

JHUM CULTIVATION PRACTICES UNDER SENAPATI DISTRICT, MANIPUR

S. Longkhay Paoh¹, Sentinungshi², J. Longkumer³, Mary N. Odyuo⁴ and Saurabh Sharma⁵

ABSTRACT

Jhum cultivation, also known as shifting cultivation, is a traditional agricultural practice prevalent in various parts of Northeast India. The study was conducted in Senapati district under 2 blocks namely, Mao-Maram rural development (RD) block and Purul RD block in the year 2020. From the selected two blocks a total of six villages were selected purposively, viz., Ngamju, Oinam, Khongdei, Ngawar from Purul block and Karong, Taphou Oneame, Rikhumai Taphou from Mao Maram block. Data was collected using structured interview schedule and descriptive research design was followed. Study revealed that majority of the respondents (77.5%) were in the age group between 38-55 years (middle age) followed by 71.6 per cent of the respondents being male. Majority (83.33%) of the respondents were having marginal land holding under jhum cultivation. The farming experience for majority of the respondents was 31 years and above; 71.66 per cent of the respondents had 3 to 5 members who were engaged in jhum cultivation. 100 per cent of the respondents practised only organic farming. All the respondents (100%) selected their land by their own decision for jhum cultivation. Site selection started on January followed by land clearing on February till mid-March. After this, the land was burnt from end of March till April. Dibbling was done in the month of May. Zero tillage was employed in May and June. Sowing was done in between May till mid-June and harvested in between September and October while threshing was done for paddy in October. Majority of the respondents (87.5%) did not have access to inputs. The study recommends that, in order to improve jhum cultivation, emphasis should be given to take initiatives on encouraging agro-forestry practices that integrate trees with crops which can mitigate the environmental impact of jhum cultivation and also empowering communities with knowledge about sustainable agricultural practices and involvement of local communities in sustainable land management practices is crucial.

(Key words: Jhum cultivation, shifting, agriculture, Senapati, Manipur, practices)

INTRODUCTION

Jhum cultivation, also known as Slash and burn cultivation is a cultivation practice where a piece of forest land is cleared and cultivated. Jhum cultivation is a traditional agricultural process that involves clearing the land of trees and other vegetation, burning it and then cultivating it for a set period of time. It is the way of life which provides subsistence to the dependent community in the form of food, fuel wood and fodder (Soni *et al.*, 2019). It is the dominant form of traditional agricultural practice and continues to be the significant component of the livelihood of the state. Today, it is also practised traditionally generally in hilly region (Mandal, 2022). Many tribal communities in India are still continuing shifting cultivation (Saha and Bardhan, 2015). In the hills more than half of the rice cultivated area was under jhum cultivation (Marchang, 2017)

The vegetable crops grown in the jhum field by the famers of Manipur includes pumpkin, cucumber, gourds,

beans, soybeans, tomato, brinjal, chilli, cabbage etc. Moreover, some farmers have started growing cash crops like ginger, turmeric, large cardamom for commercial purpose (Prakash *et al.*, 2017). Jhum practice requires a field to be used for 2 years within a 10 year cycle 1:4 ratio of cropping to fallow (Rathore *et al.*, 2010). The system of cultivation is based on the indigenous method and knowledge with the values of interdependence, respect and ecological sensibility (Chongloi, 2016).

The market plays an important role for the farmers to sell their agriculture based products. Market access is very important as it determines the income diversification of a family (Punitha *et al.*, 2018). The traditional food diversity guarded by indigenous people can serve as a basis for designing and implementing public policies aimed at ensuring food security of those regions that practice such systems, and more widely (Pandey *et al.*, 2022). It has evolved as a traditional practice and is an institutionalized resource management mechanism ensuring ecological sustainability and food security thus providing a social safety net for local communities.

1. P.G Student, Dept. of Agricultural Extension and Education, SAS, NU, Medziphema Campus, 797106
2. Res. Scholar, Dept. of Rural Development and Planning, SAS, NU, Medziphema Campus, 797106
3. Professor, Dept. of Agricultural Extension and Education, SAS, NU, Medziphema Campus, 797106
- 4 & 5. Assoc. Professors, Dept. of Agricultural Extension and Education, SAS, NU, Medziphema Campus, 797106

MATERIALS AND METHODS

The study was conducted in the State of Manipur. Purposive sampling technique was followed for the study. From a total of 16 districts in Manipur, Senapati district was selected purposively for the present study as preliminary investigation shows that the number/percentage of farmers practicing jhum cultivation was observed to be higher in this district. Mao Maram and Purul block had a greater extent of farmers practicing jhum cultivation, so these blocks were selected purposively for the study. From the selected two blocks a total of six villages were selected purposively, viz., Ngamju, Oinam, Khongdei from Parul block and Ngawar, Karong, Taphou Oneame, Rikhumai Taphou from Mao Maram block.

A total of 120 respondents were randomly selected for the present study. Descriptive research design was followed for the study. The responses were analyzed using frequency, percentage, mean and standard deviation. Frequency is the number of times the event occurs in a given series of observation. Percentage is the frequency of a particular cell divided by the total number of respondents in that particular category and multiplied by 100. Mean refers

$$\bar{x} = \frac{\sum_1^N x}{N}$$

where, \bar{x} = mean of the scores

x = individual score

Σ = sum of individual score

N = number of observations

Standard deviation is the square root of the arithmetic mean divided by the number of observations

$$SD = \sqrt{\frac{(x - \bar{x})^2}{n - 1}}$$

Where, SD = standard deviation

x = individual score

\bar{x} = mean of the scores

N = number of observations

RESULTS AND DISCUSSION

Age

Table 1 revealed that majority of the respondents (77.5%) were in the age group between 38-55 years (middle age) followed by the 13.4 per cent who were above 55 years (old age) and 9.1 per cent of the respondents were in the category up to 37 years (young). Similar results were reported by Karamjit *et al.* (2015) that the middle-aged respondents made up the majority of the sample followed by the elderly and the young.

Gender

Table 2 shows that majority of the respondents (71.6%) were male and 28.4 per cent were female, which is

similar to the result found by Phukan *et al.* (2017) in their study that majority of the respondent were male. Thus, the gender analysis of the respondents revealed that men were mostly engaged in jhum cultivation in the present study area which is due to the fact that women were mostly engaged in household activities. This is also because jhum cultivation involves hard labour and greater strength that men can mostly undertake.

Land under jhum cultivation

Table 3 shows the distribution of respondents based on land size under jhum cultivation. The Table revealed that majority of the respondents (83.33%) had marginal land holding (0.025-2.5 acre) similar to Kharlukh and Jha (2021) which concluded that the majority of respondents had marginal total land holding sizes. While majority may be marginal land holders, none are landless indicating that in the study area all respondents have some means of livelihood.

Experience in jhum cultivation

Table 4 revealed that majority of the respondents (46.67%) had farming experience of above 31 years which is in line with the results found by Hoque *et al.* (2021) in their study where majority of the respondents had farming experience of more than 31 years. This indicates that jhum cultivation has been the mainstay of the study area for decades and it is still going strong.

Family members engaged in jhum cultivation

Table 5 contains the information based on distribution of respondents according to the number of family members engaged in jhum cultivation. The study shows that 71.66 per cent of the respondents had 3 to 5 members who were engaged in jhum cultivation.

Nature of farming

From Table 6 it is that all the respondents practised only organic farming. This reveals that the study area comprised of organic farming by default whereby most of the tribal states of North East were organic by default. Laldampui (2023) also concluded that there was a vast technology gap in adoption of fertilizer application and organic manure application in grape production in Mizoram state.

Land selection method for jhum cultivation

Table 7 contains the information based on decision making of respondents for selection of land for jhum cultivation. The study revealed that all the respondents selected their land by their own decision for jhum cultivation and did not depend upon family decision or the village council decision to distribute their land. Thus, jhum land is individually owned and the role of village council is not necessary now.

Seasonal jhum cultivation activities

Table 8 shows the activities practiced by farmers under jhum cultivation in the form of seasonal calendar in different months of the year. The table shows that site selection was started on January followed by land clearing on February till mid-March. After this, the land was burnt from end of March till April. Dibbling was done in the month of May. Zero tillage was employed in May and June.

Sowing was done in between May till mid-June and harvested in between September and October while threshing was done for paddy in October. Jhum cultivation is mostly seasonal however factors such as irrigation infrastructure, crop productivity and access to agricultural credit were significant determinants of efficiency (Kalariasi *et al.*, 2024).

Access to inputs

Table 9 depicts the distribution of respondents based on inputs accessibility. The table revealed that 12.5% of the respondents had access to improved implements like Chain saw, Ginger paste machine and knapsack sprayer. This could mean that the respondents are aware of the new technologies and are finding it beneficial to utilize the same. While majority of the respondents (87.5%) did not have access to inputs.

In conclusion, Jhum cultivation reflects a balance between traditional cultivation practices and sustainable

agriculture. Despite its traditional roots, there is a necessity of implementing modern agricultural practices to reduce environmental damage and increase yields. Integrating scientific approaches with traditional knowledge shows promise for achieving food security while preserving the rich cultural history of Jhum cultivation. Community involvement and policy support are critical for promoting sustainable agriculture practices and improving the livelihoods of farmers in the region.

The study recommended that, in order to improve jhum cultivation, emphasis should be given to take initiatives on encouraging agroforestry practices that integrate trees with crops which can mitigate the environmental impact of jhum cultivation and also empowering communities with knowledge about sustainable agricultural practices and involvement of local communities in sustainable land management practices is crucial.

Table 1. Distribution of respondents based on their age N=120

Sl. No.	Category	Frequency	Percentage	Mean	SD
1	Young (up to 37 years)	11	9.1		
2	Middle (38 to 55 years)	93	77.5	45.8	8.8
3	Old (above 55 years)	16	13.4		

Table 2. Distribution of respondents according to their gender N=120

Sl. No.	Category	Frequency	Percentage
1	Male	86	71.6
2	Female	34	28.4

Table 3. Distribution of respondents based on land size under jhum cultivation N=120

Sl. No.	Category	Frequency	Percentage	Mean	SD
1	Landless (<0.025 Acre)	0	0		
2	Marginal (0.025-2.5 Acre)	100	83.33		
3	Small (2.51-5 Acre)	18	15.00		
4	Semi medium (5.01-10 Acre)	2	1.67	1.9	1.1
5	Medium (10-25 Acre)	0	0		
6	Large (>25 Acre)	0	0		

Table 4. Distribution of respondents based on farming experience of jhum cultivation N=120

Sl. No.	Category	Frequency	Percentage
1	Up to 20 years experience	47	39.16
2	21 to 30 years experience	17	14.17
3	31 years and above	56	46.67

Table 5. Distribution of respondents according to family members engaged in jhum cultivation
N=120

Sl. No.	Category	Frequency	Percentage	Mean	SD
1	Up to 2	23	19.17		
2	3 to 5	86	71.66	4	1.4
3	Above 5	11	9.17		

Table 6. Distribution of respondents based on nature of farming N=120

Sl. No.	Category	Frequency	Per cent
1	Organic	100	100
2	Non-Organic	0	0

Table 7. Method of distribution of land for jhum cultivation N=120

Sl. No.	Choices available	Decision maker	
		Frequency	Percentage
1	By independent decision	120	100
2	By family decision	0	0
3	By village council	0	0

Table 8. Schedule of activities under jhum cultivation performed by the farmers in different months of the year

Sl.No.	Activity	Month											
		J	F	M	A	M	J	J	A	S	O	N	D
		A	E	A	P	A	U	U	U	E	C	O	E
		N	B	R	R	Y	N	L	G	P	T	V	C
1	Site selection		■										
2	Land clearing		■	■	■								
3	Burning land			■	■	■							
4	Tillage				■	■	■						
5	Dibbling					■	■						
6	Pit digging						■	■					
7	Seed bed preparation												
8	Sowing					■	■	■					
9	Harvesting									■	■	■	
10	Threshing										■	■	■

Table 9. distribution of respondents based on access to inputs N=120

Sl. No.	Inputs	Frequency	Percentage
1	Fertilizers	0	0
2	Pesticides	0	0
3	Improved implements	15	12.5
4	Without inputs	105	87.5

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