

Socio-economic characteristics of the farmers practicing paddy-cum-fish cultivation in the low lying paddy field of Manipur

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ABSTRACT

The present study was conducted with an objective to study the socio-economic characteristics of farmers practicing paddy-cum-fish cultivation in low lying paddy field of Manipur. This study was conducted on 120 farmers in four village's viz. Wabagai, Hiyanglam, Laphupat, Khoikum under Kakching block of Thoubal district. It was aimed to analyse the socio-economic characteristics of the widespread practice of paddy cum fish cultivation system in low lying paddy fields of Manipur. The study was undertaken during December 2015 to February 2016 and the data pertain of the year 2015. In the present study data was generated through sample survey of farmers by personal interview method using pretested well-structured interview schedule. Random sampling was adopted for the selection of the respondents. The finding of the study reported that the farmers engaged in paddy-cum-fish cultivation have the following parameters with majority of age group showing 36-50 years (65%), general category (65%), nuclear family (60%), family size as above 5 members (85%), education as middle school (25%), occupation as cultivation (48.33%), operational land holding as up to 1 acre (42.50%), housing type as kutcha House (70%), farm power possess of traditional agricultural implements (67.50%), farm material possession as bullock cart & cycle (45%), social participation of member of more than one organization (37.5%), mass media exposure as radio (79.17%), personal cosmopolite with panchayat (45.83%), personal localities with village leaders (40%), medium cost of inputs (between mean \pm S.D), (50%) had low level of scientific orientation and (60%) had a medium level of risk orientation. The study concludes with the remark that understanding socio-economic characteristic of the farmer practicing paddy-cum-fish cultivation can help the extension agents to closely work with the farmers and develop strategies to improve their practices.

Keywords : Socio-economic, paddy-cum-fish cultivation, practice farmers

The paddy-cum-fish cultivation can be practised where paddy fields remain waterlogged for about 3 to 8 months throughout the year Pullin *et al.*, (1989). Halwart *et al.*, (2003) reported that rice-fish farming are very commonly practise in many countries of the world now a day; particularly in Asia. The cultivation of both paddy and fish simultaneously in the same filed is named as paddy fish farming Das *et al.*, (2002). Harvesting of fishes has been practiced since ancient times from the paddy fields as additional crop. Tripathi *et al.*, (1984) reported that in India paddy-fish culture is practised in Arunachal Pradesh, Tripura, Assam, West Bengal, South Bihar, Andhra Pradesh, Tamil Nadu and Kerala.

As far as economics and management of rice-fish farming is concerned, Djajadiredia *et al.* (1980) reported the cost and return ratios of rice-fish farm in Indonesia. In India, the benefit/cost ratios for the combined rice-fish system were studied. Chinese workers, reported fish in the rice-field reduce the rice plant hoppers and leaf hoppers respectively and grass carp (*Ctenopharyngodon idella*) in rice-fields controlled rice sheath blight diseases; Yu *et al.* (1995) reported that 47-51 per cent less stem borers in fish cum rice culture system compared to monoculture of rice. Furthermore, there was reported on larvicidal activity of fish in rice-

field and Yan *et al.*, (1995) reported that growing fish was almost three times more profitable than rice alone. Gupta *et al.* (1998) reported the increase of rice yield in fields with fish in Bangladesh was reported. Further, common carp is the preferred bio-control an agent in the rice-fields was reported by and Halwart *et al.*, (1998). Although, rice-fields are a preferred habitat for murrels, there are hardly any reports from India regarding integrated rice-fish culture using murrel as a candidate species.

Rice fields can be considered as managed marshes biologically, which remain dry for varying periods of time during years. Physically, the aquatic phase has varying water depth according to the land topography and local rainfall patterns and water tables. In its flooded state, the rice field is a rich and productive biological system which can produce a crop of aquatic organisms, both plant and animal, for human consumption in addition to the rice. The ecology of the rice fields in the region is quite diverse, but can be divided primarily into upland, lowland and deepwater rice ecosystems. On the basis of water sources there are two types of field's viz., irrigated and rainfed rice fields. In this region of the country, a fish crop is traditionally raised only from the paddy fields of rainfed lowlands (both shallow and deepwater). In many areas, irrigated rice fields have

also been adapted locally by the farmers to include fish farming. Traditional rice-fish production systems have an important socio-economic part in the life of the farmers and fisherman in the region.

MATERIALS AND METHODS

The study was conducted in four villages *viz.* Wabagai, Hiyanglam, Laphupat, Khoidum with 120 sample farmers from Kakching block of Thoubal district in Manipur. Simple random sampling technique was adopted in studying the farmers. It may be termed as multistage random sampling procedure. The district, block and villages were purposively selected for the study. Seventeen independent variables were taken up in other to study the socio-economic characteristics of the farmers practicing paddy-cum-fish cultivation. The data collected were tabulated and statistical tools like frequency and percentage were used for logical conclusion.

RESULTS AND DISCUSION

The finding on the socio-economic characteristic of Paddy-cum-Fish cultivation farmers in the low lying paddy field of Manipur were presented and discussed in terms of age, caste, family type, family member, education, occupation, operation land holding, house type, farm power, material possession, social participation, mass media exposure, personal cosmopolite, personal localite, cost of input, scientific orientation, risk orientation. The results of the investigation are presented and discussed below with separate tables with frequency and percentage.

Table 1: Distribution of the respondents based on age:

Items	Category	Frequency (N= 120)	Percentage
Age	20-35 yrs	6	5
	36-50 yrs	78	65
	51-65 yrs	36	30
	66 and above yrs	0	0

Analysis of the data from tables 1 on age indicates that two third (65%) of the paddy-cum-fish farmers belong to middle age between 36 to 50 years in first category. (30%) had 51 to 65 years of age were in second category, (5%) 20 to 35 yrs of age were in third category.

Table 2: Distribution of the respondents based on caste.

Items	Category	Frequency (N= 120)	Percentage
Caste	General	78	65
	OBC	42	35
	Schedule Caste (SC)	0	0
	Schedule Tribe (ST)	0	0

Analysis of the data from table 2 on caste indicates that the majority of the paddy-cum-fish farmers (65%) of the respondents were in general category and (35%) were in OBC.

Table 3: Distribution of the respondents based on family type.

Items	Category	Frequency (N= 120)	Percentage
Family Type	Nuclear	72	60
	Joint	48	40

Analysis of the data from table 3 on family type indicates that the majority of the paddy-cum-fish farmers (60%) of the respondents were in Nuclear family category and (40%) were in Joint family category.

Table 4: Distribution of the respondents based on family size.

Items	Category	Frequency (N= 120)	Percentage
Family members	Upto 5 members	15	18
	Above 5 members	102	85

Analysis of the data from table 4 on family size indicates that the majority of the paddy-cum-fish farmer (85%) were above 5 member's category and (15%) of the respondents were below 5 members.

Table 5: Distribution of the respondents based on education.

Items	Category	Frequency (N= 120)	Percentage
Education	Illiterate	20	16.67
	Can read only	18	15
	Can read and write	7	5.83
	Primary	18	15
	Middle school	30	25
	High school	10	8.33
	Higher secondary	14	11.67
	Graduate	3	2.50
	Post Graduate	0	0
	Others	0	0

Analysis of the data from table 5 on education indicates that the majority of the paddy-cum-fish farmers (25%) were middle school. (16.67%) illiterate were in second category of education. (15%) graduate were in third category, (11.67%) higher secondary was in fourth category. (8.33%) high school was in fifth category. (5.83%) can read and write were in sixth category. Only (2.50%) graduate comes in seventh category of education.

Table 6: Distribution of the respondents based on occupation.

Items	Category	Frequency (N= 120)	Percentage
Occupation	Labour	3	2.50
	Caste occupation	6	5
	Cultivation	58	48.33
	Business	26	21.67
	Service	6	5
	Independent profession	21	17.50

Analysis of the data from table 6 on occupation indicates that the majority of the paddy-cum-fish farmers (48.33%) are the cultivator. (21.67%) business were in second category, (17.50%) Independent profession were in third category, (5%) Caste occupation and Service were in fourth category and (15%) of the respondents were below 5 members. Only (2.50%) Labour comes in the fifth category of occupation.

Table 7: Distribution of the respondents based on operational land holding

Items	Category	Frequency (N= 120)	Percentage
Land	No Land	0	0
	Up to 1 acre	51	42.50
	1-3 acre	44	36.67
	3-5 acre	25	20.83
	Above 5 acre	0	0

Analysis of the data from table 7 on operational Land Holding indicates that the majority of the paddy-cum-fish cultivator farmers (42.50%) have up to 1 acre of land. (36.67%) 1 to 3 acre of land were in second category. Only (20.83%) 3-5 acre of land were in third category of Operation land holding.

Table 8: Distribution of the respondents based on Housing type.

Items	Category	Frequency (N= 120)	Percentage
House type	No House	0	0
	Hut	18	15
	Kutch House	84	70
	Mixed House	18	15
	Pucca House	0	0
	Mansion	0	0

Analysis of the data from table 8 on Housing Type indicates that the majority of the paddy-cum-fish farmer (70%) were in kutch house, and (15%) of the respondents were in hut and mixed house of the housing type.

Table 9: Distribution of the respondents based on farm power.

Items	Category	Frequency (N= 120)	Percentage
Farm Power	Traditional Agri. Implements, Bullock cart, Wheel Hoe	81	67.50
	Draught animals, Pump set, Power tiller	23	19.17
	Tractor	16	13.33

Analysis of the data from table 9 on farm power indicates that the majority of the paddy-cum-fish farmer (67.50%) had traditional agri. implements, bullock cart, and wheel Hoe. (19.17%) draught animals, pump sets, power tiller were in second category. Only (13.33%) were having tractors in third with the respondent of the farm power category.

Analysis of the data from table 10 on farm material possession indicates that the majority of the paddy-cum-fish farmer (45%) had bullock cart, cycle. (40%) radio, T.V., mobile or phone, agri. input implement, two wheeler were in second category. Only (15%) were having computer in third with the respondent of the farm material possession category.

Table 10: Distribution of the respondents based on farm material possession.

Items	Category	Frequenc (N= 120)	Percentage
Material possession	Cart, cycle	54	45
	Radio, T.V., mobile or phone, agri. input implement,	48	40
	Two wheeler	18	15
	computer		

Table 11: Distribution of the respondents based on social participation.

Items	Category	Frequency (N= 120)	Percentage
Social participation	No member	2	1.67
	Member of an organization	54	45
	Member of more than one organization	45	37.5
	Office bearer of one organization	19	15.83
	Office bearer of more than one organization	0	0
	Distinctive type	0	0

Analysis of the data from table 11 on Social Participation indicates that the majority of the paddy-cum-fish cultivator farmers (45%) are member of an organization. (37.5%) member of more than one organization was in second category. (15.83%) Office bearer of one organization was in third category. Only (1.67%) were from No member of social participation hold the fourth category of social participation.

Table 12: Distribution of the respondents based on mass media exposure (N= 120)

Items	Category	Frequency	Percentage
Mass media exposure	Radio	95	79.17
	Television	50	41.67
	Educational film	10	8.33
	Newspaper	55	45.83
	Farm publication	5	4.17
	Demonstration	0	0
	Field trips Krishi Mela	0 0	0 0

Analysis of the data from table 12 on mass exposure indicates that the majority of the paddy-cum-fish farmer (79.17%) use Radio. (45.67%) use Newspaper in

second category. (41.67%) use television were in third category, (8.33%) educational film users were in fourth category. Only (4.17%) farm publication holds the fifth category of the mass media exposure.

Table 13: Distribution of the respondents based on personal cosmopolite. (N= 120)

Items	Category	Frequency	Percentage
Personal cosmopolite	ADA	20	16.67
	BDO	10	8.33
	VLW	25	20.83
	Panchayat	55	45.83
	Bank		
	Personnel	5	4.17
	CAU	15	12.50
	Crop Society		
	Personal	0	0
	DGHC	0	0
	PACS	0	0
	Farmers club	35	29.17
	Dealer	45	37.50
	KVK	0	0
	Others	0	0

Analysis of the data from table 13 on personal cosmopolite indicates that the majority of the paddy-cum-fish farmer (45.83%) use to meet panchayat. (37.50%) meet the Dealer in second category. (29.17%) meet the Farmers Club were in third category. (20.83%) meet VLW were in fourth category. (16.67%) meet ADO were in fifth category. (12.50%) meet CAU were in sixth category. (8.33%) meet BDO were in seventh category. Only (4.17%) meet the bank personnel were in eight categories on personal cosmopolite.

Table 14: Distribution of the respondents based on personal localite.

Items	Category	Frequency (N= 120)	Percentage
Personal localite	Friends & relatives	12	10
	Neighbours	42	35
	Village Leaders	48	40
	Others farmers	18	15

Analysis of the data from table 14 on personal localite indicates that the majority of the paddy-cum-fish cultivator farmers (40%) have contact with village leader. (35%) Neighbours were in second category. (15%) other farms were in third category. Only (10%) friends and relatives were in fourth category on personal localite.

Table 15: Distribution of the respondents based on cost of inputs.

Items	Category	Frequency (N= 120)	Percentage
Cost of input	High (>Mean + S.D)	24	20
	Medium (Between mean ± S.D)	84	70
	Low(< Mean - S.D)	12	10

Analysis of the data from table 15 on cost of inputs indicates that the majority of the paddy-cum-fish cultivator farmers (70%) have medium income first position, (20%) respondents holds second position and (10%) of the respondents have least income from other source holding third position.

Table 16: Distribution of the respondents based on scientific orientation.

Items	Category	Frequency (N= 120)	Percentage
Scientific orientation	Low (up to 18)	60	50
	Medium (18 to 20)	48	40
	High (20 and above)	12	10
	Total	120	100

Analysis of the data from table 16 on scientific orientation indicates that the majority of the paddy-cum-fish cultivator farmers (50%) had low level of scientific orientation. (40%) had medium level and only (10%) had high level of scientific orientation.

Table 17: Distribution of the respondents based on risk orientation.

Items	Category	Frequency (N=120)	Percentage
Risk orientation	Low(up to 18)	48	40
	Medium (18 to 20)	72	60
	High (20 and above)	0	0
	Total	120	

Analysis of the data from table 17 on risk orientation indicates that the majority of the paddy-cum-fish cultivator farmers (60%) had a level of medium risk orientation. (40%) had a low level. There were no farmers who had a high level of risk orientation.

The study indicates that the farmers practicing Paddy-cum-fish cultivation with majority (65%) are of middle age group of 36-50 with nearly half of the respondents having operational land holding up to 1 acre. The farmer of Manipur has a bright scope to improve their source of livelihood through increased income and employment generation by adopting the practice of paddy-cum-fish cultivation. One very interesting observation noticed in the study area was that farmers source of information regarding the practice were mostly derived from their neighbours and village leaders. Therefore, the concerned organization needs to address these facts while planning and implementing any developmental schemes and programmes related to rice and fish farmers in the study area. Proper delivery of technology thereby considering available local resources and situation can boost the socio-economic and rural livelihood of the local farmers practicing paddy-cum-fish cultivation in Manipur.

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