Original Article

Contribution of Enterprises of Integrated Farming System Approach in Income Generation among Tribal Farmers of Tripura and their Socio Economic Status

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Abstract

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In India, farmers concentrate mainly on crop production which is invariably subjected to a high degree of uncertainty in income and employment. To sustain the income and productivity, the farmers has to integrate ancillary propositions with crop production. Under such circumstances, it will be required to undertake some land use based enterprises which will complement their existing farming activity to get more income and employment, leading to better standard of living. Such enterprises include crop husbandry, dairy, piggery, backyard poultry, goat keeping, sericulture, etc. The objective of the study is to identify the components of Integrated Farming System, to estimate the percentage of contribution of each enterprises in income generation, to estimate the socio economic status of the tribal peoples and to generate micro level policies. To conclude the work, following independent and dependent variables were taken: Age, Education, Family Education Status, Family Size, Educational Aspiration, Farm Mechanization, Farm Size, Economic Status, Adoption leadership, Scientific Orientation, Risk Orientation, Management Orientation, Orientation towards Competition and Annual Income of farmers. State Tripura, district West Tripura, block Kamalghat and village Shantipara were selected purposively as because there are more number of Tribal farmers and the number of respondents 82 were selected randomly. By analyzing the data with statistical tools, such as, Frequency, Percentage, Mean, Standard Deviation, Coefficient of Variation and Factor analysis, the following results were obtained: Among the component enterprises, contribution of piggery is highest and Forestry is lowest towards income generation of the farmers as all the respondents are tribal people. Socio-Economic profile concludes that most of the villagers are middle aged, have land holding of 1 to 5 acres, studied up to primary school, resides in mixed type of houses and have annual income up to Rs 1,50,000.

Keywords: Annual Income; Productivity; Tribal Farmers; Socio-Economic Status; Integrated Farming System; Enterprises.

Introduction

The Indian economy is predominantly rural and agricultural. Indian agriculture has responsibility of providing national as well as household food and nutritional security to its spilling over millions. Wide spread occurrence of ill-effects of green revolution technologies in all intensively cultivated areas like Punjab and Haryana is threatening the sustainability of the important agricultural production systems and national food security. The declining trend in size of

land holding poses a serious challenge to the sustainability and profitability of farming. The average size of the landholding has declined to 1.16 ha during 2010-11 from 2.28 ha in 1970-71. If this trend continues, the average size of holding in India would be mere 0.68 ha in 2020 and would be further reduced to 0.32 ha in 2030 (Agriculture Census, 2010-11). This situation in India calls for an integrated effort to address the emerging issues. It is imperative to develop strategies and agricultural technologies that enable adequate employment and income generation, especially for small and marginal farmers who constitute more than 80 per cent of the farming community. The integrated farming system approach is considered to be the most powerful tool for enhancing profitability of farming systems. These integrated farming systems required to be planned, designed, implemented and analyzed for increasing productivity and profitability. These systems also need to be socially acceptable, economically viable and eco-friendly. Integration of enterprises lead to greater dividends than single enterprise based farming, especially for small and marginal farmers. It also leads to improvement in nutritional quality of daily diet of farmers.

Integrated Farming (IF) is a whole farm management system which aims to deliver more sustainable agriculture. It is a dynamic approach which can be applied to any farming system around the world. It involves attention to detail and continuous improvement in all areas of a farming business through informed management processes. The International Organization of Biological Control (IOBC) describes Integrated Farming as a farming system where high quality food, feed, fibre and renewable energy are produced by using resources such as soil, water, air and nature as well as regulating factors to farm sustainably and with as little polluting inputs as possible.

Particular emphasis is placed on a holistic management approach looking at the whole farm as cross-linked unit, on the fundamental role and function of agro-ecosystems, on nutrient cycles which are balanced and adapted to the demand of the crops, and on health and welfare of all livestock on the farm. Preserving and enhancing soil fertility, maintaining and improving a diverse environment and the adherence to ethical and social criteria are indispensable basic elements. Crop protection takes into account all biological, technical and chemical methods which then are balanced carefully and with the objective to protect the environment, to maintain profitability of the business and fulfill social requirements.

Indian tribal people play a key part in constructing the cultural heritage of India. They occupy a major part in the history of India as they are considered as the true habitants of India. The tribal people are scattered in different parts of India and they form a considerable number of the population of India. The traditional and cultural distinction of each tribal community has made them distinguishable from each other and their cultural and traditional heritage add colour and variation to the Indian culture as a whole and form a compact culture. Indian tribal people reside in approximately fifteen percent of the country's area. They primarily live in various ecological and geo-climatic conditions ranging from plains, forests, hills and inaccessible areas that perhaps lie dotted in the panoramic Indian terrain. . The forests in the Asian context are part of a cultural landscape linked to livelihood concerns of traditional societies particularly those living close to nature and natural resources (Ramakrishnan, P S, 2007). Sericulture-based Agroforestry Systems (AFS) have great potential for higher returns in the North-Eastern region with sloping and valley-land conditions (Dhyani S K, Chauhan D S, Kumar D, Kushwaha V and Lepcha S T, 1996).

In the north eastern part of India, there is a concentration of a number of tribes. The main tribes of North East India are Aimol, Anal, Angami, Chiru, Chothe, Gangte, Hmar, Kabui, Kacha, Naga, Koirao, Koireng, Kom, Lamgang, Mao, Maram, Maring, Lushai, Monsang, Moyon, Paite, Purum, Ralte, Sema, Simte, Sukte, Tangkhul, Thadou, Vaiphei, Zou, Tripuri, Mog, Lushai, Jamatia, Chakma, Hrangkhal, Khashi, Bodo, Mishing, Reang, Murasingh, Debbarma, etc. Shifting cultivation locally called jhum is an integral part in tribal life of the northeastern hill regions of India and has direct bearing on their socio-cultural systems (Tomar J M S, Das A, Puni L, Chaturvedi O P and Munda G C, 2012). Tripura is a hilly and land locked state located in the south-west extreme corner of the north eastern region of India. The agro-climatic conditions (humid subtropical) are fertile and acidic so good depth and abundant rainfall favour the cultivation of different minor fruit crops (Chandra S, Das J P, 2011). Orissa is one of the most backward states of India with 47% of its population living below poverty line. Forests constitute 37% of the state's geographical area and are the major source of income for the poor, particularly tribes. For most of the tribal households, forests provide essential food and nutrition, medicine, fodder, fuel, thatch and construction materials and non-farm income (Minaketan B, 2009). A work was carried out at Chandel Khullen village of Chandel hill district of Manipur during 2010-11

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to 2012-13. The average holding size of the farmer was 1.33 ha in 2010-11, 1.96 ha in 2011-12 and 2.21 ha in 201213. The tribal farmer adopted seven components, i e crop production, vegetables, fruits, piggery, backyard poultry, fishery and water management as suggested by ICAR Manipur Centre (Ansari M A, Prakash N, Baishya L K, Punitha P, Sharma P K, Yadav J S, Kabuei G P and Levis K Ch, 2014).

Objective

1. To identify the components of Integrated Farming System popular among the Tribal farmers of Tripura.

2. To estimate the contribution of each enterprise of Integrated Farming System in income generation of the tribal farmers of Tripura.

3. To estimate the Socio-economic status of the tribal farmers practising Integrated Farming System in Tripura.

4. To generate a micro level policy from the empirical research conducted under the topic.

Research Methodology

Locale of research; Variables selected; Tools and Techniques of Data collection; Statistical Analysis and interpretation of data.

Locale of Research

♦ Keeping in view agriculturally and socio-economically developing area and the area where most of the villagers are engaged in Integrated Farming System, West District of Tripura was selected for the study.

♦ Kamalghat Block of West Tripura district was purposively selected for the study. This block was selected because the researcher has close familiarity with the area, the people, their culture and the local dialect, which facilitate the study and the process of data collection and the area was also easily accessible to the researcher in terms of transportation and place of residence.

♦ Village Shantipara under the Block kamalghat was selected purposively for the study. The main reason behind selection of Shantipara village was due to the presence of large number of farmers involved in Integrated Farming System.

Variables Selected

Dependent variables selected are Age (x_1); Education (x_2); Family Education Status (x_3); Family Size (x_4); Educational Aspiration (x_5); Farm Mechanization (x_6); Farm Size (x_7); Economic Status (x_8); Adoption Leadership (x_9); Scientific Orientation (x_{10}); Risk Orientation (x_{11}); Management Orientation (x_{12}); Orientation towards Competition (x_{13}). Independent variable selected is the Annual Income of the farmers (y).

Tools and Techniques of Data Collection

The major tool used for collection of primary data in the study was structured schedule and secondary data were collected from the Agriculture Department of Tripura, College of Agriculture Tripura, internet, journals and departmental library.

Statistical Analysis and Interpretation of Data

Main statistical tools used in the study are Frequency, Percentage, Range; Mean; Standard Deviation (SD), Coefficient of Variation (C.V.) and Factor analysis.

Results and Discussion

The Table 1 and 2 represents the descriptive distribution of consequence variables considered for the present study. Consistency of the variables depends upon the percentage of Coefficient of Variation (CV). If the CV value is less than 50%, then the variable is consistent in nature. If the CV value is in between 50% to 100%, then the variable is inconsistent in nature and if the CV value goes beyond 100%, then the variable is highly inconsistent in nature.

Table 1: Descriptive statistics of Independent variables with respect to Mean, Standard Deviation and Coefficient of Variation

Sl. No	Variables	Range		Mean	SD	CV (%)
		Min	Max			
1.	Age (×1)	25	75	48.45	11.44	23.63
2.	Education (×2)	0	5	3.28	1.24	38.10
3.	Family Education Status (×3)	3	21	1.96	3.63	30.39
4.	Family Size (×4)	1	2	1.47	0.50	34.05
5.	Educational Aspiration (×5)	4	10	8	1.45	18.21
6.	Farm Mechanizatio n (×6)	0	10	1.92	2.37	123.35

7.	Farm Size (×7)	1	4	2.02	0.92	45.90
8.	Economic Status (×8)	6	18	10.79	2.80	25.99
9.	Adoption leadership (×9)	13	22	17.36	2.67	15.42
10.	Scientific Orientation (×10)	29	38	33.53	2.13	6.37
11.	Risk Orientation (×11)	28	37	32.32	2.18	6.75
12.	Management Orientation (×12)	69	99	80.74	6.66	8.25
13.	Orientation Towards Competition (×13)	26	32	28.42	2.04	7.18

Table 2: Descriptive statistics of Dependent variables with respect to Mean, Standard Deviation and coefficient of Variance

Sl. No.	Variables	Range		Mean	SD	CV (%)
		Min	Max			
1.	Annual income of farmers (y)	42000	303000	139708.53	57945.38	41.47

Identification of Component Enterprises under Integrated Farming System

The village where the study have been conducted, tribal people are engaged in Integrated Farming System, where one of the main components are pig rearing or piggery. Other components are Agriculture, Horticulture, Dairy, Poultry, Fishery and Forestry. These enterprises are related to each other, such as poultry droppings are used as fish feed, rice bran is used as cattle feed, etc.

Piggery

Piggery is very popular in the state because most of the people are tribal and pork is one of the main food items of the tribal people. There are many undertakings by the Government of Tripura to improve the Piggery section of the state. They are undertaking many training program for the farmers to boost up this enterprise. The main breeds of pig reared in Tripura are Hampshire, Large white Yorkshire, Duroc, Landrace, and indigenous breeds are Mali and Dome. Out of the total piggery of the country, 28% of piggery is found in North East India. Pigs are mainly reared for their meat.

The flooring have a rough finish and of a regular masonary type made up of water proof cement mortar. Proper drains are provided so that the effluents are disposed off. Generally under village conditions the housing are made up of measuring 3 m X 2.4 m or 3 m X 3 m with an open yard of nearly the same dimension or in some cases slightly longer. Walls are of 1.2-1.5 m high from the floor.

Grains, maize, sorghum, oat, millets, wheat and rice are provided as basic ingredients of feed and as because these are easily available. Protein supplements are given in the form of oil cakes, fishmeal and meat meal.

Advantages of Pig Rearing

❖ Pigs convert inedible feeds, forages, certain grain byproducts obtained from mills, meat by products, damaged feeds and garbage into valuable nutritious meat. Most of these feeds are either not edible or not very palatable to human beings.

❖ Pig grows fast and is a prolific breeder, farrowing 10 to 12 piglets at a time. It is capable of producing two litters per year under optimal management conditions.

❖ The carcass return is quite high, that is, 60-80 percent of live body weight.

❖ With a small investment on building and equipment, proper feeding and sound disease control programme the farmer can profitably utilize his time and labour in this subsidiary occupation.

❖ The faeces of pigs are used as manure to maintain soil fertility.

Agriculture

The farmers are mainly involved in paddy cultivation as the staple food crop of this region is paddy. They also cultivate other cereal crops like wheat, maize, fox tail millet, etc. vegetables like potato, tomato, brinjal, gourd, cucumber, chilli, etc are cultivated here. Spices like ginger, garlic, cardamom, turmeric, etc are also cultivated in this region.

Horticulture

Horticultural crops like mango, jackfruit, banana, guava, litchi, ber, lemon, etc are cultivated here. Pineapple is the main fruit crop of Tripura and it is cultivated here in large amount and these are very popular nationwide. They also grow flowers like rose, marigold, hibiscus, etc. for local market.

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Dairy

Cattles are reared here mainly for the milk purpose. The cattle get their feed from the agricultural field, i.e, the left over after harvesting of crops, etc. The milk is used for making ice cream and other milk products and are sold in the market. There is Gomati cooperative milk producers union limited and other institutions, who buy the milk from them and make milk products. Here indigenous breeds of cattles are found but the farmers have attended some training program on Murrah buffalo, Sahiwal and Jersey, which was organized by the ICAR research complex, North East Hilly region, Tripura. So the farmers are engaged in rearing of exotic cattles also.

Goatery

Goatery is also very common in Tripura. Goats are mainly reared for their skin and meat but here goats are reared mainly for meat and sometime for milk in special purposes. Breeds found here are Assam Hilly breed, Tellicherry, Jamnapari, Black Bengal, etc. Here goats are used for sacrificing purpose also in the worshipping of Goddess "kali" in some temples.

Poultry

For poultry there is no need of extra space. They can utilize the corner of the houses to build Poultry sheds. There is a mixture of broilers, layers and local birds. There is both ducks and hens. Breeds found here are Vanaraja, Giriraja, Gramapriya and mostly indigenous varieties. They lay eggs and the eggs are sold in the market as Rs 5 per egg in case of layers and Rs 10 per egg incase of local hen. They get more income from the local eggs. Poultry meat is also very popular here. Poultry also feed on the left over after harvesting and rice brans. Their droppings are used as fish feed. For this sometime poultry sheds are built over the pond.

Duckery

Here Duckery is also practiced along with poultry. Ducks are reared in ponds and the fish get direct feed from the droppings of the ducks. Mainly indigenous variety and Khaki Campbell are reared here. Duck's meat is also popular in this region.

Fishery

Fishery is popular here as there is one College Of Fisheries under Central Agricultural University, near the village. They cultivate both indigenous and exotic fishes like Magur, Catla, Rohu, Grass carp, Silver carp, etc. They get the seedlings both from the market and also from the Fishery college. Villagers use fishing nets such as Fash jal or kanke jal, laitya jal, fy jal, ber jal, etc. They buy fish feed from outside and also use the feeds that are developed through Integrated Farming System, such as poultry droppings, oil cake, neem cake, etc.

Forestry

They grow forest trees also like neem, bamboo, sal, segun, etc., from which they get wood and some are medicinal also like neem. Neem is also used in making neem cake, which are feed to the cattle and fishes.

Therefore it can be concluded that the people of this village are engaged in Integrated Farming System of Agri-Horti-Silvi-Fishery-Pastoral culture.

Contribution of Different Enterprises of Integrated Farming System in income Generation of the Farmers

Different enterprises of Integrated Farming System undertaken by most of the people of the village are Agriculture, Horticulture, Dairy, Poultry, Fishery, Piggery and Forestry. As most of the people are tribal, the earning from the piggery enterprise is of a great amount. They get a handsome amount of money from all these enterprises and the contribution of each of the enterprises in income generation of the farmers is given below.

Table 3: Distribution of Mean of the enterprises

Sl. No.	Component	Mean
1	Piggery	75,520
2	Agriculture	14,020
3	Horticulture	5,580
4	Dairy and Goatery	10,000
5	Poultry and Duckery	9,520
6	Fishery	12,200
7	Forestry	5,550

It is clear from the Table no. 3 that income generation of farmers from enterprises like Piggery, Agriculture, Horticulture, Dairy-Goatery, Poultry-Duckery, Fishery and Forestryis Rs 75,520;

Rs 14,020; Rs 5,580; Rs 10,000; Rs 9,520; Rs 12,200 and Rs 5,550 respectively. As we have already calculated the average income generation of the farmers through interview method, and which is Rs 1,32,390 annually, the percentage contribution of each of the enterprise is calculated.

Table 4: Percentage contribution in livelihood generation of farmers

Sl. No.	Component	Contribution in income generation (%)
1	Piggery	57.04
2	Agriculture	10.58
3	Horticulture	4.21
4	Dairy-Goatery	7.55
5	Poultry-Duckery	7.19
6	Fishery	9.21
7	Forestry	4.19

Table 5: Socio economic profile of respondents

Items	Category	Frequency	Percentage (%)
Age	Young (18-30)	7	8.53
	Middle age (31-50)	42	51.21
	Old age (above 50)	33	40.24
Education	Illiterate	4	4.87
	Read Only	0	0
	Read & write	16	19.51
	Primary	31	37.80
	Middle school	17	20.73
	High school	14	17.07
	Graduate	0	0
Family education status	Illiterate	2	2.43
	Read only	4	4.87
	Read and write	22	26.82
	Middle school	31	37.80
	High sch ool	16	19.51
	Graduate	7	8.53
Family Size	Up to 5 members	78	95.12
	Above 5 members	4	4.87
Land Holding	No land	0	0
	Less than 1 acre	29	35.36
	1 to 5 acre	45	54.87
	5 to 10 acre	4	4.87
	10 to 15 acre	4	4.87
	15 to 20 acre	0	0
	More than 20 acre	0	0
House Type	Kutcha House	16	19.51
	Mixed House	62	75.60
	Pucca House	4	4.87
	Mansion	0	0
Farm Power	No Drought Animals	14	17.07
	1-2 Drought Animals	43	52.43
	Power Tiller/Tractor	7	8.53
	3-4 Drought Animals	18	21.95
Annual income	Rs 500 00 to Rs 100000	12	14.63
	Rs 100001 to Rs 150000	44	53.65
	Rs 150001 to Rs 200000	10	12.19
	Rs 200001 to Rs 250000	8	9.75
	Rs 250001 to Rs 300000	4	4.87
	Rs 300001 to Rs 350000	4	4.87
Material possession	Low (less than 5)	25	31.25
	Medium (5 to 10)	40	50
	High (11 to 16)	15	18.75

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It is clear from the Table No. 4 and Figure No. 1 that the Piggery plays the greatest role in income generation of the farmers by contributing 60.80% of the total income generation. Then the Agriculture sector contributes 10.58% of the income generation. After that comes Dairy-Goatery and Poultry-Duckery which contributes 7.55% and 7.19% of the income generation respectively. Fishery contributes 9.21%, Horticulture and Forestry contributes the negligible amount of 5.45% and 4.19% respectively.

As we have seen that the contribution of Piggery is more in income generation of the farmer, we must undertake some initiatives to boost this economy regarding Piggery. The farmers should be supply with inputs of Piggery from the government such as piglet and feed for the pigs. Proper training should be given on pig rearing. Proper vaccination should be provided to the pigs in order to reduce diseases and incidents of worms, mainly tapeworm.
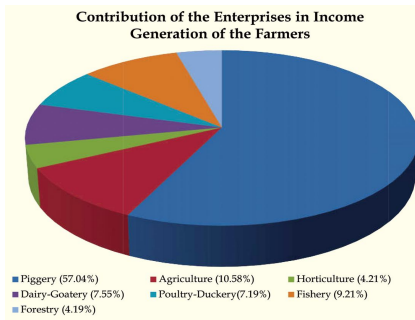

Fig. 1: Percentage contribution of component enterprises of Integrated Farming System approach in income generation of Tribal farmers in Tripura
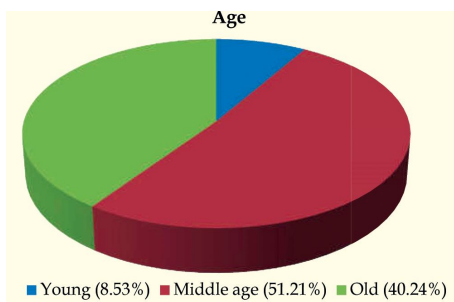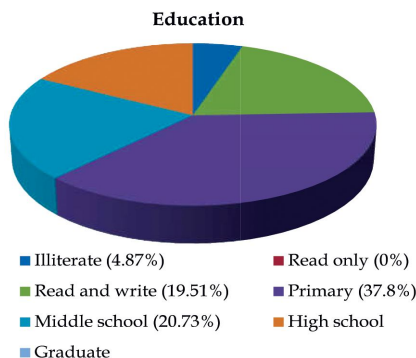

Fig. 2: Distribution of age
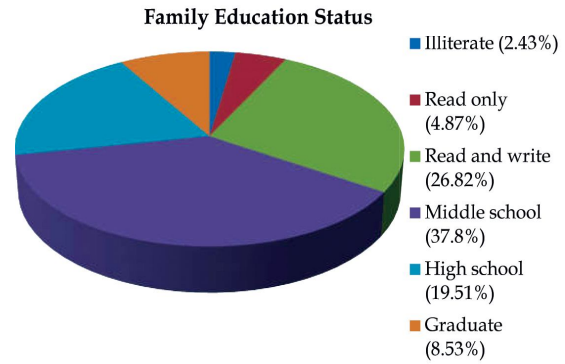

Fig. 3: Distribution of education

Fig. 4: Distribution of family education status
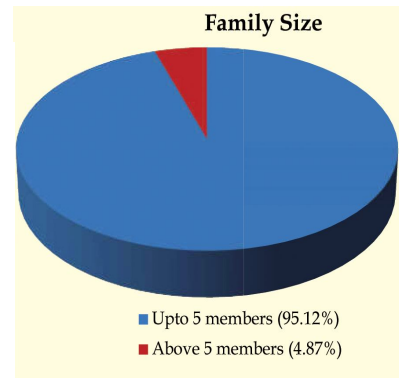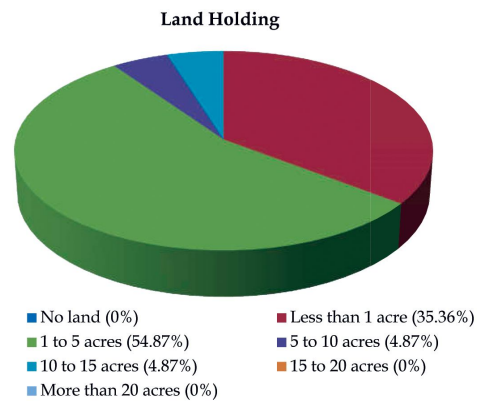

Fig. 5: Distribution of family size
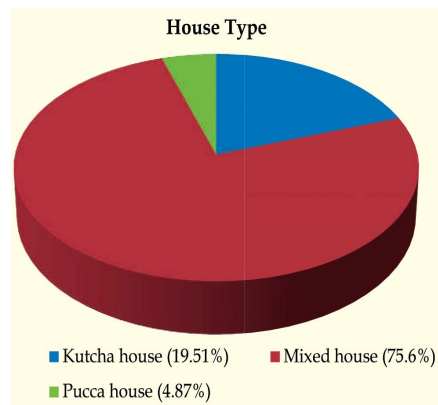

Fig. 6: Distribution of land holding

Fig. 7: Distribution of house type

Material Possession

■ Low (31.25%) ■ Medium (50%) ■ High (18.75%)
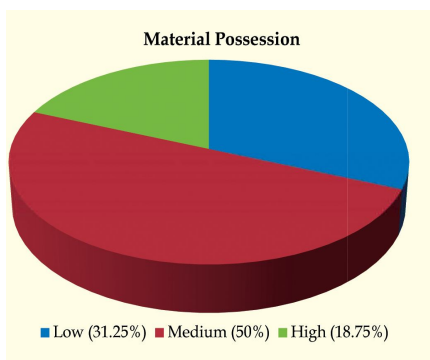
Fig. 8: Distribution of material possession

Farm Power

■ No drought animal (17.07%)
■ 1-2 drought animal (52.43%)
■ Power tiller/Tractor (8.53%)
■ 3-4 drought animals (21.95%)

Fig. 9: Distribution of farm power

The operational conglomeration of exogenous variables into factors

COMPONENTS	VARIANCE CONTRIBUTION (%)	
Factor 1 (Entrepreneurship) X_{11}, X_{12}, X_{13}	15.552	
Factor 2 (Modernity) X_1, X_5 X_{10}	14.028	LEVEL OF INTERACTION
Factor 3 (Resource) X_6, X_7 X_9	11.893	
Factor 4 (Family Capacity) X_2, X_3 X_4	10.091	
Factor 5 X_8	9.537	

X_1 = Age; X_2 = Education; X_3 = Family Education Status; X_4 = Family Size; X_5 = Educational Aspiration; X_6 = Farm mechanization; X_7 = Farm Size; X_8 = Economic status; X_9 = Adoption Leadership; X_{10} = Scientific Orientation; X_{11} = Risk Orientation; X_{12} = Management Orientation; X_{13}= Orientation towards competition
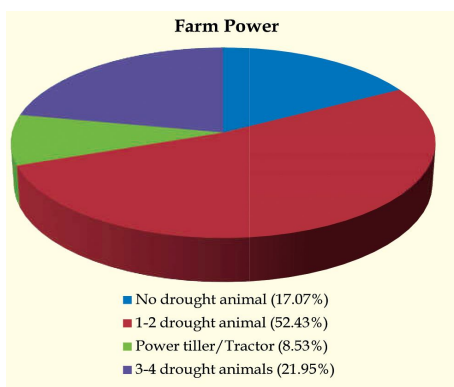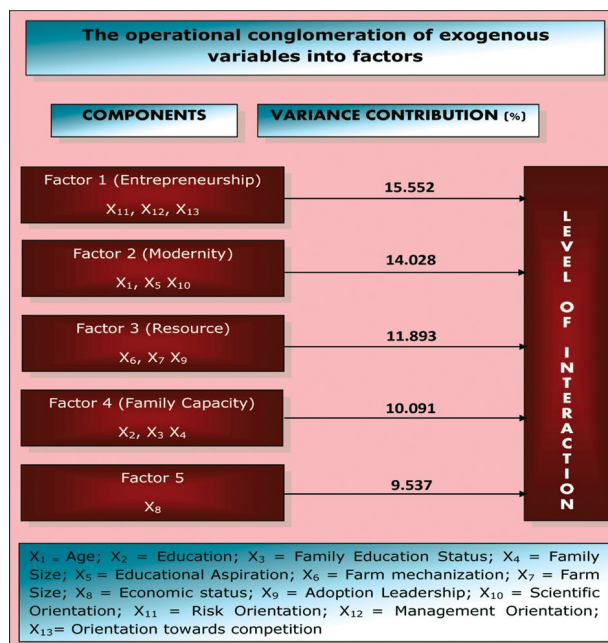
Fig. 10: Distribution of annual income

It is clear from the Table No. 5 and Figure No. 2 to 10 that among 82 respondents or farmers, who were selected randomly, 8.53% of them are young, that is, in between 18 to 30 years of age, 51.21% of them are middle aged, that is, in between 31 to 50 years of age and rest 40.24% of them are old, that is, they are above 50 years of age. Again, 4.87% of farmers are illiterate,

19.51% can read and write, 37.80% received primary education, 20.73% finished middle school and rest 17.07% of them finished high school. In case of family education status, 2.43% of farmer's family members are illiterate, 4.87% of farmer's family members can read only, 26.82% of farmer's family members can read and write, 37.80% of farmer's family members finished middle school, 19.52% of farmers' family members finished high school and the rest 8.53% of farmer's family members received graduation degree. In case of family size, 95.12% of the farmers have family size upto 5 members and 4.87% of them have family size of more than 5 members. Then, 35.36% of the farmers have land size less than 1 acre, 54.87% of them have land size in between 1 to 5 acres, 4.87% of them have land size in between 5 to 10 acres and rest 4.87% of them have land size in between 10 to 15 acres. It has also seen that, 19.51% of the farmers reside in kutcha houses, 75.60% of them reside in mixed houses and rest 4.87% of them reside in pucca houses. In case of Farm power, 17.07% of the farmers have no drought animals, 52.43% of them have 1 to 2 drought animals, 21.95% of them have 3 to 4 drought animals and rest 8.53% of them have power tiller and tractor. Then the Annual income of 14.63% of farmers lie between Rs 50000 to Rs 100000, 53.65% of them have annual income in between Rs 100001 to Rs 150000, 12.19% of them have annual income in between Rs 150001 to Rs 200000, 9.75% of them have annual income in between Rs 200001 to Rs 250000, 4.87% of them have annual income in between Rs 250001 to Rs 300000 and rest 4.87% of them have annual income in between Rs 300001 to Rs 350000. Then at last, 31.25% of farmers have low material possession, 50% of them have medium material possession and rest 18.75% of them have high material possession. Material possession includes materials like radio, cycle, television, color television, bike, car, etc.

It is clear from the Table No. 6 and Figure No. 11 that all the 13 Independent variables have been divided into 5 different factors which has been renamed. Here, Factor 1 consisting of the variables Risk Orientation (x_{11}), Management Orientation (x_{12}) and Orientation towards competition (x_{13}), has been renamed as Entrepreneurship and they together contribute to 15.552% of variance. Factor 2 consisting of the variables Age (x_1), Educational Aspiration (x_5) and Scientific Orientation (x_{10}), has been renamed as Modernity and they together contribute to 14.028% of variance. Factor 3 consisting of the variables Farm Mechanization (x_6), Farm Size (x_7) and Adoption Leadership (x_9), has been renamed as Resource Factors and contribute to 11.893% of variance. Then

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Table 6: Factor Analysis - Conglomeration of 13 variables into 5 factors.

Factors	Variables	Factor Loading	Percentage of Variance	Cumulative (%)	Factors Renamed
Factor 1	Risk orientation (×11) Management orientation (×12) Orientation towards competition (×13)	0.487 0.578 0.673	15.552	15.552	Entrepreneurship
Factor 2	Age (×1) Educational aspiration (×5) Scientific orientation (×10)	0.356 0.625 0.685	14.028	29.580	Modernity
Factor 3	Farm mechanization (×6) Farm size (×7) Adoption leadership (×9)	0.579 0.647 0.467	11.893	41.473	Resource
Factor 4	Education (×2) Family educational status (×3) Family size (×4)	0.473 0.402 0.673	10.091	51.564	Family capacity
Factor 5	Economic status (×8)	0.637	9.537	61.00	-

the Factor 4 consists of variables Education (x_2), Family Educational status (x_3) and Family Size (x_4) and has been renamed as Family Capacity, which together contributes to 10.091% of variance and last of all, as the Factor 5 consists of only 1 variable, that is, Economic Status (x_8) it has not been renamed but it alone contribute to 9.537% of variance.

All the Independent variables have been grouped into different factors and have been renamed because of the convenience of further study in this field.

Conclusion

Integrated Farming System as an approach is flourishing comprehensively and robustly in the economy of Tripura. Huge pile of tribal livelihood and income is generating from it and a belligerent Entrepreneurship has been resulted there with. Integrated Farming System has also got unique property to use residues or leftover of one enterprise for the sake of another enterprise. As an economic approach, Integrated Farming System ushers the prospects of rural and tribal livelihood by incorporating many enterprises both vertically and horizontally and minimize the risk of complete loss in case of crop failure because one enterprise can compensate the failure of another enterprise. Livelihood and income generation of tribal people through Integrated Farming System has been studied within a very short span of time and the collection of information based on the responses obtained from

the farmers have to be relied upon and on the basis of the information obtained, the entire analysis with the help of standard statistical techniques have been done. The present study includes two basic aspects of Income and Livelihood generation of the farmers.

Along with different agricultural enterprises contributing to the income generation through Integrated Farming System, there are other non agricultural components also, such as Age, Education, Family size, Farm power, etc... which consists of Socio-economic status of the farmers, which also influence the Integrated Farming System and income generation of the farmers.

It has also been revealed that, as the Socio-Economic status of the farmer increases, their income generation increases because they can add more enterprise in the farming system. Most of the farmers are middle aged and it is the best period to undertake any new and economic venture and Integrated Farming System is obviously a new approach.

It has also been seen that based on the culture and values of the tribal people of Tripura, most of the tribal farmers are engaged in Piggery and it contributes to the highest livelihood generation because pork is most popular in tribal belt

So, lastly we can conclude that by increasing Piggery based Integrated Farming System and by increasing knowledge base of the farmers through proper education and training program, income, attitude and livelihood generation can be improved because without proper knowledge no farming

system can persist for a longer period. For this the Government of Tripura has already taken some initiatives.

Therefore, income generation of tribal people through Integrated Farming System approach in the North eastern hilly state Tripura, is a complex process, wherein resources like Age, Education, Family Size, Risk Orientation, Farm Size, etc., plays a pivotal role and all these contributory factors need to be customized and configured so that the livelihood and income generation can be improved and sustained.

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