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RESEARCH ARTICLE

A Comprehensive Study of Sanjenbam Village, Imphal East District, Manipur: Natural Resources, Agriculture, and Rural Livelihoods

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ABSTRACT

Rural livelihoods in Northeast India are predominantly dependent on agriculture and allied activities, yet their sustainability is increasingly challenged by climatic variability, inadequate infrastructure, and limited access to modern technologies. The present study was undertaken to comprehensively assess the natural resource base, agricultural production systems, livelihood activities, and socioeconomic conditions of Sanjenbam village in Imphal East district, Manipur, with the objective of identifying key constraints and development opportunities for sustainable rural development. Primary data were collected through household surveys, participatory rural appraisal, field observations, focus group discussions, and interactions with village stakeholders, while secondary information was obtained from government records and published sources. The study revealed that paddy cultivation, livestock rearing, handloom weaving, and handicraft production constitute the principal livelihood activities of the village. Livestock and backyard poultry contributed substantially to household income, whereas handloom and Kouna-based handicrafts emerged as important non-farm enterprises, particularly for rural women. Despite possessing abundant natural resources, fertile soils, and a skilled farming community, the village faces multiple constraints including inadequate irrigation facilities, erratic rainfall, poor extension services, limited mechanization, weak market linkages, shortage of quality agricultural inputs, and insufficient access to institutional credit and Government development programs. The study highlights the need for integrated interventions encompassing irrigation development, crop diversification, mechanization, entrepreneurship promotion, value addition, market strengthening, institutional convergence, and capacity building to improve agricultural productivity, livelihood resilience, and sustainable rural development in Sanjenbam village. The findings provide a valuable baseline for planners, policymakers, extension agencies, and development organizations in designing location-specific interventions for rural transformation in the village.

Key words: Agricultural constraints, Manipur, market linkages, participatory rural appraisal, Sanjenbam village, socioeconomic condition, sustainable agriculture

INTRODUCTION

About 70.79% of Manipur's population lives in rural areas. Sanjenbam village is located in the Imphal East District of Manipur, which is 10 km away from the Imphal main city. The village is en route to East of Lamlong market diversion through Lamlong-Top-Tinsid Road. The village is under the Panchayati Raj Institution of Takhel Gram Panchayat, Sawombung Block, Manipur. Climatic condition of the village is very unique as compared

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to Imphal city which is colder and lies between 10°C and 15°C in November month. The village is subdivided into four different parts, *namely,* Sanjenbam Khullen, Sanjenbam Khunou, Sangsabi and Kambongput Panthabi, which are surrounded by scenic, beautiful hills and paddy fields. Even though the village is not very far from the city but their outlook is totally different in every aspect. Pollution is almost nil except the burning of paddy straw and wildfire. Although the village possesses considerable potential due to its abundant natural resources, fertile soils, and experienced farming community, development remains constrained by several challenges. A thorough understanding of the challenges faced by local villagers and assessment of future opportunities and prospects is very much necessary for achieving sustainable growth and rural development. Therefore, a study was conducted in Sanjenbam to generate valuable information that can be effectively utilized by planners and policymakers in formulating and implementing development strategies for the village.

METHODOLOGY

The present investigation was carried out in Sanjenbam village of Sawombung Block, Imphal East district, Manipur, India. Primary data were collected through a baseline household survey using a pre-tested and semi-structured interview schedule. Information was gathered through personal interviews with farmers, livestock rearers, women weavers, handicraft artisans, village elders, Self-Help Group (SHG) members, Panchayati Raj Institution representatives and other key informants. Field observations and village transect walks were also conducted to document the natural resource base, cropping systems, existing infrastructure and livelihood activities. Focus group discussions and participatory interactions with community members were organized to validate the information obtained from individual respondents and to identify the major production constraints and development priorities of the village. Secondary information regarding demographic characteristics, land use, institutional facilities and village profile was compiled from Census reports, Mission Antyodaya records, Government publications and other relevant literature. Information was collected on demographic characteristics, land resources, settlement pattern, natural resources, agricultural production systems, cropping pattern, livestock production, handloom and handicraft enterprises, seasonal livelihood activities, institutional support, gender participation, marketing channels, production technologies, productivity levels, household income, expenditure pattern, benefit-cost analysis and major constraints affecting agricultural production and rural livelihoods. The profitability of selected livelihood enterprises was evaluated using standard farm management techniques. Household income, expenditure and annual cash flow were also analysed to assess the economic condition of representative farming households.





The collected data were compiled, classified and tabulated using Microsoft Excel. Descriptive

statistical techniques, including frequencies, percentages, averages and simple tabular analysis, were employed to summarize the data. Qualitative information obtained from interviews, field observations and focus group discussions was analysed using content analysis to identify the major strengths, constraints and development opportunities of the village. The findings were interpreted to assess the existing livelihood systems and formulate suitable recommendations for sustainable rural development.

FINDINGS FROM THE STUDY

History of the Village

The village was believed to be started settling around 1960s with seven different clans of Meiteis, *namely*, Moirangthem, Yambem, Wahengbam, Sarangthem, Anoubam, Loushambam and Yumkhaibam. Among these clans, Moirangthem is the biggest clan in the village, while Anoubam is the smallest till now. Tribal and Muslim communities were settled in the Southern part of the village, which location is known as Terakhong and Pangal Ingkhol, respectively. Unfortunately, the Muslim community were devastated during the communal riot in 1994. There is a place called Gornagor (Gorgovinda and Bhairov Mahadeva), which is believed to be a sacred place of Meitei community. A small river named Chingoi turel, which was originated from the foothills of Gornagor, flows towards the mid of the village. Agriculture is the main occupation of the village since inception. Natural and organic farming is practiced by default from the early days in the village. Rearing of cattle had been done for use in farming practices such as tillage, puddling, beushening, and transportation. Besides farming practices, cattle products such as dairy, cattle dung, and urine have been the greatest treasure for their livelihood.

Settlement Pattern

The settlement pattern of the village can be described as semi-compact and nucleated. Most of the houses in the village are earthen, made with tin roof and there is a working shed in most of the houses which locally called as "Sanggoi." Around 10% of pucca houses were also found in the village. The village is surrounded by hills in three sides, with plenty of paddy fields. Some of the villagers migrated to other places near Imphal city, and some houses were found to be newly immigrated and settled in the village. Connectivity of roads is good and its convergence is very fast in the recent past 4–5 years.

DEMOGRAPHIC DETAILS

Sanjenbam village lies at a latitude of 24.8184763°N and longitude of 94.0281992°E with an altitude of 738m above MSL. The adjoining villages of Sanjenbam are Takhel on the East, Kharasom on North, Tinsid (Top) on West and Terakhong on South. From the census report of 2011, Government of Manipur, the village has a total population of 3594, of which 2292 are males while 1302 are females, with a sex ratio of 568 females for every 1000 males. Moreover, according to the Mission Antyodaya (ACT) 2019 report, the village covers an area of 198 hectares and has a total population of 2402, of which 1206 are males while 1196 are females, with a sex ratio of 991 females for every 1000 males. The number of households in the village is 525, and it has a literacy rate of 87.60%.

RESOURCES AVAILABLE

The main resources available in the village are land, skilled labor, forest products, pasture land, Chingoi River, livestock products, well available of indigenous seeds or local cultivar and ponds. There are four numbers of agricultural machineries in the village for paddy cultivation.



MAJOR TRADITION AND FESTIVALS

The villager follows both Hinduism and Sanamahi religion. The village similarly observed and celebrated all the festivals of Manipur except Chingoi Baruni, which is regarded as the biggest festival of Sanjenbam and usually observed in the month of March and April. In this festival, people from all over the state come and climb the *Nongmaiching* hill in night time to get rituals from the God, *Nongpok Ningthou*.

SEASONALITY CALENDAR

A seasonal calendar is a participatory tool to explore seasonal changes. Seasonal calendars are useful for evaluation as they can help analyse time-related cyclical changes in data. The seasonal calendar of the village can be discussed in terms of cropping and festival. From October month, cultivation of *Rabi* crops such as potato, cabbage, pea, onion, and garlic has been practiced in each kitchen garden. *Rabi* crops are followed by *Zaid* crops such as watermelon and tomato, and then *Kharif* crops paddy, cucumber, beans, pumpkin, etc. are cultivated seasonally. There is one occasion in the month of May in which celebration is carried out in the name of *Nongpok Ningthou*, a local God of the region. This festival is known as *Lai Haraoba.* Baruni festival is observed in the month of March and April.

EXISTING INSTITUTIONS

Based on the baseline survey conducted, the village has four numbers of lower primary and a Government-aided High school. There is an office of the Village Level Federation, which is the principal body of 14 SHGs of the village. A health and wellness center serves medical support to the entire villager. Besides these, a forest beat office is also there to check the illegal transportation of forest produces. Around seven Anganwadi centres were established in the village till now. Langei is a place in which the start-up plan was established with a dream to generate employment to the entire village in the field of handloom and handicrafts and rearing of livestock. There is one Information Technology Centre inside the campus of Langei named TechZone Skill Solution.

INTERDEPENDENCE

All the social and community works have been discussed with elderhood of the village before implementing. Four parts of the village, that is, Khunou, Khullen, Kambongput and Sangsabi, have mutual understanding and support in performing livelihood activities. There is no farm machinery for reaping and threshing paddy in the village of Sangsabi and Kambongput so they hire from the adjoining village Sanjenbam Khullen, and Khunou. There is only one vehicle stop/stand for the village. Women folks and men folk of the village help each other in doing household activities and other livelihood activities. Both woman and man of a family have earned money through different livelihood activities; it may be weaving, farming and building work.

GENDER RELATIONS

The village follows a primitive culture of society in which males are believed to be the head or dominant person of a family. They are given more importance than women in every field like games and sports, education, and social work. Women involved in all the household work, and men are the main earner of the family. However, elderly women participation in community and social work is high in the area. There is high inter discipline respect and corporation among the members of the village. There are three transgenders in the village; they also get mutual respect and understanding among the villagers. Some families have been found out that women are the main earner of the family where men are addicted to drugs and alcohol.

With broad observation, it can be concluded that both female and male of the village contributed equally to the family for their livelihood. The main issues of the village are lack of irrigation facility, drinking water, educational institution and health center. Moreover, the village is lagging behind in terms of linkages with line departments and related schemes and project of the State and Central Government.

PRESENT LIVELIHOOD ACTIVITIES OF THE VILLAGE

Understanding the socioeconomic condition is through comprehending the livelihoods of

the people. Livelihood is directly related to an individual's skills, knowledge, and income status (Islam and Mustaquim, 2014). Based on the survey conducted in the village, it has been observed that cultivation of paddy, rearing of livestock, weaving, and handicraft products made from locally available resources are the most prominent activities being carried out by the villagers for their livelihood. Paddy is the main crop which is widely cultivated in the village during *Kharif s*eason. The entire villager regardless of gender, contribute their time and work for the cultivation of paddy, which starts from June till November. Majority of the paddy farmers in the village used indigenous seed of local cultivars being preserved with traditional techniques. Only 6 farmers of the village grow improved high-yielding varieties RC Maniphou – 13 and CAU-R1 procured from ICAR and CAU, Imphal, and 2 farmers cultivates hybrid paddy being received from the Department of Agriculture, Government of Manipur. Livestock and poultry sector plays an important role providing livelihood improvement of the villagers. Around 80% of the household in the village reared cattle because of their huge importance in the agricultural domain, namely, ploughing, cattle manure, etc. The villagers reared mostly indigenous cattle breeds due to the belief that they have better disease resistance than exotic breeds, more suitable for low-input management, survives better in local environment. They maintained the quality of the breeds by procuring within and nearby village. Egg and poultry meat production in the village is largely dependent on backyard farming with indigenous chicken breeds, as it is a low-cost and self-sustaining farming system which is least dependent on external inputs. The villagers reared local poultry and exotic breed as a secondary source of income, and they maintain the breeds in the backyard farming system. Most of the women in the village weaved *Phanek Mayek Naiba, Phige Phanek and Rani Phi*. These products are well demanded and easy to market. Some of the men folk do masonry works. Number of people who holds Government job is very less in the village.

PROCESS OF PRODUCTION AND TECHNOLOGY USED

Rice is the major staple food and a mainstay for the people of Sanjenbam village and their food security. It is most abundantly grown in low-lying areas of most part of the village. The villagers grow indigenous local cultivars, namely, *Dharam, Thoibi Phou, Akut Phou, Taothabi,* etc. The farmers depend totally on rainwater for cultivation of paddy, and prolong mid-season or late droughts during the critical growth stage resulting in considerable loss to the farmers. During the *Kharif* season, most of the paddy growers in the village raised paddy nursery starting from the last week of June and transplanted in the month of July till mid-August. Most of the farmers go for direct seeding, called as *Pamben* in the local language. The rural farmers are not well aware about the quantity of seed rate to be used; thus they soak excess of untreated seeds 140 kg/ha which is more than the recommended dose of 100 kg/ha by broadcasting method. Two to three manual weeding is operated in the field. Due to scarcity of water at critical growth stages of paddy, the percentage of chaffiness in grains and infestation of stem borer were mostly observed. At present situation, they used farm mechanization like a reaper and paddy thresher for harvesting of paddy. Some percentage of paddy grains were also lost during the harvesting procedure as they go for cutting of crops at the full maturity stage. The farmers are quite well trained to day-to-day care, selection of breeds and raising of livestock since all the members of the family learned from their ancestors. The cattle are fed with paddy straw stock in their sheds with powdered rice husk (*Chenkup*) procured from local rice mills. It has been observed that the village has huge areas for cattle grazing; thus they release the cattle in fields for grazing after the harvest of *Kharif* crops. Every household reared poultry and duckery for meat and egg purpose as a secondary source of income. They kept the local poultry birds in sheds made of locally available bamboos in a backyard rearing system. Fortunately, the farmers are aware of vaccination of their livestock from the past experience that were severely impacted due to occurrence of seasonal diseases. Thus, some identified local headman or workers of the village used to contact the local veterinary dispensary office every year for organising mass vaccination programs to maintain better health and welfare of livestock.

Weaving plays a major role in supporting the livelihood of rural people and also helps in alleviating poverty in the rural areas of India

(Boruah *et al.*, 2021). Around 70–80% household of the village have a loom. Weaving is mainly done by females in looms purchased from local carpenters. The process of weaving is very unique and amazed to see the females sat on the loom late night to bring out beautiful patterns on the yarn and the embroidery works is created during the weaving. The women weavers form small SHG groups to get beneficial schemes provided by the Government. The weavers designed and produced *Phanek Mayek Naiba, Phige Phanek and Rani Phi,* which is the most popular outfit of ladies worn during traditional ceremonies.



The village is known for its excellent handicraft works. Many locals of the village are earning their livelihood through indigenous crafts, especially made from wild water reed locally known as *Kouna*. The craftsman of the village procured *Kouna* from the locality and other different areas.

PROBLEMS FACED BY VILLAGERS IN PRODUCTION AND INPUT ARRANGEMENT

Soil moisture stress due to less and erratic rainfall during paddy cultivation is the major problem faced by the majority of the farmers in the village. Unavailability of fertilizers during the cropping season, high prices, and counterfeit issues of fertilizer are the big challenges faced by farmers. The high prices of fertilizer available in unauthorized dealers have increased their total cost of production and hence reduce the benefit-cost ratio. Low yield from monocropping, leading to less additional annual income per unit area in rice production, is also one issue of the farmers. High temperature during crop production, scarcity of labor during peak periods, diversion of farmers from rice cultivation, involvement of middlemen and distress sale were also found important production constraints faced by rice cultivation farmers (Phenica *et al*., 2018). Due to the location of the village in a remote area away from Imphal city, the transportation cost for purchasing of other agricultural inputs required for rice production is also very high. There is not a single agriculture retail outlet in the village, and hence the majority of the farmers grow indigenous rice cultivars. The village has a smaller number of farm machineries required during the initial stage of rice cultivation for ploughing and leveling. High cost is incurred in manual weeding as they do not have the knowledge about the use of herbicides. The paddy growers of the village faced threats from the incidence of diseases and infestation of insect pests, which leads to a drastic reduction in yield of rice. Farmers of the village do not have up-to-date information about the market price and linkage, making them dependent on middlemen, which often results in price fluctuations and lower returns for their produce. Other constraints faced by farmers in rice production were poor extension services, lack of information and lack of helpfulness from local authorities or the government.

Climate change is the main threat of the farmers in the sector of livestock. The increase in climatic variability increases the risk of livestock production as well as reduces the ability of farmers to manage the risks. It impacts greatly on spreading of diseases vectors. Due to poverty, the farmers of the village could not construct adequate and hygienic infrastructure for the livestock. One major problem faced by farmers in livestock production is the severe feed and shortage of fodder. Due to poor extension services in the village, the farmers do not have knowledge about the supplementation of mineral mixture and vitamins in animal diets. Lack of knowledge about the introduction of new improved breed of livestock in the village is also one important factor for low milk production in cows, meat and egg production in poultry sector. Lack of systematic

information or communication channel and inaccessibility to credit and insurance schemes provided by the government also affects the farmers in the production of livestock.

Untimely availability of raw materials is one of the major problems faced by farmers in weaving. Due to high transport cost for procuring of raw materials, the female weavers of the village could not get profitable price of the produces. The weavers could not convert their business of weaving commercially as there is lack in working capital. The weavers do not have any marketing skills thus, they sold their produce in a less margin price. There is also a lack of knowledge among the female weavers of the village regarding availing of loans sanctioned by the government. Laboriously production of traditional textile by hand is a main constraint for less production of the products. Weavers in the village use hand-operated looms that require the weavers to sit at the looms for long work hours, which leads to the risk of *musculoskeletal* disorders, predominantly lower back pain and other related health issues like poor vision, early occurrence of cataract, heart problems, high or low blood pressure, etc.

Even in the handicraft sector, there are a lot of problems faced such as shortage of raw materials, unavailability of technical machinery, poor marketing linkage, high transportation cost, health hazard issues due to manual working for long duration, no improvised training skills provided from any organization, no provision of necessary financial or technical assistance, lack of innovative design and marketing skills, recurrent price fluctuation of the products, role of middleman or cartels.

PRESENT PRODUCTIVITY STATUS

Sustainable increased rice production in the near future requires substantial improvement in productivity and efficiency. The present status regarding production of rice cannot meet the demand due to the reduction of cultivable land every year. Therefore, there is an urgent need for higher productivity of rice in the village. The present productivity status of livelihood activities of the village is shown in Table 1.

Data presented are collected from twenty respondents of the village.

Table 1: Present productivity status of paddy, livestock produce, weaving and handicraft items of Sanjenbam village

Sl. no.	Activity	Particulars	Productivity				
			Yield (kg/ha)	Meat (kg/ animal or bird)	Milk (Liter/day)	Egg (Nos. in a year)	Nos./ month
1.	Paddy cultivation	Local cultivars	3600	-	-	-	-
2.	Livestock	Cattle	-	-	1.50	-	-
		Piggery	-	95	-	-	-
		Poultry	-	2.75		215	
3.	Handloom products	*Phanek Mayek Naiba*	-	-	-	-	5
		Phige Phanek	-	-	-	-	4
		Rani Phi	-	-	-	-	2.50
4.	Handicraft	Kouna Bag	-	-	-	-	60
		Kouna Phak (Mat)	-	-	-	-	6





WHERE THEY SALE

The products obtained through different livelihood activities are sold in local markets as well as in other main markets such as Lamlong Bazar, Khwairamband Bazar, and Thangmeiband. Marketing of the produce or products is relied on the type of activities, as for instance, paddy is sold to retailers coming from different areas. Paddy is sold directly or in the form of rice after process in the local rice mills. While the livestock products are being sold in the locality as well as in adjoining nearby villages. Pigs are being traded to Lamlong and Sawombung market where pork market is well established. If the poultry are reared in large scale and excess milk of cattle is obtained in the village, then its products are being marketed to other places. Nowadays, cattle dung and poultry litter are also in huge demand for used as manure in crop production and are easily marketed to other areas where livestock rearing is negligibly practiced. Most of the handloom and handicraft products are being sold through contract dealers mostly from Imphal town.

THE RANGE OF MARGIN EARNED IN THE ACTIVITIES

Earning through different livelihood activities gives a variable profit depending on the methods and inputs acquisition. Cultivation of paddy spends a lot of money in practicing different activities from tillage to harvesting. When they sell the produce, they get a small margin of profit. It was stated through a survey that farmers get a net profit margin ranging from Rs.4,000/- to Rs.5,000/- from paddy cultivation in one sangam (0.62 acres) area in an optimum monsoon year. It was recorded that poultry produce gives an average net return ranging from Rs.20,000/- to Rs.25,000/- selling meat and eggs from rearing of 100 number of birds. Piggery gives a large profit if the feeds are given from locally available waste and fetch a net return ranging from Rs.20,000/- to Rs.23,000/- per pig. *Phanek Mayek Naiba* gives a margin of Rs.800/- to Rs.1,000/- while *Phige Phanek* lies in the margin of Rs.4,000/- to Rs.5,000/- profit and *Rani Phi* earns a net profit ranging from Rs.10,000/- to Rs.12,000/-. It was observed that there is a lot of variability in the net profit earned from *Rani Phi* due to different quality and designs embroidered in the textiles.

GAPS IDENTIFIED IN ONE OF THE PROMINENT LIVELIHOOD ACTIVITIES

One of the prominent livelihood activities of Sanjenbam village, observed during the study, is in the field of agriculture, predominantly paddy cultivation. All the villagers turn their face into farming of paddy cultivation when the peak time starts on the month of May–June. The onset of monsoon brings the season for cultivation of paddy. Sanjenbam village has all the factors required for paddy to grow, namely, climatic condition, soil type, input materials, etc. The only factor which hampers the work and mind of the farmer is the unpredicted and erratic rainfall. At this point of time, farmers need a good irrigation system. There is no irrigation facility in the village till now. The fate of paddy cultivator is decided by the seasonal monsoon of a year.

The village has found abundant resources, but there are many things still lagging behind the modern era of cultivation due to many factors such as communication gap with related line departments, monocropping, lack of irrigation facility, inadequate time, poor transport facility, lack of education, lack of market linkages, less participation in training and awareness program, and no knowledge about entrepreneurship skills. As per discussion with villagers, it was known that informal education and extension work such as awareness, training and interaction program are not organized in the area except two or three times in the last decade. Due to lack of awareness and poor education of the villagers, they do not have proper knowledge to approach the concerned line departments like KVK, District Agriculture office, Horticulture Department, Veterinary Department, ICAR Manipur, CAU Imphal, etc. No agriculture retail outlet and Agri clinic in the village and adjoining areas is also one of the factors for farmers which restricts them to follow scientific cultivation practices. Lack of education makes them scare and carry a fear mindset in every work which is out of the field.

COST-BENEFIT ANALYSIS OF TWO LIVELIHOOD ACTIVITIES OF A FAMILY

Shri Ngairangbam Kenedy Meitei is the head of the family. He has an area of 2.50 Sangam (1.55 acres) of agricultural land. He practiced subsistence farming through kitchen gardening. He also reared kuroiler birds for domestic purpose. The annual cost-benefit analysis of paddy, products from wild water reed of the Shri Meitei family is as shown below in Tables 2 and 3. The annual income and expenditure pattern and annual cash inflow and outflow of the family are highlighted in Tables 4 and 5.

Table 2: Annual cost-benefit analysis of paddy production of 2.5 Sangam (1.55 acre)

Sl. no.	Particulars	Total cost (Rs.)
a)	Variable cost	
1.	Hired human labor	8000
2.	Hired machinery charges	12850
3.	Seeds	500
4.	Fertilizers	2758
5.	Irrigation charges	4000
6.	Plant protection chemicals	1000
7.	Miscellaneous	1000
8.	Interest on working capital @6%	1806
	Total variable cost	31914
b)	Fixed capital	
1.	Depreciation on farm implements	250
2.	Land revenue	100
3.	Rental value of own land	3037
4.	Interest on fixed capital @12%	438
	Total fixed cost	4095
	Total cost (a+b)	36009

Table 3: Cost-benefit analysis of wild water reed (*Kouna*) bag production (per month for production of 50 bags)

Sl. no.	Particulars	Total cost (Rs.)
a)	Variable cost	
1.	Wild water reed (10 bundle)	4000
2.	Hired human labor	5000
3.	Transportation	1000
4.	Coloring	1000
5.	Miscellaneous	200
6.	Interest on working capital @1%	112
	Total variable cost	11312
b)	Fixed capital	
1.	Depreciation on crafts tools	100
2.	Interest on fixed capital @12%	12
	Total fixed cost	112
	Total cost (a+b)	11424

Total yield of Paddy = 42 Phoubot =3150 kg (1 Phoubot = 75 kg of paddy) = 78.75 Mann (1 Mann = 40 kg)
Total value of the output = 78.75 × 700 (1 Mann of Paddy = Rs. 700)
= Rs. 55125
Net return = Gross return - Total input cost
= Rs. 55125–36009
= Rs. 19116
B: C ratio = Gross return ÷ Total input cost
= 55125÷36009
= 1.53.
The finding of B: C Ratio is greater than one, that is, 1.53, which indicates that paddy cultivation is profitable and gives a positive return to the family.
Total value of the product = 50 × 380 = Rs.19000
Net return = Gross return - Total cost
= 19000–11424
= Rs.7576
B: C ratio = Gross return ÷ Total cost
= 19000÷11424
=1.66.

Table 4: Annual income and expenditure pattern of the family

Source of income	Amount (Rs.)	Items of expenditure	Amount (Rs.)
Farming	19116	Cereals	32400
Off-farm	90912	Non-cereals	42000
Non-farm	114000	Fuel	5000
		Electricity	6000
		Phone recharge	6000
		Clothing	5000
		Intoxicant	10000
		Luxuries and durable goods	15000
		Education	27500
		Medical	5000
		Ceremonial and entertainment	20000
		Repairs and renewals	5000
		Miscellaneous	3000
Total income	224028	Total expenditure	181900

Table 5: Annual cash inflow and outflow of the family

Particulars	Amount (Rs.)	Particulars	Amount (Rs.)
Total net income	224028	Total consumption expenditure	181900
		Previous debt and interest payment	36000
Total cash inflow	224028	Total cash outflow	217900

The finding of B: C Ratio is greater than one, that is, 1.66, which indicates that the wild water reed bag is profitable and gives a positive return to the family.

The above Table 5 shows the total annual net income and expenditure of the family. The annual net income and expenditure are Rs. 224028 and Rs. 181900, respectively.

Now, we can also calculate the net cash flow of the family

Net cash flow = Total cash flow - Total cash outflow
= Rs. 224028–Rs.217900
= Rs. 6128.

Even though the net cash flow of the family is positive, the margin is small and income of the family does not flow evenly throughout the year. Therefore, the family has faced difficult times to manage the household expenditure. To cope up such situations, the family borrowed money from friends and relatives with high interest rate.

CONCLUSION

After thorough discussion with the farmers of the village engaged in the agriculture sector, it was concluded that a good linkage from the ground or field level to the village level, which includes farmers, family, locality, social workers, panchayat members, and Pradhan, is the need of the hour. The farmers should try to shift the present monocropping system of cultivation to crop intensification and diversification. There should be a Participatory Rural Appraisal in the village to develop and empower the villager in every field. They should invite certain line Departments to strengthen the poor extension services presently facing by them. There is a need of the farmers to reduce the technological gap between the agricultural technology and its acceptance by the farmers on their field. The farmer should gather information to avail proper financial assistances or subsidies from related organizations to solve their problem regarding non-availability of timely farm inputs and machineries in the village. Establishment of a village-level Custom Hiring Centre (CHC) to provide access of farm machineries, implements and equipment required for crop production at a subsidized rate. In addition to this, CHC will help in reducing the cost of cultivation and time consumption.

Farmer should cooperate and seek the help of local MLA, Pradhan and Village executive member to enhance the development of irrigation infrastructure, strengthening community-based irrigation management through Government schemes like Pradhan Mantri Kishan Sinchayee Yojana. Watershed management projects such as Integrated Watershed Management project/Hariyali Project and Integrated Watershed Development Programme must be implemented with the full participation of the local people. To ensure physical access of water on farm and expand cultivable area under assure irrigation, ponds, canals and check dams should be restored in the village under the National Rural Employment Guarantee Act. To solve the problem of extreme water scarcity during the month of October to April, micro rainwater harvesting structures (*Jalkund*) should be introduced and installed in the village so as to provide protective irrigation and enable crop cultivation during *Rabi* season. The local farmers should try to gain information and registered themselves under the Pradhan Mantri Fasal Bima Yojana scheme launched by the Ministry of Agriculture and Farmers Welfare, New Delhi so as to provide a comprehensive insurance cover against failure of the crop due to climatic aberrations. The village-level workers should try to bring various programs and schemes under the Department of Agriculture and Horticulture, Govt. of Manipur, namely, National Food Security Mission, Rashtriya Krishi Vikash Yojana, Cluster Frontline Demonstration, All India Coordinated Rice Improvement Programme, Agricultural Technology Management Scheme, Mission for Integrated Development of Horticulture, Mission Organic Value Chain Development in North Eastern Region, etc. Therefore, the rural farmer's participation and coordination in forming Farmers' Interest Group, Farmers' Club, Farmer Producer Organisation to implement various schemes and programs in rural areas is of utmost importance for the upliftment of local villagers and provide them the ways and means for economic development and livelihood improvement.

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