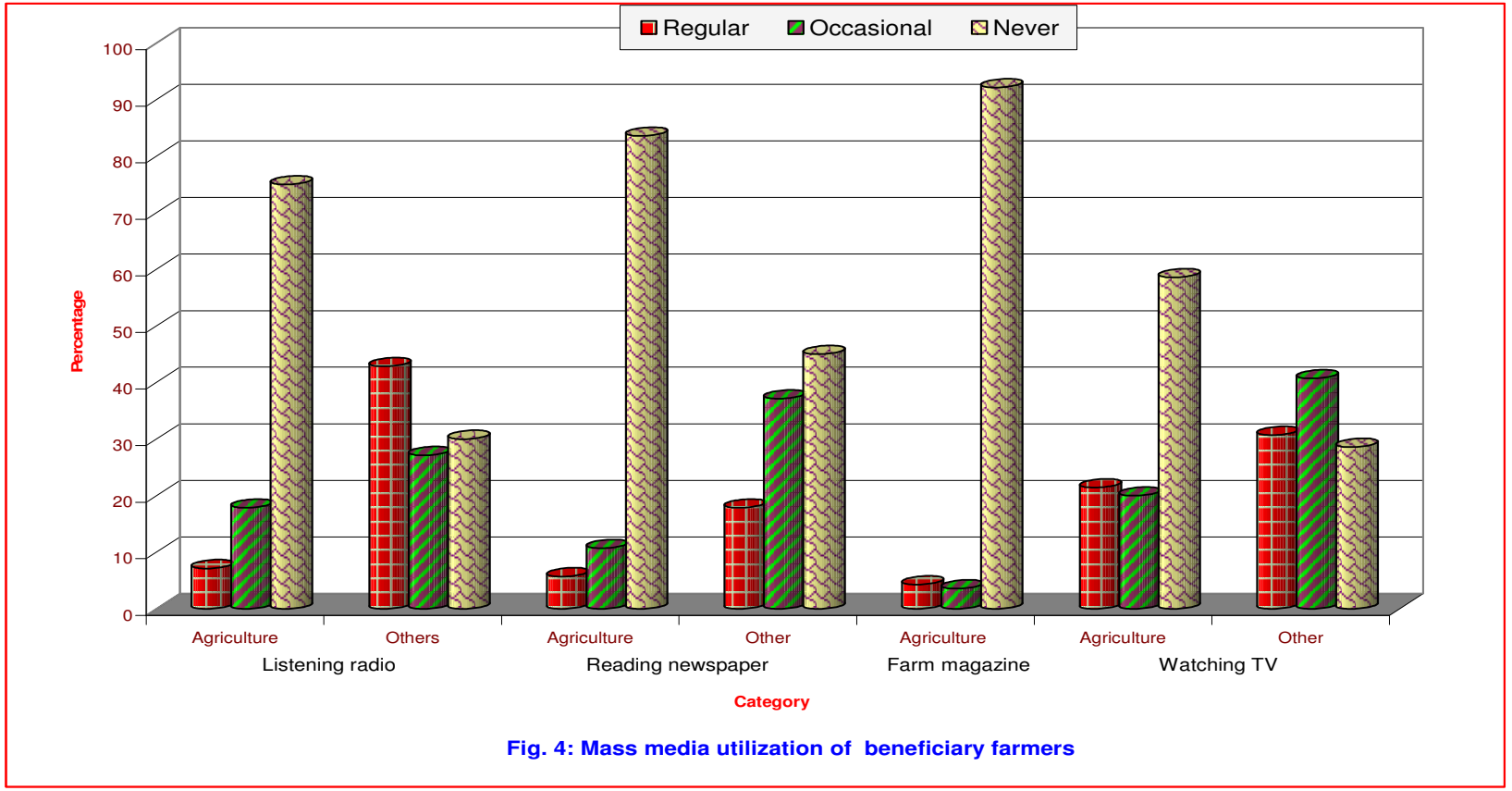


Fig. 4: Mass media utilization of beneficiary farmers

Fig. 4: Mass media utilization of beneficiary farmers

4.1.12 Organizational participation

The data presented in Table 11 reveals the organizational participation of the beneficiaries. It was found that 7.85 per cent of respondents were members and 12.10 per cent were office bearers of Gram panchayat. Further, 32.14 per cent of the respondents never participated, while 45.72 and 22.14 per cent of respondents participated occasionally and regularly in Gram panchayat programmes respectively.

About 9.28 per cent of the respondents were office bearers of taluk panchayat. Only 5.71 and 20.00 per cent of the respondents participated regularly and occasionally in taluk panchayat programmes, respectively. About 74.29 per cent of the respondents never participated.

About zilla panchayat, 7.14 per cent of the respondents were office bearers. In Zilla panchayat. Further, majority (92.85%) of the respondents never participated. Whereas, 5.00 and 2.15 per cent of the respondents participated occasionally and regularly in zilla panchayat programmes, respectively.

Regarding participation in co-operative societies, 8.57 per cent of respondents were members and 10.70 per cent were office bearers, while 28.56 per cent of the respondents participated regularly, followed by 32.15 and 39.29 per cent having no participation and occasional participation, respectively.

About 22.14 per cent of respondents were members and 6.42 per cent of respondents were office bearers of youth club. While, 66.43 per cent of respondents never participated, followed by 17.86 and 15.71 per cent of respondents participated regularly and occasionally, respectively.

About 7.14 per cent of respondents were found to be members and 5.00 per cent were office bearers in Raitha Samparka Kendra. Further, 55.00 per cent of respondents had no participation, followed by 15.71 and 29.29 per cent of respondents having regular and occasional participation, respectively.

Whereas, 15.00 and 21.40 per cent of respondents were found to be members and office bearers, respectively in Raitha Sangha's. While, 47.86 per cent of respondents had no participation, whereas 22.14 and 30.00 per cent of respondents having regular and occasional participation, respectively.

Regarding participation in Mahila Mandal only 4.28 per cent of the respondents were members, while 95.71 per cent of respondents having no participation, whereas 2.86 and 1.43 per cent of the respondents having regular and occasional participation, respectively.

A close observation of Table 12 reveals that, majority (48.57%) of the respondents had medium organizational participation, followed by low (27.86%) and high (23.57%) organizational participation.

4.2 Impact of Integrated Farming System on the socio-economic status and annual income of the beneficiaries

4.2.1 Impact of IFS programme on the socio-economic status of beneficiary farmers

Change in occupation

Table 13 indicates that, in case of primary occupation, there was increase in agriculture occupation from 89.29 per cent before to 94.29 per cent after implementation of IFS programme. Remaining respondents were agricultural labour and it decreased from 10.71 per cent before to 5.71 per cent after implementation of IFS programme.

The percentage of respondents engaged in secondary occupation was high in case of business was increased from 12.86 per cent before to 32.14 per cent after. In case of service oriented occupation increased from 1.42 before to 4.29 per cent after implementation of IFS programme. Respondents belonging to other occupation were increased from 2.14 per cent before to 7.80 per cent after implementation of IFS programme.

Table 11: Organizational participation of beneficiary farmers

(n = 140)

Sl. No.	Organization	Member	Office bearer	Regular		Occasional		Never	
				Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1.	Gram panchayat	11 (7.85)	17 (12.1)	31	22.14	64	45.72	45	32.14
2.	Taluk panchayat	-	13 (9.28)	8	5.71	28	20.00	104	74.29
3.	Zilla panchayat	-	10 (7.14)	3	2.15	7	5.00	130	92.85
4.	Co-operative Societies	12 (8.57)	15 (10.7)	40	28.56	55	39.29	45	32.15
5.	Youth club	31 (22.14)	9 (6.42)	25	17.86	22	15.71	93	66.42
6.	Raitha Samparka Kendra	10 (7.14)	7 (5.00)	22	15.71	41	29.29	77	55.00
7.	Raitha Sangha's	21 (15.00)	30 (21.40)	31	22.14	42	30.00	67	47.86
8.	Mahila Mandal	6 (4.28)	-	4	2.86	2	1.43	134	95.71

Table 12: Organizational participation of beneficiary farmers

Variable	Category	Frequency	Percentage
Organizational participation	Low	39	27.86
	Medium	68	48.57
	High	33	23.57

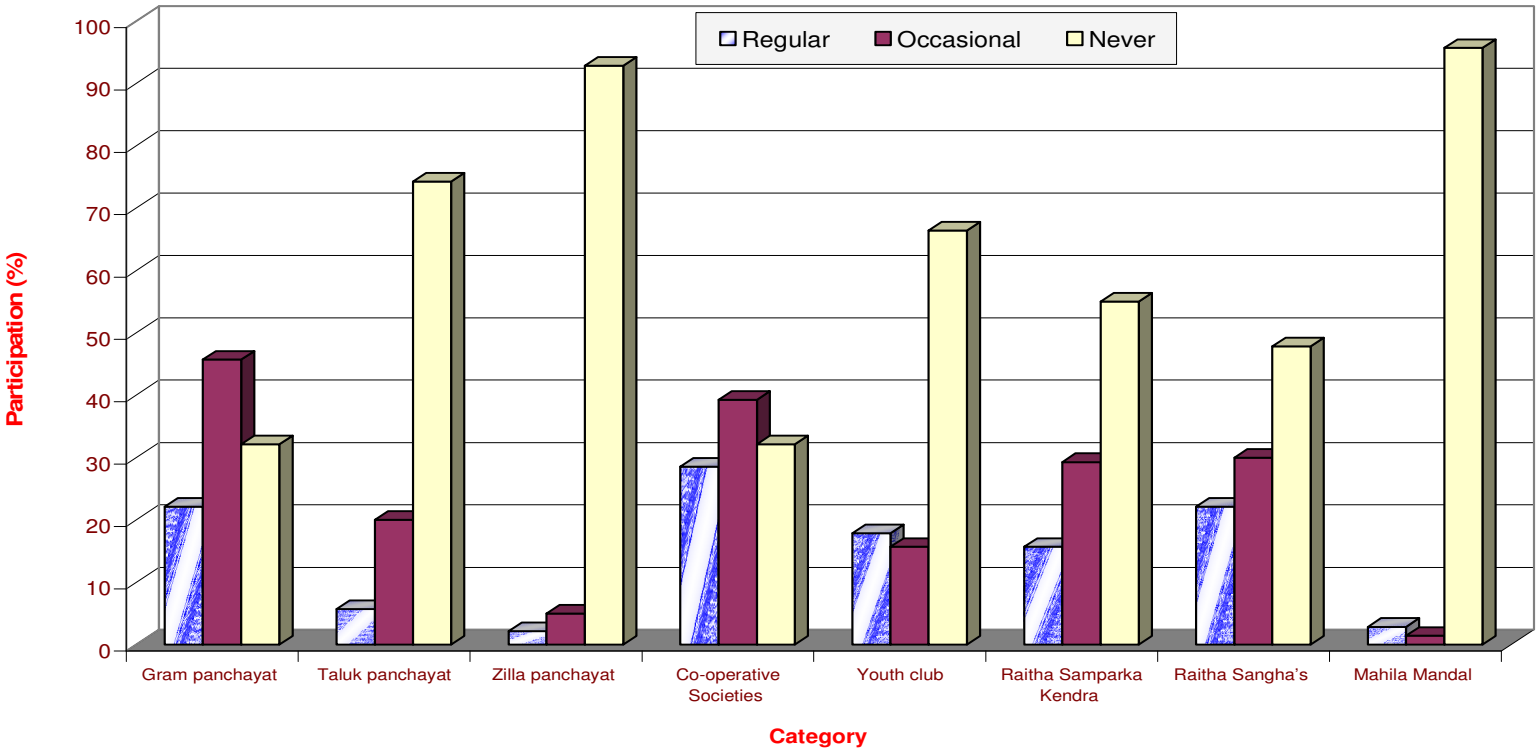


Fig. 5: Organizational participation of beneficiary farmers

Fig. 5: Organizational participation of beneficiary farmers

Table 13: Impact of Integrated Farming System on socio-economic status of beneficiary farmers

(n = 140)

Sl. No.	Variables		Before		After		Difference	
			Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1.	**Occupation**							
	a) Primary	1) Agriculture	125	89.29	132	94.29	7	5.00
		2) Agril. labour	15	10.71	8	5.71	7	5.00
	b) Secondary	1) Business	18	12.86	45	32.14	27	19.21
		2) Service	2	1.42	6	4.29	4	2.14
		3) Other occupation	3	2.14	11	7.80	8	5.70
2.	**No. of houses owned**	1) One house	140	100.00	140	100.00	-	-
		2) Tow houses	0	0.00	27	19.20	27	19.20
3.	**Type of house**	1) Hut	15	10.71	4	2.86	11	7.85
		2) Roofed house	51	36.43	31	22.14	20	14.20
		3) Tiled roof	58	41.43	72	51.43	14	10.00
		4) Mixed tiled with concrete	12	8.57	21	15.00	9	6.42
		5) Concrete	4	2.86	12	8.57	8	5.71

Contd……

Sl. No.	Variables		Before		After		Difference	
			Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
4.	**Land holding**	1) Marginal farmers	55	39.29	36	25.72	19	13.57
		2) Small farmers	53	37.86	71	50.72	18	12.86
		3) Medium farmers	30	21.43	31	22.14	1	0.71
		4) Large farmers	2	1.42	2	1.42	0	0.00
5.	**Sources of irrigation**	1) farm pond	0	0.00	87	62.14	87	62.14
		2) Wells	12	8.57	21	15.00	9	6.43
		3) Borewell	11	7.86	19	13.57	8	5.71
6.	**Farm power**							
a)	Bollocks	1) One pair	42	30.00	73	52.14	21	15.0
		2) Two pairs	0	0.00	8	5.71	8	5.71
b)	Power tiller		2	1.40	2	1.40	0	0
c)	Tractor		1	0.71	1	0.71	0	0
d)	Sprayer		25	17.80	64	45.71	15	10.7
e)	Duster		-	-	-	-	-	-

Contd…..

Sl. No.	Variables		Before		After		Difference	
			Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
7.	Material possession							
a)	Bullock cart	1) One cart	33	23.57	51	36.43	18	12.86
		2) two carts	0	0.00	0	0.00	0	0.00
b)	Radio		31	22.14	72	51.43	41	29.29
c)	Television		15	10.71	43	30.71	28	20.00
d)	Furniture	1) 1-2 furnitures	68	48.57	55	39.29	13	9.29
		2) 3-4 furnitures	15	10.71	44	31.42	29	20.71
		3) 5-6 furnitures	2	1.42	8	5.71	6	4.29
5.	Improved agricultural Implements	1) 1-2	23	16.43	58	41.43	35	25.00
		2) 3-4	6	4.29	13	9.29	7	5.00
		3) 5-6	0	0.00	0	0.00	0	0.00
6.	Vehicles for transport	1) Bicycle	36	25.71	70	50.00	34	24.29
		2) Motor bike	2	1.43	11	7.86	9	6.43
8	Organization participation	1) Low	98	70.00	39	27.86	59	42.10
		2) Medium	25	17.90	68	48.57	43	30.70
		3) High	17	12.10	33	23.57	16	11.40

Table 14: Impact of Integrated Farming System on the annual income of the beneficiaries

(n = 140)

Variable	Categories	Before		After		Difference	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Annual income (Rs. 10,000)	Low (upto Rs. 17,000)	40	28.57	19	13.57	21	15.00
	Semi-medium (Rs. 17,001 – 34,000)	50	35.71	25	17.86	25	17.86
	Medium (Rs. 34,001 – 51,000)	38	27.14	79	56.43	41	29.29
	High (>51,000)	12	8.58	17	12.14	5	3.57

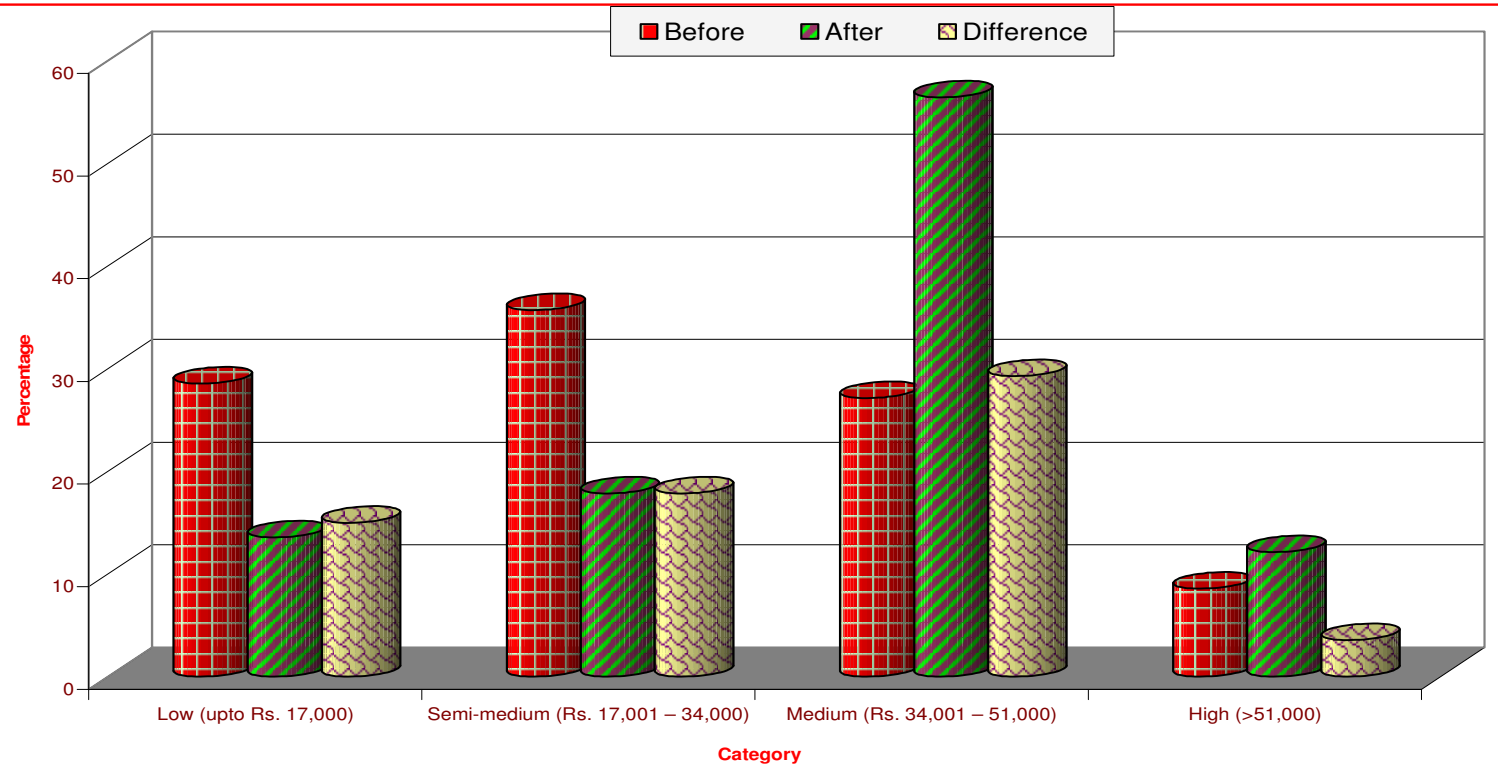


Fig. 6: Impact of Integrated Farming System on the annual income of the beneficiaries

Fig. 6: Impact of Integrated Farming System on the annual income of the beneficiaries

Change in number of houses

It could be observed from Table 13 that, 100 per cent of respondents were owned one house before implementation of IFS programme. However, there was an increase from 0.00 to 19.2 per cent of respondents owned two houses after implementation of the IFS programme.

Change in type of house owned

The data presented in Table 13 indicates the number of respondents 2.86 per cent who owned concrete house augmented to 8.57 per cent, resulting in 5.71 per cent increase from before to after implementation of IFS programme. This increase was more predominant in case of respondents owning mixed tiled with concrete house as it increased from 8.57 per cent before to 15.00 per cent after implementation of IFS programme. In case of tiled roof house, the increase in per cent of respondents from 41.43 to 51.43 per cent was observed from before and after implementation of IFS programme. In case of roof house, the decrease in per cent of respondents from 36.43 to 22.14 per cent was observed from before and after implementation of IFS programme. This decrease was more predominant in case of respondent owning hut house as it decreased from 10.71 per cent before to 2.86 per cent after implementation of IFS programme.

Change in land holding

It is clear from Table 13 that, there was increase in percentage of respondents belonging to small farmers from 37.86 per cent before to 50.72 per cent after and large farmers they remained as same after implementation of the IFS programme. The decrease in percentage of marginal farmers from 39.29 per cent before to 25.72 per cent after. In case of medium farmers, there was increase from 21.43 per cent before to 22.14 per cent after implementation of IFS programme.

Change in irrigation source

Table 13 presents source of irrigation for cultivation of crops which indicates that, there was increase in number of farm ponds from 0.00 per cent before to 62.14 per cent after implementation of the IFS programme and also increase in number of wells 8.57 per cent before to 15.00 per cent after implementation of IFS programme. Similarly, in case of bore wells increased from 7.86 per cent before to 13.57 per cent after implementation of IFS programme.

Change in farm power

The data presented in Table 13 revealed that the percentage increase in the number of bullocks by the respondents showed positive trend. Majority of the respondents having one pair increased from 30.00 per cent before to 52.14 per cent after implementation of IFS programme. It was evident that two pairs of bullocks owned by the 5.71 per cent of the respondents after implementation of IFS programme. The respondents owned tractors and power tillers remained as same after implementation of IFS programme. The respondents owned sprayers increased by 17.80 per cent to 45.71 per cent after implementation of IFS programme.

Change in material possessions

It could be noted from Table 13 that, the respondents possessed radio increased 22.14 per cent before to 51.43 per cent after implementation of IFS programme. In case of television owned respondents it is increased from 10.71 per cent before to 30.71 per cent after implementation of IFS programme. Similar tendency was observed in respect of the per cent of beneficiaries owning one cart increased from 23.57 per cent before to 36.43 per cent after implementation of IFS programme. Percentage of respondents possessing furniture is increased having 5 to 6 furniture by 1.42 per cent before to 5.71 per cent after implementation of IFS programme. Respondents owning 3 to 4 furniture increased by 10.71 per cent before to 31.42 per cent after implementation of IFS programme. With respect to 1 to 2 furniture has been decreased from 48.57 per cent before to 39.29 per cent after implementation of IFS programme. Percentage of respondents possessing motor bike increased from 1.43 per cent before to 7.86 per cent after implementation of IFS programme. Respondents possessing bicycle increased from 25.71 per cent before to 50.00 per cent after implementation of IFS

programme. Owning of other improved agricultural implements 3 to 4 is increased from 4.29 per cent before to 9.29 per cent after implementation of IFS programme. In case of 1 to 2 improved agricultural implements there was increased from 16.43 to 41.43 per cent after implementation of IFS programme and nobody is having 5 to 6 improved agricultural implements.

Change in organizational participation

It could be observed from Table 13 that, the respondents having high social participation level is increased from 12.10 to 23.57 per cent after implementation of IFS programme. In case of medium level the organizational participation increased from 17.90 per cent before to 48.57 per cent after implementation of IFS programme and respondents having low level of organizational participation level is decreased from 70.00 to 27.86 per cent after implementation of IFS programme.

Socio-economic status of beneficiaries before and after the implementation of the programme

To know the mean difference in socio-economic status of beneficiaries before and after the implementation of the programme, the 'Wilcoxon matched-pairs' signed ranks test is chosen because the study employs two related samples and it yields difference scores.

Wilcoxon matched pairs signed rank test

$T_+ = 543$

$$\mu_T = \frac{n(n+1)}{4} = \frac{35(35+1)}{4} = 315$$

$$\sigma^2 = \frac{n(n+1)(2n+1)}{24} = \frac{35(35+1)(2 \times 35+1)\ 24}{24} = 3780$$

$$Z = \frac{543 - 315}{\sqrt{3780}} = \frac{228}{61.5} = 3.7^{**}$$

** - Significant at 1% level

Z value (3.70) reveals the fact that the programme had resulted in significant change in the overall socio-economic status of beneficiaries. This clearly indicates that, the IFS programme mainly helps to improve the socio-economic status of the beneficiary farmers.

4.2.2 Impact of IFS programme on the annual income of the beneficiaries

It could be observed form Table 14 that, before implementation of IFS programme 28.57 per cent of the respondents belonged to low income group which after implementation of IFS programme reduced to 13.57 per cent. In case of semi-medium income group it was decreased from 35.71 per cent before to 17.86 per cent after implementation of IFS programme. Whereas, in case of medium income group it was increased from 27.14 to 56.40 per cent after implementation of IFS programme, whereas in case of high income group there was increase from 8.58 per cent before to 12.14 per cent after implementation of IFS programme.

Table 15: Different farming systems adopted by beneficiary farmers

(n = 140)

Sl. No.	Farming systems	Frequency	Percentage	Income generated (Rs./annum) average
1.	Agriculture-Horticulture-Dairy	5	3.57	18,000
2.	Agriculture-Horticulture-Dairy–Forage crops	11	7.86	21,000
3.	Agriculture-Horticulture-Forestry–Dairy-Forage crops	7	5.00	26,000
4.	Agriculture-Horticulture-Forestry– Dairy-Vermicompost	87	62.14	35,000
5.	Agriculture-Horticulture-Forestry–Dairy-Vermicompost-Forage crops	30	21.43	38,000

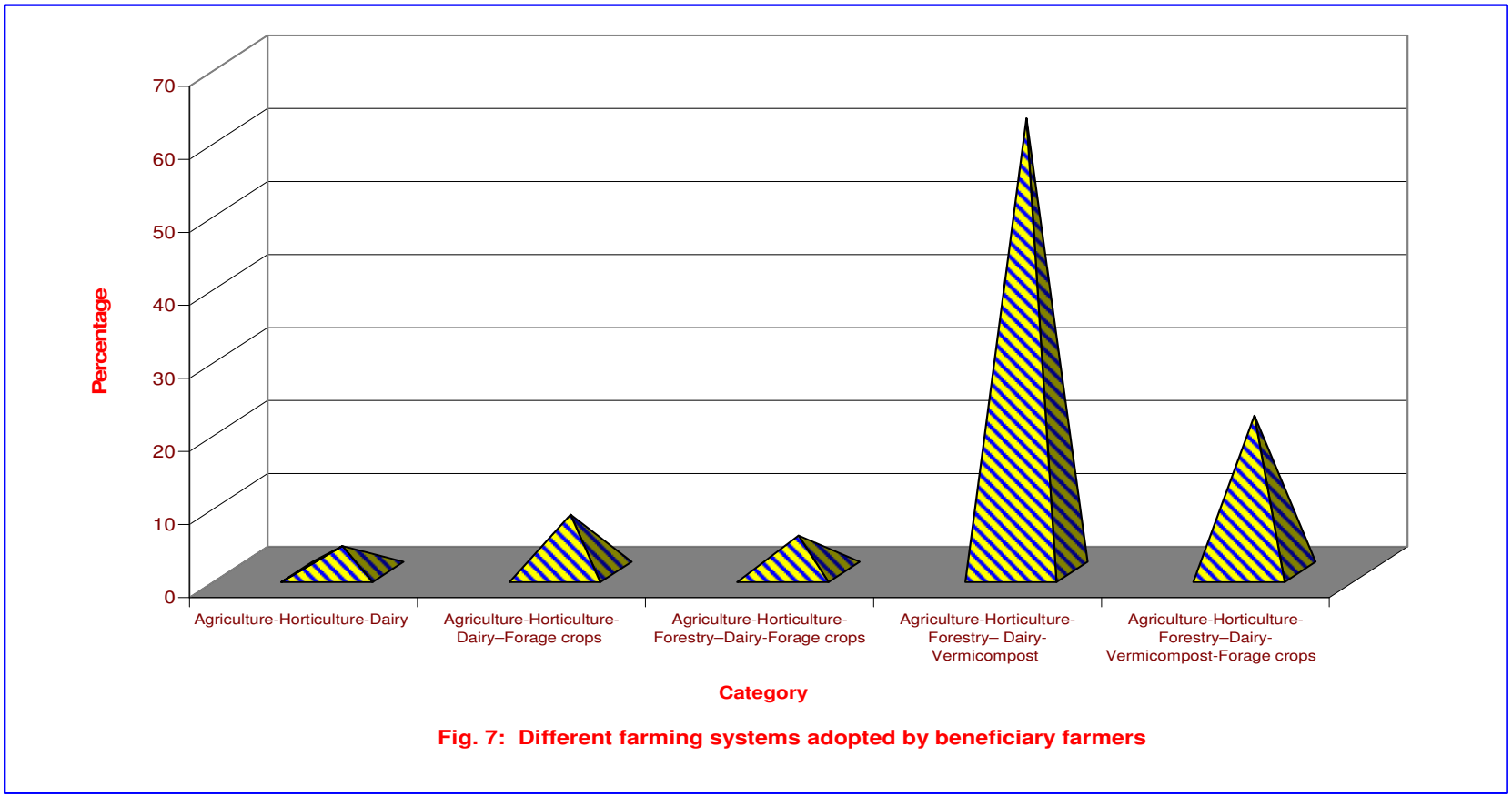


Fig. 7: Different farming systems adopted by beneficiary farmers

Plate 1: Beginning of the IFS programme

Plate 2: In Between

Plate 3: Present

Plate 4: Agriculture+Silviculture

Plate 5: Horticulture + Silviculture

Plate 6: Agri+Horti+Silvi

Plate 7: Agri + Horti + Forestry + Forage crops

Plate 8: Horticulture + Silviculture + Fodder crops

Plate 9: Live hedge

Plate 10: Drought proofing without irrigation

Plate 11: Azolla

Plate 12: Vermicompost

Plate 13: Goat rearing

Table 16: Opinion of beneficiaries about the Integrated Farming System

(n = 140)

Sl. No.	Opinions	Responses		Rank
		Frequency	Percentage	
1.	Do you feel the IFS practices helped in increasing the returns from farming?	98	70.00	I
2.	Do you think local resources can be effectively utilized in IFS?	76	54.29	VII
3.	How do you feel about the degree of complex of IFS practices?	58	41.43	XI
4.	How do you feel about the cost effectiveness of IFS practices?	96	68.57	II
5.	Do you feel IFS can provide returns on regular basis?	81	57.86	V
6.	How quick you can get returns from IFS?	63	45.00	XI
7.	How risky it is adopt of IFS?	68	48.57	IX
8.	How secure you feel with the adoption of IFS?	87	62.14	IV
9.	Whether the IFS programme increases the employment opportunity to the rural people?	90	64.29	III
10.	Species planted on wastelands increases the productivity of land.	66	47.14	X
11.	Whether beneficiaries under IFS programme is more subsidy oriented than development oriented?	25	17.86	XIII
12.	Income of the beneficiaries will be raised due to more employment opportunity.	74	52.86	VIII
13.	It is more feasible because it helps rural people to conserved their own resources	78	55.71	VI

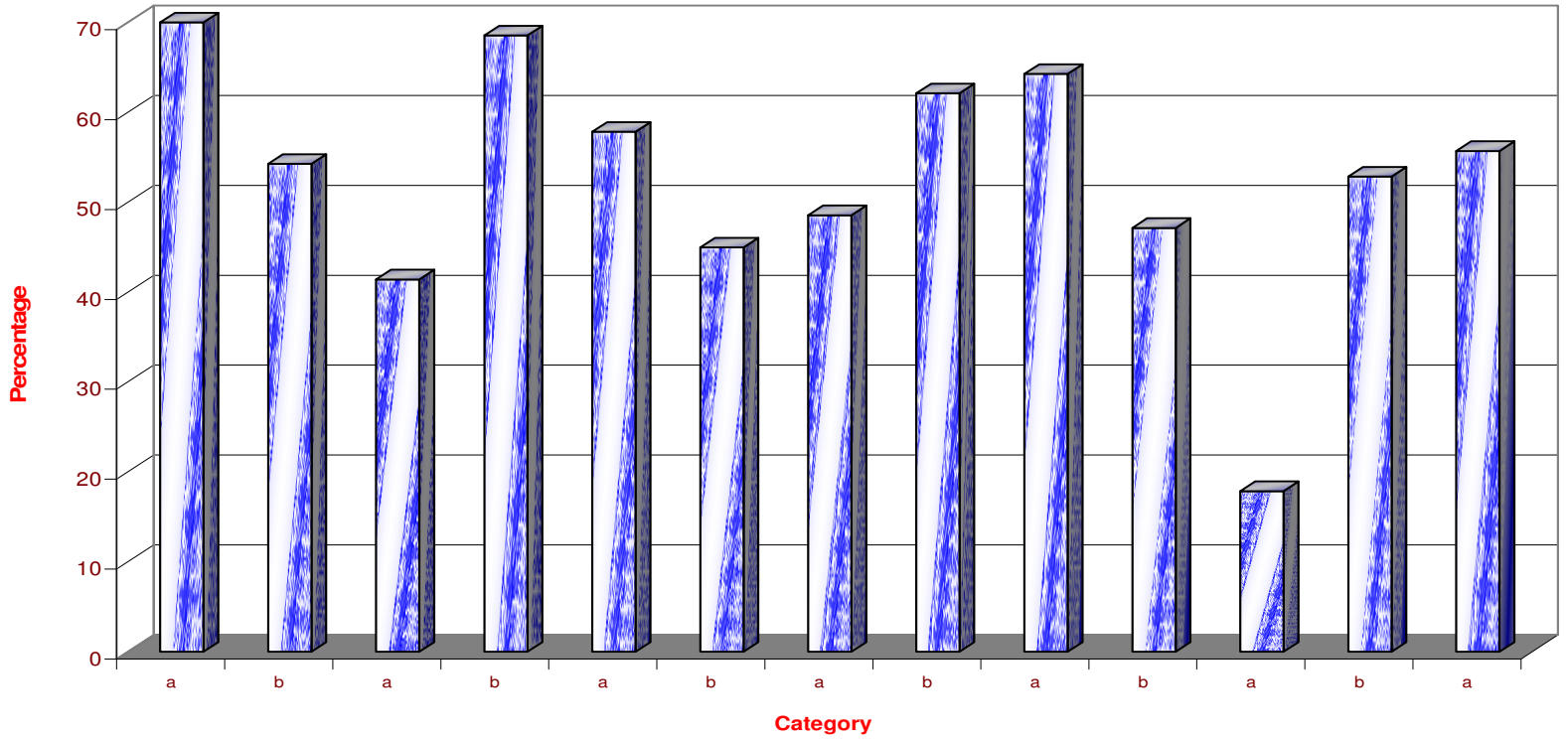


Fig. 8: Opinion of beneficiaries about the Integrated Farming System

Fig. 8: Opinion of beneficiaries about the Integrated Farming System

4.3 Different farming systems adopted by BAIF beneficiary farmers

The data presented in Table 15 indicates the different farming system adopted by the BAIF beneficiary farmers and also their income generation per annum. The results revealed that, (62.14%) of the beneficiaries practicing agriculture- horticulture-forestry-dairy and vermicompost as integrated farming system approach and they gained about Rs. 35,000 income per annum. Whereas, 21.43 per cent of the beneficiaries adopted agriculture-horticulture-forestry- dairy- vermicompost and forage crops and they are getting Rs. 38,000 per annum. On an average Rs. 26,000 income was generated through agriculture-horticulture- forestry and dairy and forage crops. This was adopted only by 5.00 per cent of the beneficiaries. Whereas, 7.86 per cent of beneficiaries practicing agriculture-horticulture-forage crops and dairy and also they gained Rs. 21,000 per annum. While, 3.57 per cent of the beneficiaries practicing agriculture- horticulture and dairy gained Rs. 18,000 income per annum.

On the whole, the data revealed that the beneficiaries following enterprises like agriculture, horticulture, forestry, dairy, vermicompost, forage crops they are earning more income compared to other enterprises combination.

4.5 Opinion of the beneficiaries about the Integrated Farming System

The content in Table 16 indicated the opinion of the beneficiaries about the IFS programme in the order of priority were; about 70.00 per cent of the beneficiaries expressed that, the IFS practices helped in increasing the returns from farming. Whereas, 68.57 per cent of the beneficiaries expressed their opinion that integrated farming system is not that much costlier. About 64.29 per cent of the beneficiaries expressed their opinion that integrated farming system programme increase the employment opportunity to the rural people. According to 62.14 per cent of the beneficiaries adoption of IFS practices, resulting they feel very secured. About 57.86 per cent of the beneficiaries said that integrated farming system can provide returns on regular basis. Further, 55.71 per cent of the beneficiaries expressed IFS is more feasible and it also helps rural people to conserve their own resources. About 54.29 per cent of the beneficiaries felt that the local resources can be effectively utilized in integrated farming system. 52.86 per cent of the beneficiaries felt that income of the beneficiaries will be raised due to more employment opportunity. While, 48.57 per cent of the beneficiaries expressed their views that IFS practices include somewhat risky. About 47.14 per cent of the beneficiaries expressed that, species planted on wasteland increases the productivity of land. Further, 45.00 per cent of the beneficiaries expressed that integrated farming system can provide returns very quickly. While, 41.43 per cent of the beneficiaries expressed their views that IFS practice include some what complexity. 17.86 per cent of the beneficiaries said that IFS programme is more subsidy oriented than development oriented.

5. DISCUSSION

The results of the present study are discussed and interpreted under the following headings.

5.1 Personal and socio-economic profile of the beneficiaries

5.2 Impact of Integrated Farming System on socio-economic status and annual income of the beneficiaries

5.3 Different farming systems / enterprises adopted by BAIF beneficiary farmers

5.4 Opinion of beneficiaries about the Integrated Farming System

5.1 Personal and socio-economic profile of the beneficiaries

Age

The results presented in Table 1 revealed that, 51.43 per cent of beneficiaries were found to be in middle age category (36 – 50 years). About 27.14 per cent of the respondents belonged to old aged category of above 50 years and 21.43 per cent of the respondents belonged to young aged category of less than 35 years.

It is interesting to note that more percentage of beneficiaries belonged to middle age and old age. This implies that, the organizations have identified and encouraged middle and old age farmers by considering their farming experience to take benefits of Integrated Farming System approach. This might be the reason to find majority of the respondents in the middle and old age category.

The results are inline with the findings of Shanthamani (2007) and Raghavendra (2007)

Education

With regard to education level of the respondents, it was observed that, 34.30 per cent were illiterates, followed by primary school (17.86%) can ready only (15.70%) can read and write (11.43%) middle school (10.70%) high school (9.30%) and PUC (0.71%)

It can be concluded that, most of the respondents are below high school level of education. The results might be due to the fact that, the farmers might have experienced and might have understood the importance of education to increase their standard of living. Hence the results.

The results are in consonance with the findings of Chandregowda (1997) and Deepak (2003).

Land holding

It was observed that, 50.72 per cent of the beneficiary farmers belonged to small farmers category, followed by marginal farmers (25.72%), medium farmers (22.14%) and large farmers (1.42%). The reason might be that,due to increase in family members, the fragmentation of ancestors land from generation to generation might have led to marginal and small land holdings.

The similar findings were also reported in the research studies of Patil (2000) and Shashidhara (2003).

Annual income

The results regarding the annual income of the respondents indicated that 56.43 per cent of the beneficiaries had medium and 12.40 per cent of the beneficiaries had high level of income ranging from Rs. 34,001 to 51,000, and Rs. >51,000, respectively. The possible reasons that could be attributed area due to their large size land holdings and practicing income generating activities and growing commercial crops. Further the existence of families with a size of 5 to 8 members where number of earning members are more and found engaged in different occupations other than agriculture might have also contributed for this kind of result.

About 17.86 per cent of respondents belonged to semi-medium income group between Rs. 17,001 to 34,000. The possible reason may be that small land holding people, depend mainly on agriculture and also due to having dry lands, which might have caused to obtain medium level of annual income.

About 13.57 per cent of respondents belonged to low income of Rs. 17,000. It may be due to their lower socio-economic status and as a result their earning would be naturally lower and might not have adopted other source of income.

The above findings are in conformity with the findings of Sridhar (2002) and Nirmala (2003).

Farming experience

The results in Table 1 indicated that 33.58 per cent of the respondents belonged to medium experience category (15 – 28 years). While, 31.43 per cent of respondents had high experience (>28 years), whereas 20.71 per cent of the respondents belonged to very low (<10 years) farming experience and 14.28 per cent of the respondents had (10 – 15 years) low experience. The reason for majority of respondents belonged to medium experience category might be that by birth farmers are being dependent on agriculture profession and also inherited culture of farmers from generation to generation to follow the traditional agricultural experience.

The results are in accordance with the findings of Prabhu (2006) and Raghavendra (2007).

Economic motivation

The results in the Table 2 indicated the economic motivation of IFS beneficiaries. About 56.43 per cent of the respondents said 'agree' to the statement that 'all I want from my farm is to make just a reasonable living for my family'. Followed by 30.00 and 13.57 per cent of the respondents said 'undecided' and 'disagree', respectively.

While, 47.14 per cent of the respondents said 'agree' to the statement that 'in addition to making a reasonable amount of profit, the enjoyment of farming life is also important'. And for the same statement 37.14 and 15.72 per cent of the respondents expressed 'undecidedness' and 'disagree', respectively.

Whereas, 33.57 per cent of the respondents are ready to invest on 'integrated farming system practices to the maximum in order to gain large profit'. Further, 44.00 and 26.43 per cent said 'undecided' and 'disagree', respectively.

About 42.14 per cent of the respondents said 'disagree' to the statement that 'they don't hesitate to borrow any amount of money in order to run the farm properly', followed by 35.00 and 22.86 per cent of the respondents said 'undecided' and 'agree', respectively.

About 45.72 per cent of the respondents said 'agree' to the statement 'that they hate to borrow money in principle even when it is necessary for purchasing new farm implements', 32.14 and 22.14 per cent said 'undecided' and 'disagree', respectively.

Majority (57.14%) of the respondents said 'agree' to the statement that, 'they avoid excessive borrowing of money for investment in developing soil and water conservation structure', followed by 25.72 and 17.14 per cent of respondents said 'undecided' and 'disagree' for the same statement, respectively.

Further, 37.86 per cent of the respondents said 'agree' that their main aim is to maximizing profit in farming by following improved IFS practices than continuing old practices. About 47.14 and 15.00 per cent said 'undecided' and 'disagree', respectively. Similar findings were reported by Natikar (2001) and Bheemappa (2001).

An overall view of economic motivation presented in Table 3 indicated that majority of the farmers belonged to medium to high economic motivation category.

The respondents under medium(51.3%)and high (31.43%) economic motivation category were more in number, probably this category of respondents belonged to small and medium income group. Hence these variables might have motivated the respondents to get more economic return resulting in profit making behaviour. Further, the educational activities

and trainings on increasing agricultural production organized by BAIF might have motivated them to earn more and as a result they belonged to medium to high economic motivation category.

Less (19.20%) of beneficiaries belonged to low economic motivation category. This might be due to having less risk bearing capacity, less education and less mass media exposure, less extension contact and low social participation.

Risk orientation

The data in Table 4 revealed the risk orientation of the IFS beneficiaries. About 54.29 per cent of the farmers said 'agree' to the statement of 'growing of large number of corps mainly helps to avoid higher risk involved in growing one or two crops', followed by 25.00 and 20.71 per cent said 'undecided' and 'disagree', respectively.

Whereas, 41.43 per cent of the respondents expressed their agreement to the statement of 'a farmer should rather take more of chance in making big profits than to be content with a smaller but less risky profits' followed by 36.43 and 22.14 per cent said 'undecided' and 'disagree', respectively.

While, 35.00 per cent of the beneficiaries said 'agree' to the statement of 'a farmer who is willing to take greater risks than the average farmer usually does better financially', followed by 41.42 and 23.58 per cent said 'undecided' and 'disagree', respectively.

It could be observed from the Table that 30.00 per cent of the farmers said 'agree' to the statement of 'it is good for a farmer to take a risks when he knows his chances of success is high in adopting IFS practices'. Further, 40.71 and 29.29 per cent of the respondents said 'undecided' and 'disagree', respectively.

About 21.43 per cent of the respondents expressed that, 'it is better for a farmer not to try new farming method unless most others have used them successfully', followed 37.14 and 41.43 per cent of the respondents said 'undecided' and 'disagree' for the same statement, respectively.

Further, 27.86 per cent of the respondents said 'agree' to the statement of trying of entirely new method in farming involves risks but, it is worthy. Followed by 45.00 and 27.14 per cent of the respondents said 'undecided' and 'disagree', respectively.

An overall view of risk orientation of the respondents presented in Table 5 revealed that majority of the respondents belonged to medium(48.57%) and low (32.86%) risk orientation category.

These findings are in accordance with the findings of Natikar (2001), Budinal (2001) and Deepak (2003).

The risk bearing capacity of an individual depends upon the personal, psychological, socio-economical characteristics. The individual with medium education, more farming experience and land holding, income might have exhibited medium and high risk orientation. The other reason may be that the training provided under BAIF programme frequently to beneficiaries might have increased the perception and confidence of the farmers about new practices and assurance of good yield have influenced to fall under medium risk orientation category. On the other hand about 32.86 percent of respondents had less risk orientation capacity may be due to the facts like less social participation and less exposure to mass media and farming under rainfed condition and uncertainty of getting more yields and income, might have contributed to less risk bearing capacity.

Innovativeness

The data in the Table 6 revealed the innovativeness of beneficiary farmers. About 40.00 per cent of the respondents are very much interested in adopting new practices which are helpful in conserving soil and water, followed by 31.43 and 28.57 per cent of the respondents said 'undecided' and 'disagree', respectively.

Whereas, 50.74 per cent of the respondents expressed their disagreement to the statement i.e., 'hey are not sure of the success of the new IFS practices and like to wait till others adopt'. Followed by 49.26 per cent of the respondents said 'undecided'

While, 60.74 per cent of the respondents said 'disagree' to the statement that, 'IFS practices are not profitable and not interested in any of them'. Followed by 39.26 per cent of the respondents said 'undecided'.

Majority (50.00%) of the respondents said 'agree' about the statement i.e., they try to keep well informed about the improved IFS practices and try to adopt as soon as possible followed by 47.80 and 2.14 per cent of the respondents said 'undecided' and 'disagree', respectively.

Further, 100 per cent of the respondents said 'disagree' to the statement i.e., new IFS practices are not easily adoptable and hence I don't adopt.

An overall view of innovativeness results presented in Table 7 indicated that majority (48.57%) of respondents belonged to medium innovativeness category ,followed by low (28.57%)and high (22.86%) of innovativeness category.

The similar findings were reported by Burman and Gogoi (2000), Natikar (2001), Gandhe (2002) and Ninga Reddy (2005).

The reason for medium innovativeness might be due to the fact that the BAIF organization is conducting regular trainings on various aspects of agriculture and allied aspects by actually involving them in various activities. Hence, the principle of learning by doing might have increased their knowledge level and as a results they might show keen interest in adopting new technologies and hence this kind of result. On the other hand 28.57 percent of respondents belonged to less innovativeness category may be due to the fact that they might be having less education, less land holding and less income.

Extension participation

Majority of the beneficiaries of BAIF had high level of extension participation. The possible reason might be that, because of more number of trainings organized BAIF on various aspects might have motivated the beneficiaries to have more participation and also to get the benefits of developmental programmes and to earn more income in order to bring change in their standard of living.

The results are consonance with the results of studies conducted by Malagi (1995), Sridhara (2002), Ninga Reddy (2005).

Source of information

The data in Table 9 revealed the source of information obtained by the beneficiary farmers. Majority (92.14%) percent of respondents had contact with officials of BAIF organizations regularly for want of agricultural information. Where as 7.86 per cent of the respondents contacted them occasionally. Since the BAIF organization is motivating farmers to adopt IFS approach to increase their farm income by organizing more educational programmes as a result more contact with officials of BAIF organization.

Further, it was seen from the Table 9 that 27.14 per cent of the respondents had consulted Agriculture Assistant Director occasionally, 70.00 per cent never consulted while 2.85 per cent had regularly consulted.

Regarding contact with Assistant Horticultural Officer, 32.14 per cent of the respondents contacted occasionally, followed by 65.72 per cent never contacted, while 2.14 per cent had consulted regularly.

Regarding contact with subject matter specialists of UAS Dharwad, 64.29 per cent had never consulted, while 27.14 and 8.57 per cent consulted occasionally and regularly, respectively.

It is clear from the result that the majority (78.57%) of the respondents had never consulted the private consultants of agriculture, whereas 11.43 per cent respondents contacted occasionally. Further, 10.00 per cent of respondents have consulted regularly.

It was also noticed that, the majority (64.29%) of the respondents never consulted progressive farmers, whereas 33.57 per cent of respondents contacted occasionally. Further, 2.14 per cent of respondents consulted regularly.

It could be observed from the Table 9 that 41.42 per cent of the respondents are not listening radio, 34.29 per cent of the respondents listening radio occasionally, whereas 24.29 per cent of the respondents listening radio, regularly.

Further, 5.72 per cent of the respondents are subscribers of newspaper and are in the habit of reading regularly. While 15.71 per cent of the respondents read newspaper occasionally and remaining 78.57 per cent never read newspaper reading.

From the Table 9, it is evident that, majority (92.14%) of the respondents were not having farm magazine reading habit, remaining 5.00 per cent were reading regularly and 2.86 per cent of the respondents were reading occasionally.

It is clear from the result that 14.29 per cent of the respondents got information by viewing television regularly. About 16.42 per cent of the respondents got information by viewing television occasionally and 69.29 per cent are not viewing television to get agriculture information.

Mass media participation

It is evident from Table 10 that, 51.40 per cent and 30.71 per cent of beneficiary farmers possessed radio and television and 10.00 per cent of respondents were subscribers of newspapers, and 7.80 per cent of IFS beneficiaries were subscribers of farm magazine. Regarding their reading behaviour regular reading of newspaper was observed in 5.71 per cent of beneficiaries, while only 4.29 per cent of respondents regularly read farm magazines, and regular tele viewing of agriculture programme was observed in 21.43 per cent of IFS beneficiaries.

An overall view of mass media participation revealed low to medium participation of respondents. Moreover, average educational qualification of respondents might have contributed to the importance of the mass media as a source to gather information. To be a successful entrepreneur one needs day to day information regarding market behaviour, government policies, technologies available etc. It might have contributed to the above results.

The findings are in line with the findings of Shashidhara (2003) and Vedamurthy (2002).

Organizational participation

The data in Table 11 revealed the organizational participation of IFS beneficiaries. Regarding participation in gram panchayat, it was found that 7.85 per cent of respondents were members and 12.10 per cent were office bearers. Further, 32.14 per cent of the respondents never participated, while 45.72 and 22.14 per cent of respondents had occasional and regular participation, respectively.

Regarding taluk panchayat, 9.28 per cent of the respondents were found to be office bearers of taluk panchayat. Only 5.71 and 20.00 per cent of the respondents had regular and occasional participation, respectively. About 74.29 per cent of the respondents had never participated.

About zilla panchayat, 7.14 per cent of the respondents were office bearers. Majority (92.85%) of the respondents never participated. Whereas, 5.00 and 2.15 per cent of the respondents having occasional and regular participation, respectively.

Regarding participation in co-operative societies, 8.57 per cent of respondents were members and 10.70 per cent were office bearers, while 28.56 per cent of respondents had regular participation followed by 32.15 and 39.29 per cent having no participation and occasional participation, respectively.

About 22.14 per cent of respondents were members and 6.42 per cent of respondents were office bearers of youth club. While, 66.43 per cent of respondents were never participated, following 17.86 and 15.71 per cent of respondents participating regularly and occasionally, respectively.

About 7.14 per cent of respondents were found to be members and 5.00 per cent were office bearers in Raitha Samparka Kendra. Further, 55.00 per cent of respondents had

no participation, followed by 15.71 and 29.29 per cent of respondents having regular and occasional participation, respectively.

Whereas, 15.00 and 21.40 per cent of respondents were found to be members and office bearers, respectively in Raitha Sangha's. While, 47.86 per cent of respondents had no participation, whereas 22.14 and 30.00 per cent of respondents having regular and occasional participation, respectively.

Regarding participation in Mahila Mandal only 4.28 per cent of the respondents were members, while 95.71 per cent of respondents having no participation, whereas 2.86 and 1.43 per cent of the respondents having regular and occasional participation, respectively.

5.2 Impact of Integrated Farming System on the socio-economic status and annual income of the beneficiaries

5.2.1 Impact of integrated farming system programme on the socio-economic status of the beneficiaries

Change in occupation

Table 13 indicates that in case of primary occupation, there was increase in agriculture occupation from 89.29 per cent before to 94.29 per cent after implementation of IFS programme. Remaining respondents were agricultural labourers and it decreased from 10.71 per cent before to 5.71 per cent after implementation of IFS programme.

The percentage of respondents engaged in secondary occupation was high in business increased from 12.86 per cent before to 32.14 per cent after implementation of IFS programme. The percentage in case of respondents in service increased from 1.42 per cent before to 4.29 per cent after implementation of IFS programme. Respondents belong to other occupation were increased from 2.14 per cent before to 7.80 per cent after implementation of IFS programme.

From above findings it was clear that, there was increase in occupation. The reason might be that the BAIF has implemented the IFS programme by creating awareness among the farmers to adopt new practices, which would have created interest on agriculture.

Results are in line with findings of Chandregowda and Jayaramaiah (1990) and Chidananda (1996).

Change in number of houses

It could be observed from Table 13 that, 100 per cent respondents were owned one house before implementation of IFS programme. However, there was an increase from 0.00 to 19.20 per cent of respondents owned two houses after implementation of IFS programme. The probable reason may be due to increased level of income after implementation of IFS programme might have motivated them to construct more number of houses.

Type of house owned

The data presented in Table 13 indicates the number of respondents 4 who owned concrete house augmented to 12 resulting in 5.71 per cent increase from before to after implementation of IFS programme. This increase was also observed in respondents owning mixed tiled with concrete house as it increased from 8.57 per cent before to 15.00 per cent after implementation of IFS programme. In case of tiled roof house, the increased in per cent of respondents from 41.43 before to 51.43 per cent after implementation of IFS programme. In case of roof house, there was decrease from 36.43 to 22.14 per cent after implementation of IFS programme. This decrease was more predominant in case of respondent owning hut house as it decreased from 10.71 per cent before to 2.86 per cent after implementation of IFS programme.

The findings in this study indicated that, majority of respondents after implementation of IFS programme by BAIF could able to improve their house structure. The possible reasons for this level of change may be due to the fact that there was increase in income level after implementation of IFS programme. So, this might have motivated them to change their present house structure.

The results are in line with the findings of Chidananda (1996), Ritu Jain *et al.* (2003) and Arunkumar (2004).

Increase in land holding

It is clear from Table 13 that, there was a slight increase in the percentage of farmers belonging to medium farmers category from 21.43 per cent before to 22.14 per cent after and large farmers remained as same. In case of small farmers there was increase from 37.86 per cent before to 50.72 per cent after. The decrease in the percentage of marginal farmers from 39.29 per cent before 25.72 per cent after implementation of IFS programme.

In rural areas majority of the people still perceive that, expanding agriculture by purchasing land would be the best option as compared to investing on non-land based activities and also they could able to get high income through IFS activities might have made them to go for buying additional piece of land.

The results are conformity with findings of Vasudevarao (2003), Deepak (2003) and Dolli (2006).

Change in irrigation source

Table 13 presents source of irrigation for cultivation of crops which indicates that there was increase in number of farm pond from 0.00 per cent before to 62.14 per cent after implementation of IFS programme and also there was increase in number of wells from 8.57 per cent before to 15.00 per cent after implementation of IFS programme. Similarly, in case of bore well increased from 7.86 per cent before to 13.57 per cent after implementation of IFS programme. The reason might be due to more numbering soil and water conservation activities might have increased the ground water Table and also the farmers can use the water throughout the year and as a result the farm ponds, wells and bore wells increased.

Similar findings were reported by Kulkarni (2004) and Rao (2004).

Change in farm power

The data presented in Table 13 revealed that the percentage increase in the number of bullocks by the respondents having one pair increased from 30.00 per cent before to 52.14 per cent after implementation of IFS programme. It was evident that two pair of bullock owned by the 5.71 per cent respondents after implementation of IFS programme. The respondents owned sprayer increased by 17.80 per cent before to 45.71 per cent after implementation of IFS programme. The respondents owned tractors and power tillers they remained as same before and after implementation of IFS programme.

The reason for this kind of increase in possession of farm power may be due to high subsidy facility and also due to increased income might have motivated them to go for more number of improved implements.

Similar observations were recorded by Changregowda and Jayaramaiah (1990), Chidananda (1996) and Sridhara (2002).

Change in material possession

It could be noted from Table 13 that the respondents having radio increased form 22.14 per cent before to 51.43 per cent after implementation of IFS programme. In case of television owned respondents increased from 10.71 per cent before to 30.71 per cent after implementation of IFS programme. Similar tendency was observed with respect to the per cent of beneficiaries owning one cart increased from 23.57 per cent before to 36.43 per cent after implementation of IFS programme percentage of respondents possessing furniture is increased having 5 to 6 furniture by 1.42 per cent before to 5.71 per cent after implementation of IFS programme. Respondents owning 3 to 4 furniture increased by 10.71 per cent before to 31.42 per cent after. With respect to 1 to 2 furniture has been decreased from 48.57 per cent before to 39.29 per cent after implementation of IFS programme. Percentage of respondents possessing motor bike increased from 1.43 per cent before to 7.86 per cent after implementation of IFS programme. Respondents possessing bicycle increased from 25.71 per cent before to 50.00 per cent after implementation of IFS programme. Owning of other improved agricultural implements 3 to 4 per cent is increased from 4.29 per cent before to 9.29 per cent after implementation of IFS programme. In case of 1 to 2 improved agricultural

implements, there was increased from 16.43 to 4.43 per cent after implementation of IFS programme and nobody is having 5 to 6 improved agricultural implements.

Change in social participation

It could be observed from Table 13 that, the respondents having high organizational participation level is increased from 12.10 per cent before to 23.57 per cent after implementation of IFS programme. In case of medium level of organizational participation category of farmers increased to 17.90 per cent before to 48.57 per cent after implementation of IFS programme and respondents having low level of organizational participation decreased by 70.00 per cent before to 27.86 per cent after implementation of IFS programme. The possible reason for this kind of results may be due to the awareness created by the BAIF about the importance of social institutions and also majority of the respondents are educated, more land holding, income and medium innovativeness all these characteristics might have contributed for this kind of result.

Socio-economic status of beneficiaries before and after implementation of the programme

To know the differences in socio-economic status of beneficiaries before and after the implementation of IFS progranne. The wilcoxon matched pair signed ranks test is chosen because the study employs two related samples and it yields difference scores. The Z value (3.70) indicates the socio-economic status among the beneficiaries increased significantly over a period of time.

As a result of implementation of IFS programme by BAIF, the farmers might have got improvement in dry farming, attained increased yields due to better economic assets. However, the highest economic return was obtained when the farming system approach was followed which were not only due to the higher productivity of the system but also due to the lower cost of production of integrated enterprises. Therefore the integration of related enterprises with the cropping systems can provide substantial gross returns and net returns and also the additional income to the farmers.

Further the socio-economic status was increased to a considerable extent due to the increased infrastructure facilities and the personal factors like educational level, extension participation, economic motivation, more number of innovative farmers and risk bearing capacity would have contributed for the significant increase in the socio-economic status of the farmers.

Impact of programme on the annual income of the beneficiaries

It could be observed from Table 14 that there was increase in income by 29.29 per cent in the respondents belonging to medium income group after implementation of IFS programme. In case of high income group also the income was increased by 3.57 after implementation of IFS programme. In case of semi-medium income was decreased from 35.71 per cent before to 17.86 per cent after IFS programme.

It is very interesting to note that the annual income levels of beneficiary farmers had increased after the implementation of the IFS programme. This may be due to the good work done by the BAIF by making them to adopt IFS approach and as a result it would have contributed for higher yield and higher income. Further, the personal characteristics of the respondents like medium economic motivation of earning more money, innovativeness, risk bearing ability and timely supply of critical inputs and necessary implements might have acted as incentives to the farmers and hence would might have brought change in their annual income level before and after implementation of IFS programme.

The above findings gained support from the studies conducted by Rama Mohan Rao (1996), Chandregowda and Jayaramaiah (1990), Arun Kumar (1998), Sridhar (2002) and Nirmala (2003).

5.3 Different farming systems adopted by BAIF beneficiary farmers

It is observed from Table 15 that highest income has generated due to adoption of agriculture-horticulture-dairy-forestry-vermiculture-forage crops practice with an average income of Rs. 38,000 per annum. This practice was adopted by only 21.43 per cent of the

respondents. But, majority (62.14) of the respondents adopting agriculture-horticulture-dairy-forestry-vermiculture and they are getting an average income of Rs. 35,000 per annum. This level of increase in their income level may be due to the following reasons;. As mango and sapota are commercial crops and there is very good demand during season. Another reason might be that all beneficiaries have raised these fruit crops organically and also the market demand for organically grown mango was very high and BAIF arranged for marketing their produce in city markets. And maintenance of dairy, vermiculture practice also creates employment opportunities to the rural people and also beneficiaries gained considerable income.

5.4 Opinion of beneficiaries about the Integrated Farming System

Table 16 indicated the opinion of the beneficiaries about the IFS programme in the order of priority were; about 70.00 per cent of the beneficiaries expressed that, the IFS practices helped in increasing the returns from farming. Whereas, 68.57 per cent of the beneficiaries expressed their opinion that integrated farming system is not that much costlier. . About 64.29 per cent of the beneficiaries expressed their opinion that integrated farming system programme increase the employment opportunity to the rural people. According to 62.14 per cent of the beneficiaries adoption of IFS practices, resulting they feel very secured. About 57.86 per cent of the beneficiaries said that integrated farming system can provide returns on regular basis. Further, 55.71 per cent of the beneficiaries expressed IFS is more feasible and it also helps rural people to conserve their own resources.

About 54.29 per cent of the beneficiaries felt that the local resources can be effectively utilized in integrated farming system. 52.86 per cent of the beneficiaries felt that income of the beneficiaries will be raised due to more employment opportunity. While, 48.57 per cent of the beneficiaries expressed their views that IFS practices include somewhat risky. About 47.14 per cent of the beneficiaries expressed that, species planted on wasteland increases the productivity of land. Further, 45.00 per cent of the beneficiaries expressed that integrated farming system can provide returns very quickly. While, 41.43 per cent of the beneficiaries expressed their views that IFS practice include some what complexity. 17.86 per cent of the beneficiaries said that IFS programme is more subsidy oriented than development oriented.

The results from above findings revealed that, BAIF is contributing more efforts to fulfill the felt needs of farmers since majority of them expressed good opinion about the IFS programme organized by BAIF.

The similar findings were reported by Khalache *et al.* (1994), Pratap *et al.* (2000), Verma *et al.* (2004) and Singh (2004).

6. SUMMARY AND POLICY IMPLICATIONS

In an agricultural country like India, the average land holding is very small. The population is steadily increasing without any possibility of increase in land area. The income from cropping for an average farmer is hardly sufficient to sustain his family. The farmer has to be assured of a regular income for a reasonable standard of living by including other enterprises.

The future of Indian agriculture depends heavily on the development of appropriate farming system as applicable to resource poor families and as suited to different agro-climatic zones. The endowment of abundance sunshine, long growing season, responsive soil types, combination of surface water, groundwater and seasonal rains offer vast scope for an intensive farming through multiple cropping and diversified farming including animal husbandry, forestry, vermiculture, horticulture, forage crops etc. The challenge is to upgrade technological and social disciplines on a continuous basis and integrate these disciplines to suit the region and the farm families in a manner that may ensured production with stability, ecological sustainability and equitability. Finally, the concept of diversified farming has to be conveyed to the farming community through extension persons.

NGO play a crucial role in mobilizing and motivating the rural poor to take advantage of the on-going projects through their meaningful participation. After independence there are numbering of many NGOs working in the area of rural development. Hence, it is necessary to know the impact of these NGOs on the target groups. The present study is one such attempt to assess the impact of IFS on socio-economic status of BAIF beneficiary farmers. BAIF is a non-government organization working with rural development programmes. Integrated Farming System programme is one which selected for the present study implemented by BAIF. In the present study an attempt is made to study the impact of IFS on socio-economic status of BAIF beneficiary farmers, operating in Dharwad district of Karnataka with the following objectives.

1. To study the socio-economic profile of BAIF beneficiary farmers.
2. To analyse the impact of Integrated Farming System on socio-economic status of BAIF beneficiary farmers.
3. To ascertain different farming systems / enterprises adopted under IFS approach by the beneficiary farmers.
4. To elicit opinion beneficiary farmers about the Integrated Farming System.

The present study was conducted during the year 2007-08 in Dharwad district of Karnataka state. Hubli and Kalaghatgi taluks were purposively selected as BAIF has implemented. This IFS programme in these two taluks. Ten villages were selected by selecting five from each taluk namely Polikoppa, Channapura, Tiramalakoppa, Kurudikeri, Kamplikoppa from Hubli taluk. Surashettikoppa, Sutagatti, Bogenagarakoppa, Kamadhenu, Gangigatti from Kalaghatgi taluka. These villages were selected purposively based on the criteria of maximum number of beneficiaries. The total sample considered for the study was 140.

The data was collected with the help of structured interview schedule. The data were tabulated and analysed by using statistical techniques like frequencies, percentages, mean, standard deviation and Wilcoxon matched pairs signed ranks test wherever suitable. So that the findings could be meaningfully interpreted to draw necessary inferences and conclusions.

The salient findings of the investigation are as follows.

1. It was found that the integrated farming system programme has resulted in significant changes in the overall socio-economic status of BAIF beneficiaries.
2. The IFS practices after intervention of BAIF were agriculture + horticulture + dairy (3.57%), agriculture + horticulture + dairy + forage crops (7.86%), agriculture + horticulture + forestry + dairy + forage crops (5.00%), agriculture + horticulture + forestry + dairy + vermicompost (62.14%), agriculture + horticulture + forestry + dairy + vermicompost + forage corps (21.43%).

3. Major contribution of higher income by adopting the combination of agriculture + horticulture + forestry + dairy + vermicompost + forage corps (average Rs. 38,000/annum) followed by agriculture + horticulture + forestry + dairy + vermicompost (average Rs. 35,000/annum).
4. Impact of BAIF programme on socio-economic status of beneficiaries, reflected that IFS programme had produced positive results reflected by significant differences in Z value. On the whole IFS programme had positive impact on improving the socio-economic status of beneficiaries.
5. It was observed that, the increase in annual income of beneficiaries after implementation of IFS programme.
6. About 51.43 per cent of the respondents belonged to the middle aged group.
7. About 34.30 per cent of the respondents were illiterates.
8. About 50.72 per cent of the respondents belonged to small land holdings.
9. About 56.43 per cent of the respondents had medium level of annual income Rs. 34,001 – 51,000.
10. Majority of respondents had medium (48.57%) of organizational participation.
11. More number of respondents belonged to medium farming experience category (33.58%).
12. About 92.14 per cent of the respondents regularly consulted officials of BAIF organization.
13. About 53.50, 47.80, 40.70 per cent of respondents participated in group discussion meetings, trainings and educational tours, organized by BAIF, respectively.
14. About 51.40 and 30.71 per cent of respondents owned radio and television of which 42.86 per cent were regular radio listeners and 30.71 per cent had regular television viewing behaviour.
15. About 28.56 and 39.29 per cent of respondents participated regularly and occasionally in co-operative society followed by Raitha Sangha's 22.14 and 30.00 per cent had regular and occasional participation.
16. The result revealed that 51.40 per cent of the respondents belonged to medium economic motivation category.
17. It is seen that 48.57 per cent of the respondents had medium risk orientation.
18. About 48.57 per cent of the respondents belonged to medium innovativeness category.
19. Majority 70.00 per cent of the respondents opined that IFS practices helped in increasing the returns from farming.

Implications of the study

1. The study revealed that, there is a positive and significant improvement in their socio-economic status after implementation of IFS programme. Hence, the government and other policy makers may promote the similar or related progranmmes in the rural areas, so as to bring the socio-economic changes in the rural scenario.
2. The extent of participation of beneficiaries in IFS programme was encouraging in all the stages of implementation. Hence, the agencies involved in rural development may use the participatory approach as being successfully used by BAIF.
3. The results of the study revealed that, the IFS programme has made positive and significant impact on increasing their annual income. Hence, the implementation of Integrated Farming System programme needs to be continued and extended in other areas.

4. The study indicated that, the BAIF beneficiaries who attended the programmes organized by BAIF expressed that they are of much useful to them. Hence, the agencies involved in such activities may follow the BAIF approach for better improvement.
5. The study has also revealed the certain positive effects of BAIF on its beneficiaries. The findings revealed that, the BAIF is making concentrated efforts to identify the needs of the beneficiaries and also in developing a suitable programme through technical and financial assistance. This points out that, the financial assistance may be coupled with technical guidance for increasing the standard of living of rural people.

Suggestions for future research

1. There is need to study the sustainability of the identified farming systems under different topographical situations in the long run.
2. Modeling of the identified farming system options to suit a given agro-climatic and socio-economic situation needs to be attempted.
3. The present study was conducted with limited sample size. In order to derive wider generalizations a study could be conducted with large sample size covering more area.

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IMPACT OF INTEGRATED FARMING SYSTEM ON SOCIO-ECONOMIC STATUS OF BHARATIYA AGRO-INDUSTRIES FOUNDATION (BAIF) BENEFICIARY FARMERS IN DHARWAD DISTRICT

Appendix I: Interview Schedule

PART- I

Respondent No.

Date:

I. General information

1. Name of the farmer
2. Village: _____, Taluk: _____, Dist: _____

II. Personal characteristics

1. Age : _____ years
2. Farming experience : _____ years
3. Mass media utilization

Sl. No.	Media	Owner/ Subscriber	Agriculture/ Others	Extent of reading / listening / viewing		
				Regular	Occasional	Never
1.	Radio					
2.	Newspaper					
3.	Farm magazines (name)					
4.	Television					
5.	Any other (specify)					

4. Sources of information

Please indicate from which source you obtain the information about the Integrated farming system.

Sl. No.	Source of information	Frequency of use		
		Regular	Occasional	Never
1.	Officials of BAIF Organization			
2.	Assistant Director of Agriculture			
3.	Assistant Horticulture Officer			
4.	Subject matter specialists UAS, Bangalore or Dharwad			
5.	Private consultants of agriculture			
6.	Progressive farmers			
7.	Radio			
8.	Newspaper			
9.	Farm magazines			
10.	Television			
11.	Others (specify)			

5. Extension participation

Please indicate the extent of participation in extension activity

Sl. No.	Extension activities	Organised by BAIF	Organised by other agency	Extent of participation		
				Regular	Occasional	Never
1.	Group discussion meetings					
2.	Trainings					
3.	Demonstrations					
4.	Argil. Exhibitions					
5.	Krishimelas					
6.	Field visits					
7.	Lectures					
8.	Educational tours					
9.	Others (specify)					

6. Economic motivation

Indicate your response to the following statements. (By making √ mark)

Sl. No.	Statements	Response pattern		
		A	UD	DA
1.	All I want from my farm is to make just a reasonable living for my family			
2.	In addition to making a reasonable amount of profit, the enjoyment of farming life is also important			
3.	I Would invest in integrated farming system practices to the maximum in order to gain large profit			
4.	I don't hesitate to borrow any amount of money in order to run the farm properly			
5.	I hate to borrow money in principle even when it is necessary for purchasing new farm implements			
6.	I avoid excessive borrowing of money for investment in developing soil and water conservation structure			
7.	My main aim is maximizing profit in farming by following improved IFS practices than continuing old practices			

A – Agree, UD – Undecided, DA – Disagree,

7. Innovativeness

Indicate your response to the following statements. (By making √ mark)

Sl. No.	Statements	Response pattern		
		A	UD	DA
1.	I am very much interested in adopting whatever new practices those are helpful in conserving soil and water.			
2.	Since I am not sure of the success of the new IFS practices, I would like to wait till others adopt.			
3.	Since IFS practices are not profitable I am not interested in any of them.			
4.	I try to keep myself well informed about the improved IFS practices and try to adopt as soon as possible.			
5.	New IFS practices are not easily adoptable and hence I don't adopt.			

8. Risk orientation

Please indicate the degree of your agreement to the statements. (By making √ mark)

Sl. No.	Statements	Response pattern		
		A	UD	DA
1.	A farmer should grow large number of crops to avoid higher risk involved in growing one or two crops.			
2.	A farmer should rather take more of chance in making big profits than to be content with a smaller but less risky profits.			
3.	A farmer who is willing to take greater risks than the average farmer usually does better financially.			
4.	It is good for a farmer to take a risks when he knows his chances of success is high in adopting IFS practices			
5.	It is better for a farmer not to try new farming method unless most others have used them successfully.			
6.	Trying of entirely new method in farming by a farmer involves risks but it is worthy.			

A – Agree, UD – Undecided, DA – Disagree

Part-II

Socio-Economic Status

1. Occupation

a) Primary :_____ (agriculture and agricultural labour)

b) Secondary: _____ (business/ independent profession/ cultivation/ Service / other occupation)

2. Type of family

Single /Joint

3. Size of the family

Sl. No.	Name	Relationship	Age	Occupation	Wage/month
1.					
2.					
3.					
4.					

4. Education: Illiterate / can read only / can read and write / primary school / Middle school / high school /PUC/ graduate

5. Number of houses owned: _____

6. Type of house: _____ (hut / roof / tiled roof /mixed tiled with Concrete / concrete)

7. Total land holding (in acre)

SL. No.	Type of land	Area owned	Area leased (acre)		Total area (acre)
			Leased in	Leased out	
1.	Land				
a.	Dry land				
b.	Wet land				
c.	Garden land				
2.	Source of irrigation				
a.	Tank				
b.	Well				
c.	Bore well				
d.	Canal				

8. Farm power

1. Bullocks : _____

2. Power tillers : _____

3. Tractors : _____

4. Sprayers : _____

5. Dusters : _____

6. Others : _____

9. Material possession

1. Bullock cart : _____

2. Radio : _____

3. Television : _____

4. Furniture's (Nos.):_____

5. Improved agriculture implements (Nos.):_____

6. Vehicles for transport

a) Bicycle: _____

b) Scooter / Motor cycle: _____

c) Car: _____

d) Any other (Specify):_____

10. Organizational participation

Sl. No.	Organization	Member / Officer bearer	Extent of participation		
			Regular	Occasional	Never
1.	Gram Panchayat				
2.	Taluk Panchayat				
3.	Zilla Panchayat				
4.	Co-operative societies				
5.	Youth club				
6.	Raitha Samparka Kendra				
7.	Raitha Sangha's				
8.	Mahila mandal				
9.	Any other (specify)				

Part – III

Different farming systems followed by BAIF beneficiary farmers

a) Agriculture

Season	Crops	Variety	Grain yield	Straw yield	Price/ unit	Total income (Rs)	Total Expenditure (Rs)	Net income (Rs)
Kharif								
Rabi								
Summer								

b) Horticulture

Sl. No.	Type of trees	No. of seedlings planted	Net fruit yield trees		Price/ unit	Total income (Rs)	Total Expenditure (Rs)	Net income (Rs)
			Yield	Age				
1.								
2.								
3.								

c) Forestry

Species	No. of saplings planted	Age of trees			Price /unit	Total income (Rs)	Total Expenditure (Rs)	Net income (Rs)
		1 year	2Year	3Years				

d) Dairy

Type of Animals	Number	Total milk production		Price/unit	Total income(Rs)	Total Expenditure(Rs)	Net income(Rs)
		Per day	Per month				
Cows							
Buffaloes							
Cross breed cow HF/Jersey							

e) Vermiculture

Vermicompost production/year in tones	Price/unit	Total income (Rs)	Total Expenditure(Rs)	Net income (Rs)

e) Forage crops

Fodder type	season	Varieties	Price/unit	Total income(Rs)	Total Expenditure (Rs)	Net income (Rs)

Part – IV

Overall opinion of the beneficiary farmers about integrated farming system

Sl. No.	Particulars	Response
1.	Do you feel the IFS practices helped in increasing the returns from farming	Yes/No
2.	Do you think local resources can be effectively utilized in IFS	Yes/No
3.	How do you feel about the degree of complexity of IFS practices	Complex/Simple
4.	How do you feel about the cost effectiveness of IFS practices	Costly/Cheap
5.	Do you feel IFS can provide returns on regular basis	Yes/No
6.	How quick you can get returns from IFS	Quick/Slow
7.	How risky it is adopt of IFS	Risky/Safe
8.	How secure you feel with the adoption of IFS	Moresecured/ Less secured
9.	Whether the IFS programme increases the employment opportunities to the rural people	Yes/No
10.	Species planted on wasteland increases the productivity of land	Yes/No
11.	Whether beneficiaries under IFS programme are more subsidy oriented than development oriented	Yes/No
12.	Income of the beneficiaries will be raised due to more employment opportunity	Agree/Disagree
13.	IFS is more feasible because it helps rural people to conserved their own resources to meet their day to day requirements	Agree/Disagree
14.	Other (Specify)	

IMPACT OF INTEGRATED FARMING SYSTEM ON SOCIO-ECONOMIC STATUS OF BAIF BENEFICIARY FARMERS

MANGALA. B **2008** **DR. K. V. NATIKAR**
MAJOR ADVISOR

ABSTRACT

The present study was conducted in the year 2007-08 in Dharwad district of Karnataka state with a sample size of 140 beneficiaries of IFS programme implemented by BAIF. The data was collected with the help of structured interview schedule.

The results of the study revealed that, the IFS programme has resulted in significant increase in socio-economic status of the beneficiary farmers. The investigation identified that, there was increase in agriculture occupation from 89.29 per cent before to 94.29 percent after implementation of IFS programme. The respondents owning hut house as it decreased from 10.71 per cent before to 2.86 per cent after implementation of IFS programme. There was increase in number of farm ponds from 0.00 per cent before to 62.14 percent after implementation of IFS programme. It could be observed that in case of medium income group it was increased from 27.14 per cent before to 56.40 per cent after implementation of IFS programme. Majority (62.14%) of the respondent's were adopted agriculture-horticulture-forestry-dairy-vermicompost Majority (70%) of the beneficiaries expressed their opinion that IFS practices helped in increasing the returns from farming.

The results on personal characteristics showed that, majority belonged to middle age (36 years), education (illiterates), medium farming experience (33.58%) organizational participation (48.57%), sources of information (officials of BAIF organization), extension participation and economic motivation, risk orientation, innovativeness and mass media utilization belonged to medium level of participation.

The findings revealed that, the financial assistance may be coupled with technical guidance for increasing the standard of living of rural people. The overall goal of the IFS programme was to reduce poverty and to enhance the opportunities to the people in IFS programme through, improved management and sustainable use of natural resources.