Jhuming vs. settled cultivation - a micro level study in the West Garo Hills of India

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Abstract

Jhuming also known as shifting cultivation is a primitive cultivation practise largely practised by the tribal communities across the world. The farming system prevalent in the Garo Hills is a combination of jhuming and settled cultivation. The present study was conducted to study the current status and extent of jhuming vis-à-vis settled cultivation prevalent among the Garo tribes of the West Garo Hills district of Meghalaya, India which is majorly inhibited by the Garo tribes. For the current study farm level data were collected from 160 respondents selected on the basis of disproportionate stratified sampling from all the eight rural development blocks of West Garo Hills district. Farm level study revealed that the West Garo Hills is dominated by small and medium land holdings followed by large and marginal ones. About 90 per cent of sample farmers of West Garo Hills district of Meghalaya opined that jhum cultivation is not sustainable in its present form. On the other hand majority of the jhum practitioners feel that settled cultivation cannot provide them different variety of crops needed for consumption and exchange purpose, except paddy. As jhuming was progressively losing its utility to sustain the jhumia family throughout the year, a new farming system has emerged in the West Garo Hills wherein the hill farmers practise a combination of jhum and settled cultivation.

Keywords: Garo tribe, Shifting cultivation, Jhum, Settled cultivation

Introduction:

West Garo Hills, a district of the state of Meghalaya, India is mostly a hilly terrain with high rainfall and high humidity interspersed with valleys and plain lands. Garo Hills may be divided into two parts considering prevailing land system: (i) the hilly lands covering 94.25 per cent of the total district area where mostly customary laws govern the land rights; (ii) the plane lands covering the remaining 5.75 per cent of the total area where the relevant provisions of the Assam Land and Revenue Regulation are applicable (Agnihotri, 1997). The two distinct farming systems prevalent in the north-eastern region in general and in West Garo Hills in particular, are (i) Shifting cultivation, locally known as jhum or jhuming and (ii) permanent or settled cultivation. Shifting cultivation or Jhum is an integrated farming system and is not just a land clearing practice. This is practised by the tribal in all probable hill slopes of all possible gradients. Permanent or settled farming is limited to plain areas, valleys and gentler slopes. The gentler slopes are being utilised for terrace cultivation. Jhum is a farming system which probably developed as the first step in transition from food gathering and hunting to systematic food production. It is characterised by a rotation of land rather than that of crops; and also characterised by a cropping phase followed by a fallow phase (to allow growth of forests) with controlled burning and indigenous knowledge. Though jhuming is subsistence farming, level of risk and uncertainty is less here due to the crop diversification through mixed cropping. Despite its acceptance as a way of life among the rural populace of Meghalaya, it has been severely criticised, mainly on ecological grounds.

West Garo Hills is that segment of Meghalaya where the incidence of 'Jhum' (shifting cultivation) is high compared to the other districts of Central and Eastern Meghalaya. Jhum is a subsistence form of cultivation that has created a stagnant \rural economy with poverty and unemployment. Uprooting jhum practice is not easy as it has spread its root deep down into the culture and tradition of the Garo people. The current study has been taken up to examine the present status of shifting *vis a vis* settled cultivation in West Garo Hills district of Meghalaya, India.

Materials and Method:

West Garo Hills was the maiden district of Western Meghalaya where share of agriculture and allied activities in the net state domestic product is comparatively high and have remained more or less constant over the last decade. Relevant data were collected and compiled at micro level, for the eight rural development blocks of West Garo Hills during the year 2011-2013. Cross section data, collected through a pre tested structured schedule using personal interview method were utilised.

In the present study, disproportionate stratified sampling technique was employed, wherein the different strata of the population were selected. Farm level data were collected from the eight rural development blocks of West Garo Hills district. From each block, two villages were selected at random. From each village, which is a stratum, 10 respondents were interviewed using pre-tested structured interview schedule. Since almost all the villages in the hills and in the plain belt of the different blocks represent more or less the same characteristics, the present study was based on disproportionate stratified sampling while choosing the farm house hold; this is justified since a higher level of knowledge about the population allows a smaller sample (Guthrie, 2010). Thus, the total sample size comprises of 160 sample farm (8 blocks x 2 villages x 10 respondents =160 sample farms) households from sixteen villages out of eight blocks of the West Garo Hills district of Meghalaya, India. The following sample villages were selected *viz.* Rengsangre and Rongdikgre from Rongram block; Rongmasugre and Dilji appal from Dadengre block; Nagargaon and Megapara from Tikrikilla block; Murchapani and Bolangre from Betasing block; Agipengre and Askikamdi from Selsella block; Nagolpara and Patijora from Zikzak block; Babelapara and Medupara from Dalu block; Nenga-bolchugre and Aminda-simsang from Gambegre block.

Results and Discussion:

In the West Garo Hills of India, nature of property rights are usufructuary and therefore farmers cannot use their lands as collaterals against credit. Traditional land related laws in the district basically centre around jhum cultivation where land-man relationship is found to be based upon these three principles – (i) allocative principle *i.e.* the village head man locally known as 'nokma' or the chief of the

clan has the power to distribute land among the villagers for the purpose of jhum and also has the right to make minor changes therein from time to time (ii) allottee has only usufructuary rights and (iii) the allottee is required to cultivate his portion of land with his family labour. Modernisation process has changed this fabric by giving rise to *de facto* property rights over land in contrast to the usufructuary rights, which are the *de jure* rights under the traditional land laws (Majumdar,1987). Though the model operational jhum field size is 1.0 hectare, farm size for a jhumia depends upon the availability of family labour. Table 1 shows that incidence of jhum is maximum in Nagolpara of Zikzak block (28 per cent). It is the least in Aminda Simsang (8.43 per cent) of Gambegre block. Gross cropped area of the sample farmers under settled cultivation is found to be the maximum in Aminda-Simsang (91.6 per cent) of Gambegre block, followed by Rongmasugre (91 per cent) of Dadengre community and rural development block.

Many hill farmers have been practising this integrated farming (Table 2). Except for Selsella and Tikrikilla, all the other blocks in West Garo Hills district find all the sample farmers engaged in both types of farming viz., settled and jhum. In Rongram block, 90 per cent of sample farms in Rengsangre and 100 per cent in Rongdikgre village practise both settled and jhum.. The other block is Betasing where 100 per cent of sample farmers in both the sample villages viz., Murchapani and Bolangre are engaged in both settled and Jhum farming. Nagolpara is the other village in Zikzak block where 100 per cent of sample villagers are practising both settled and jhum simultaneously. Table 2 shows percentage distribution of farm populace engaged in settled and shifting cultivation simultaneously. Similar findings have been reported in a particular study by NIRD (National Institute of Rural Development) North Eastern Regional Centre, Guwahati, which found that about 40 per cent farmers in Meghalaya, Assam hill districts and hill districts of Manipur practise permanent cultivation along with shifting cultivation (Seven Sisters, 1996).

Perusal of Table 3 reveals land holding pattern of the sample farms in the selected blocks of West Garo Hills District. Sample farms in West Garo Hills are dominated by small (1-2 hectare) and medium (2-4 hectare) land holdings followed by large (>4 hectare) and marginal (<1 hectare) land holdings respectively. Very few sample farms have more than 4 hectares of land. In the marginal category, only 50 per cent of sample villages have less than 50 per cent of sample farms which fall in this category. Average land holding (operational) per house hold ranges from 4.74 hectare to 1.04 hectare.

In Rongram block two villages Rengsangre and Rongdikgre were selected. Average operational land holding for the village Rengsangre is 1.96 hectare. 10 per cent of the sample farms are doing only jhum cultivation whereas rest 90 per cent does both jhum and settled. None of the sample farms have irrigation facilities.

Village Rongdikgre (Rongram block) has maximum percentage (40 %) of sample farms in medium landholding category with 20 per cent each in marginal, small and large category. Here, 100 per cent of sample farmers follow combination of jhum and settled farming together. The sample farms do not have irrigation facility

In Dadenggre block, the two selected villages are Dilji Apal and Rongmasugre. In Dilji Apal, there is no marginal landholder among the sample farms. 50 per cent of sample farms are in the medium category, while 30 per cent of them are large farmers; only 20 per cent of sample farmers in the village were small holders; average landholding in the village is 3.17 hectare (medium). This is a jhum cultivation dominated village with 60 per cent of sample farms practising jhum cultivation alone, while 30 per cent practise settled cultivation; only 10 per cent practise both jhum and settled cultivation together. The sample farms of this village are devoid of any irrigation facilities.

Land holding pattern in Rongmasugre is as follows: 10 per cent marginal farms, 20 per cent small, 60 per cent medium and 10 per cent large farms. Sample farms have an average landholding of 2.55 hectare. 60 per cent of sample farms practise settled cultivation while 40 per cent practise both jhum and settled. This is a village where the total landholding of 25.46 hectare of the sample farms are rain fed (table 4).

Nagorgaon is a village in Tikrikilla block, where landholding of sample farms is distributed among small and medium category with an equal share of 50 per cent each. Average landholding of

sample farms is 1.74 hectare (small) whole of which is operational. 100 per cent of sample farms practise only settled farming out of which around 80 per cent is under irrigation while the rest is rain fed. (table 4).

In Megapara village, 10 per cent of the sample farms are marginal, 40 per cent are small, 40 per cent are medium and the rest of 10 per cent are in large category. The sample farms have an average land holding of 2.24 hectare. 100 per cent sample farms practise settle cultivation in rain fed condition (table 4).

Village Agipengre of Selsella block, share in landholding is distributed among the small and medium category with 40 and 60 per cent in each category respectively. The average landholding of the sample farms in this village is 2.15 hectare (medium). All 100 per cent sample farms practise settled farming, without any irrigation facility (table 4).

The other village of Askikamdi in Selsella block, finds 20 percent of marginal farms, 30 per cent of small, 20 per cent of medium and another 30 per cent of large farms among the 10 sample farms. Average landholding of sample farms is 3.51hectare. The entire sample farms (100 per cent) practise settled farming. Few sample farms in Askikamdi(around 22 per cent) have irrigation facility.

Murchapani and Bolanggre are the two selected villages in Betasing block of West Garo Hills. In Murchapani village, 20, 50 and 30 per cent of sample farms fall under small, medium and large category respectively. There have been no marginal farms among the sample farms in this village. The average land holding of the sample farms is 3.28 hectare. 100 per cent of the sample farms are practising a combination of both settled and jhum farming. Only 17.07 per cent of the land held by sample farms are being irrigated in this village (table 4).

In Bolanggre village of Betasing block, 40 per cent of the sample farms are marginal and the rest 60 per cent are in small category. Average landholding of the sample farms is 1.04 hectare (small), whole of which is operational. 100 per cent sample farms in the village practise mix of jhum and settled farming.

From Zikzak, two villages Nagolpara and Patijora have been selected of which Nagolpara is the village where 20 per cent of the sample farms are falling in medium category and the rest 80 per cent is under large category. Average landholding of sample farms of this village is 4.74 hectare (large), whole of which is operational. None of the sample farms are practising either jhum or settled cultivation but are doing both simultaneously. None of the sample farms in the village are getting irrigation facilities and all the cultivated land of sample farms i.e., 47.46 hectare are rain fed, (Table 4), of which 34.13 hectare (71.91per cent) is under settled cultivation and 13.33 hectare (28.09 per cent) is under jhum cultivation.

Patijora is the other village from Zikzak block where share in land holding is distributed among small and medium with an equal share of 50 per cent each. Sample farms of this village have an average landholding of 2.10 hectare (small) which is fully operational. 100 per cent sample farms are engaged in settled farming and the entire cultivated land of the sample farms of 21.00 hectare is rain fed (Table 4).

The other block Dalu of West Garo Hills district has two selected villages viz., Medupara and Babelapara. Share in landholding of 10 sample farms in Medupara village are as follows: 10 per cent marginal, 80 per cent small, 10 per cent medium, and none in large category. An average landholding of 1.17 hectare is found which is fully operational. This is a village where 80 per cent of sample villagers are engaged in both settled and jhum cultivation simultaneously. All the sample farms in this village are rain fed (Table 4).

Babelapara village has no marginal farm but only small (20 per cent), medium (70 per cent) and large (10 per cent) from among the sample farms. Average landholding of 2.65 hectare is fully operational. Percentage distribution of sample farms is that 40 per cent of them are engaged in settled farming and the rest 60 per cent is doing both settled and jhum cultivation simultaneously. The whole of 26.53 hectare are found to be cultivated by the sample farms in rain fed condition (Table 4).

In Nenga Bolchugre village of Gambegre block, 20 per cent of the sample farms are marginal, 40 per cent each are small and medium with no large category of farms. Average landholding is 1.82

hectare. 30 per cent of the sample farms are practising settled farming whereas 70 per cent are found to be engaged in both settled and jhum simultaneously, of which around 30.17 per cent are irrigated land (Table 4);

Aminda Simsang village of the same block finds itself in 30 per cent small, 60 per cent medium and 10 per cent large category of sample farms. 50 per cent of the sample farms in this village practise settled farming and the rest practise mix of settled and jhum simultaneously. Few sample farms in the village have irrigation facility (27.52 per cent) and the rest (72.48 per cent) is rain fed (Table 4).

West Garo Hills district has highest annual area under jhum; the district also had the highest number of shifting cultivators which is on the decline. A new farming system emerged in Garo Hills since the late thirties when hill farmers were found to practise both jhum and settled farming (plantation) together as jhum was progressively losing its utility to sustain the jhumia family throughout the year. Settled farming in West Garo Hills comprises of three activities – (i) irrigated wet paddy cultivation in valley (ii) cultivation in the terraced land and (iii) horticulture in the hill slopes. Terrace cultivation could not attract the hill farmers who are otherwise successful in producing horticultural crops. The prevalent cropping pattern in the district is the age old practice of mixed cropping (jhum) in the upper and medium land slopes along with mono cropping (wet land paddy cultivation) in the low lands and valleys. Sample farms in West Garo Hills are dominated by small (1-2 hectare) and medium (2-4 hectare) land holdings followed by large (>4 hectare) and marginal (<1 hectare) land holdings respectively. Average land holding per house hold ranges from 6.84 hectare in Zikzak block to 3.82 hectare in Dalu block.

Conclusions:

In a nut shell, 90 per cent of sample farmers of West Garo Hills district of Meghalaya opined that jhum cultivation is not sustainable in its present form and expressed their helplessness regarding their continued association with jhum mainly because of the (i) food security that is ensured through jhum and (ii) viable alternatives cannot be initiated on their own as they do not have access to institutional credit as 99 per cent of sample farmers do not have access to bank loans. On the other hand majority of the jhumias feel that settled farming cannot provide them all the crops needed for consumption and exchange purpose except for paddy. This leaves the hill farmers with no other alternative but to recourse to jhuming. Since the late thirties, with exogenous influence of urbanisation process and shortening of jhum cycle arable land was losing productivity progressively. Consequently, the hill farmers of West Garo Hills were found to respond to this changing scenario by moving from the traditional jhuming to the new idea of converting a big chunk of jhum land into permanent settled cultivation in terms of plantation crop.

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Table 1: Status of shifting and settled cultivation in the sample farms of West Garo Hills district, Meghalaya

Sl No.	Block	Village	Settled (ha)	Jhum (ha)	Total (ha)
1	Rongram	Rengsangre	14.8 (75.5)	4.8 (24.49)	19.6 (100)
		Rongdikgre	19.20 (74.2)	6.67 (25.78)	25.87 (100)
2	Dadenggre	Dilji Apal	28.27 (89.1)	3.46 (10.9)	31.73 (100)
		Rongmasugre	23.19 (91.1)	2.27 (8.92)	25.46 (100)
3	Tikrikilla	Nagorgaon	17.4(100)	0	17.4 (100)
		Megapara	22.40 (100)	0	22.4 (100)
4	Selsella	Agipengre	21.47 (100)	0	21.47 (100)
		Askikamdi	35.07 (100)	0	35.07 (100)
5	Betasing	Murchapani	27.74 (84.57)	5.06 (15.43)	32.8 (100)
		Bolanggre	9.00 (85.96)	1.47 (14.04)	10.47 (100)
6	Zikzak	Nagolpara	34.13 (71.91)	13.33 (28.09)	47.46 (100)
		Patijora	21.0 (100)	0	21.0 (100)
7	Dalu	Medupara	10.06 (85.76)	1.67 (14.24)	11.73 (100)
		Babelapara	22.8 (85.94)	3.73 (14.06)	26.53 (100)
8	Gambegre	Nenga Bolchugre	14.67 (80.92)	3.47 (19.14)	18.14 (100)
		Aminda Simsang	21.73 (91.57)	2.00 (8.43)	23.73 (100)

N.B.: Values in parenthesis are percentages to the total

Table 2: Percentage of farmers engaged in both settled and jhum cultivation in the sample farms of West Garo Hills, Mehgalaya

Sl No.	Block	Village	Percentage distribution of sample farms		
			Jhum (ha)	Settled (ha)	Jhum + Settled (ha)
1	Rongram	Rengsangre	10	--	90
		Rongdikgre	--	--	100
2	Dadenggre	Dilji Apal	60	30	10
		Rongmasugre	---	60	40
3	Tikrikilla	Nagorgaon	--	100	--
		Megapara	--	100	--
4	Selsella	Agipengre	---	100	--
		Askikamdi	---	100	--
5	Betasing	Murchapani	---	--	100
		Bolanggre	--	--	100
6	Zikzak	Nagolpara	--	--	100
		Patijora	--	100	--
7	Dalu	Medupara	10	80	10
		Babelapara	--	40	60
8	Gambegre	Nenga Bolchugre	--	30	70
		Aminda Simsang	--	50	50

Table 3: Pattern of land holding of sample farms in the blocks of West Garo Hills district, Meghalaya

Sl No	Block	Village	Share in land holding (%)				Average Land Holding (Ha)		
			Marginal (<1 Ha)	Small (1-2 Ha)	Medium (2-4 Ha)	Large (>4 Ha)	Oper-ational (ha)	Non-Operat-ional (ha) (Fallow)	Total (ha)
1	Rongram	Rengsangre	40	30	20	10	1.96 (100)	---	1.96 (100)
		Rongdikgre	20	20	40	20	2.59 (100)	---	2.59 (100)
2	Dadenggre	Dilji Apal	---	20	50	30	2.04 (64.4)	1.13 (35.64)	3.17 (100)
		Rongmasugre	10	20	60	10	2.21 (86.7)	0.34 13.33)	2.55 (100)
3	Tikrikilla	Nagorgaon	---	50	50	---	1.74 (100)	---	1.74 (100)
		Megapara	10	40	40	10	1.54 (68.8)	0.70 (31.25)	2.24 (100)
4	Selsella	Agipengre	---	40	60	---	2.15 (100)	---	2.15 (100)
		Askikamdi	20	30	20	30	3.48 (99.2)	0.03 (0.85)	3.51 (100)
5	Betasing	Murchapani	---	20	50	30	2.93 (89.3)	0.35 (10.67)	3.28 (100)
		Bolanggre	40	60	---	---	1.04 (100)	---	1.04 (100)
6	Zikzak	Nagolpara	---	---	20	80	4.74 (100)	---	4.74 (100)
		Patijora	---	50	50	---	2.10 (100)	---	2.10 (100)
7	Dalu	Medupara	10	80	10	---	1.17 (100)	---	1.17 (100)
		Babelapara	---	20	70	10	2.65 (100)	---	2.65 (100)
8	Gambegre	Nenga Bolchugre	20	40	40	---	1.59 (87.4)	0.23 (12.64)	1.82 (100)
		Aminda Simsang	---	30	60	10	1.85 (78.1)	0.52 (21.94)	2.37 (100)

Table 4: Area under irrigation, rainfed of the sample farms engaged in settled cultivation and jhum in the sample farms

Sl No	Block	Village	Settled cultivation			Jhum (ha)	Total (ha)
			Area under Irrigation (ha)	Rainfed Area (ha)	Total (ha)		
1	Rongram	Rengsangre	--	19.60 (100)	14.8 (75.51)	4.8 (24.49)	19.60 (100)
		Rongdikgre	--	25.87 (100)	19.20 (74.22)	6.67 (25.78)	25.87 (100)
2	Dadenggre	Dilji Apal	--	31.73 (100)	28.27 (89.10)	3.46 (10.90)	31.73 (100)
		Rongmasugre	--	25.46 (100)	23.19 (91.08)	2.27 (8.92)	25.46 (100)
3	Tikrikilla	Nagorgaon	13.93 (80.05)	3.47 (19.94)	17.4 (100)	--	17.4 (100)
		Megapara	--	22.4 (100)	22.40 (100)	--	22.40 (100)
4	Selsella	Agipengre	--	21.47 (100)	21.47 (100)	--	21.47 (100)
		Askikamdi	7.87 (22.44)	27.2 (77.56)	35.07 (100)	--	35.07 (100)
5	Betasing	Murchapani	5.6 (17.07)	27.2 (82.93)	27.74 (84.57)	5.06 (15.43)	29.33 (100)
		Bolanggre	0.93 (8.88)	9.54 (91.12)	9.00 (85.96)	1.47 (14.04)	10.47 (100)
6	Zikzak	Nagolpara	--	47.46 (100)	34.13 (71.91)	13.33 (28.09)	47.46 (100)
		Patijora	--	21.0 (100)	21.00 (100)	--	21.00 (100)
7	Dalu	Medupara	--	11.73 (100)	10.06 (85.76)	1.67 (14.24)	11.73 (100)
		Babelapara	--	26.53 (100)	22.8 (85.94)	3.73 (14.06)	26.53 (100)
8	Gambegre	Nenga Bolchugre	5.47 (30.17)	12.66 (69.83)	14.67 (80.92)	3.47 (19.14)	18.14 (100)
		Aminda Simsang	6.53 (27.52)	17.2 (72.48)	21.73 (91.57)	2.00 (8.43)	23.73 (100)

N.B.: Values in parenthesis are percentage to total