

ASSIGNMENT

ON

Jhum Cultivation and its impact

Submitted to

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Acknowledgment

I wish to express my sincere thanks and gratitude to Ms. Medoseno Thapo our environmental lecturer, for giving us the opportunity and fruitful guidance by initiating ^{to do} this project on the topic "terrace/ghum cultivation and its impact on environment", for which this project has been successful.

By doing this project we got enriched with many information which can help us in our future.

Mercy Tep

Aims

The main aims of this project is :

- To study on how ghum cultivation is practiced
- To study how and which tools and equipments have been use
- To study how it effects the environment.
- To bring about awareness^{and role} to each and every individual person.

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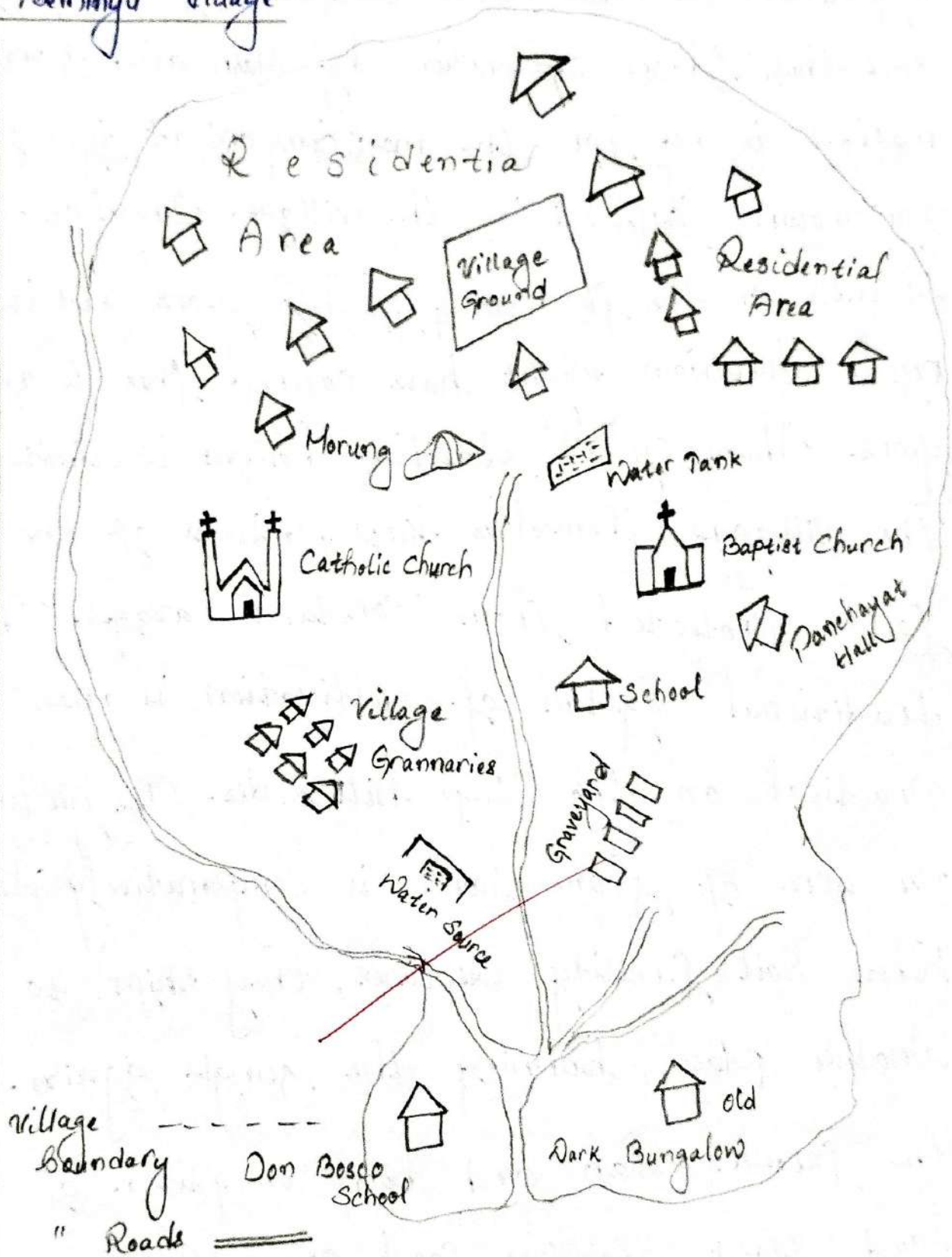
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Introduction

Pseminyu is one of the popular villages in the state. Pseminyu is a village inhabited by Rengma Naga tribe only. It is located in Kohima district of Nagaland. It is a medium size village having 802 households and 1,070 population according to 1981 census. A number of households migrated to various places got better employment and business opportunities. Many factors have contributed to the popularity of the village. Head-hunting time made the village popular among the neighbouring villages and tribe. This practice has now become obsolete. There is no written history of the village. Pseminyu has always been a well known village of Nagaland. The land is endowed with evergreen vegetation. A large variety of trees is found in the village. Due to unchecked hunting, the population

of wild animals and birds had dwindled to a considerable extent. As Tseminyu village is inhabited by Rengma, there is no other ethnic group living in the village during the time of survey. Agriculture is the main economic source of the village. The lands in the village can be divided into homestead, cultivable and forest land. The livestock plays an important role followed by forestry. Agriculture, livestock and forestry are the economic resources of Tseminyu village dwellers. The system of land tenure in the village is similar to that of other Naga tribes of the state. Laws are strictly enforced. It was believed that violation of laws was not good for general public. The village council is the main body which looks after the village affairs even today.

Layout map of Beminyu Village



Jhum Cultivation

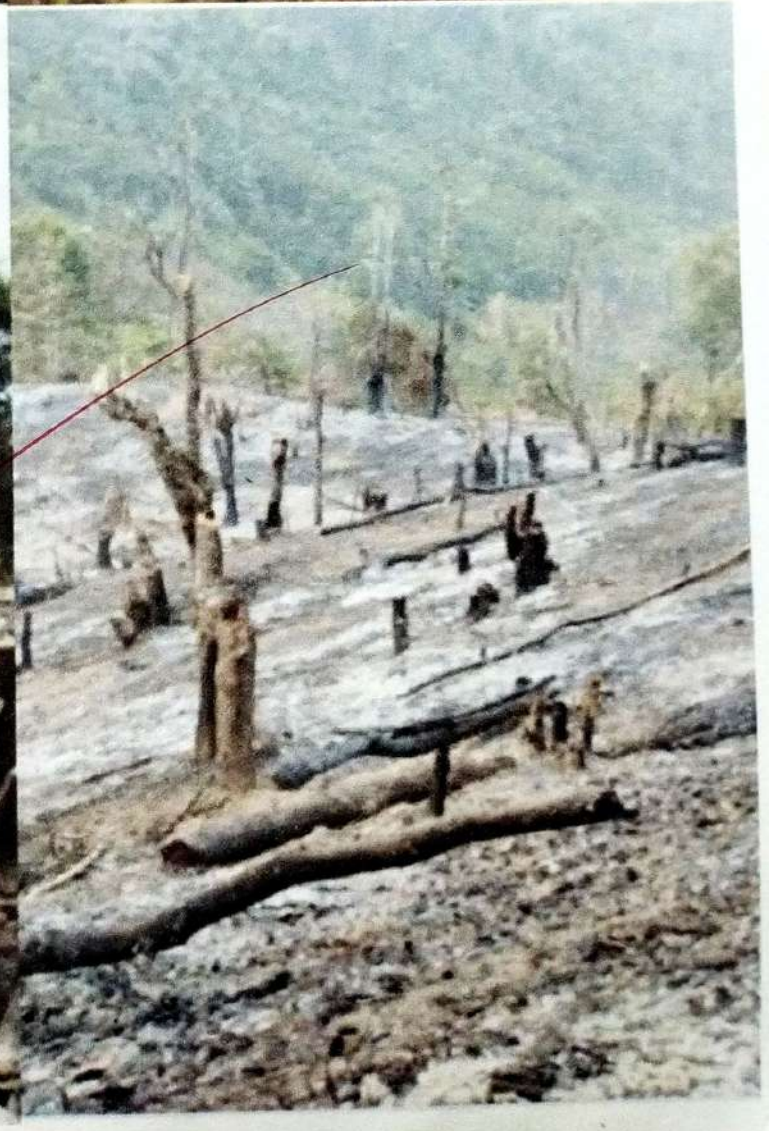
Agriculture is the main occupation of the villagers. And thus, Jhum cultivation by slash and burn method is by far the most important type of agriculture followed in the village. Jhum cultivation stands on the field only for two years but its cycle duration might have covered five to nine years. Jhum cycle's duration however is limited. The villagers themselves keep portions of the forest protected from constant ravages. This traditional system of cultivation is most practical on the steep hill sides. The yield per acre of jhum land is comparatively less. When soil fertility declines, they shift to another place, burning the jungle again. The farmers slash and burn a patch of land, start growing food crops. The farmers of the village are aware of the fact that Jhum cultivation leads to soil erosion.

The life and culture of the peoples depend to a great extent on jhum cultivation. The crop mix of perennial and season crops in jhum cultivation allows phased harvesting ensuring food security ~~allows~~ ~~phased~~ throughout the year and also provides needed diversity for nutrition and food preferences. Jhum cultivations have been practice for generations. Jhum is perhaps the cheapest method of tillage involving minimal land preparation and insignificant capital investments in terms of manure and fertilisers. The jhum tiller finds his plot more sustainable as he can grow multiple crops for the sustenance of the family. Land preparation and cropping is undertaken with minimum

tillage and no animals or large machinery are used by the jhum cultivators. The yield obtained from jhum fields at present. Jhum cultivation originally fertile land along with the burnt ashes makes it possible to raise a good yield of crops for a year or two. The nutrients of the soil will exhaust and thus yields falls drastically.

Jhum cultivation produce ~~large~~ variety crops from the same fields and these include foodgrains, vegetables and cash crops. It also produce maize, yam, beans, finger millet, tapioca, sweet potato, ginger, tobacco, Sheesham, Chillies and leafy vegetables.

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Tools and equipments used by the farmers in Jhum cultivation

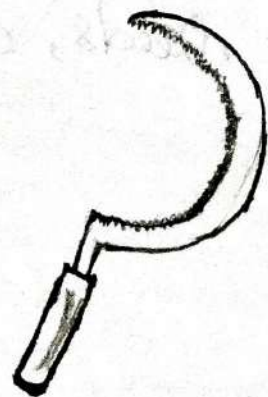
Tools and equipments that are age old agricultural means are still in use since Jhum cultivation is same as it was in the past.

Dao - Of all the implements dao is the most essential one for cutting trees, clearing jungle and for other purposes.

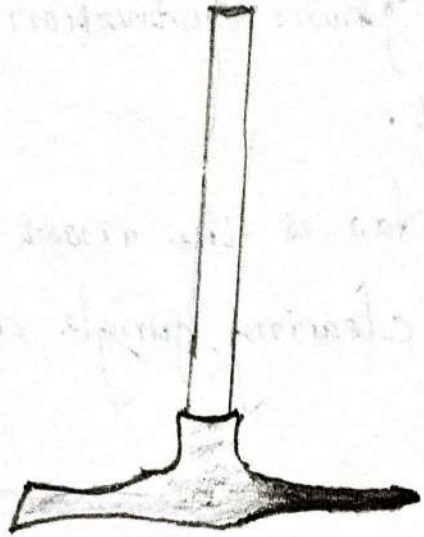


Sickle - A sickle is a hand tool with a sharp curved blade, used for harvesting. It is used to chop the succulent

forage which is feed for the livestock. Sickle is used to chopping green grass and cereals in common. Sickle dates back to centuries and is useful tool for agriculture / farming.



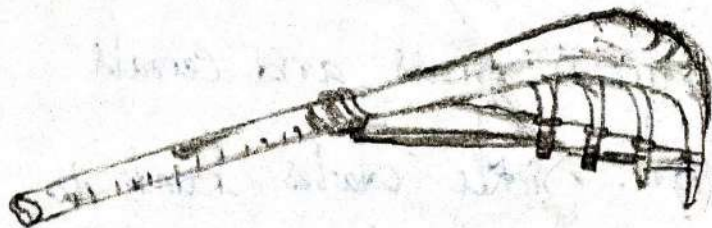
Pickaxe - A pickaxe or a pick is a hand tool with a hard metal head fit perpendicular to the



handle. The pickaxe is used to landscaping, cracking up hard surfaces and farming to segregate and a till minor section of the land. The metal head has two parts. One side of the

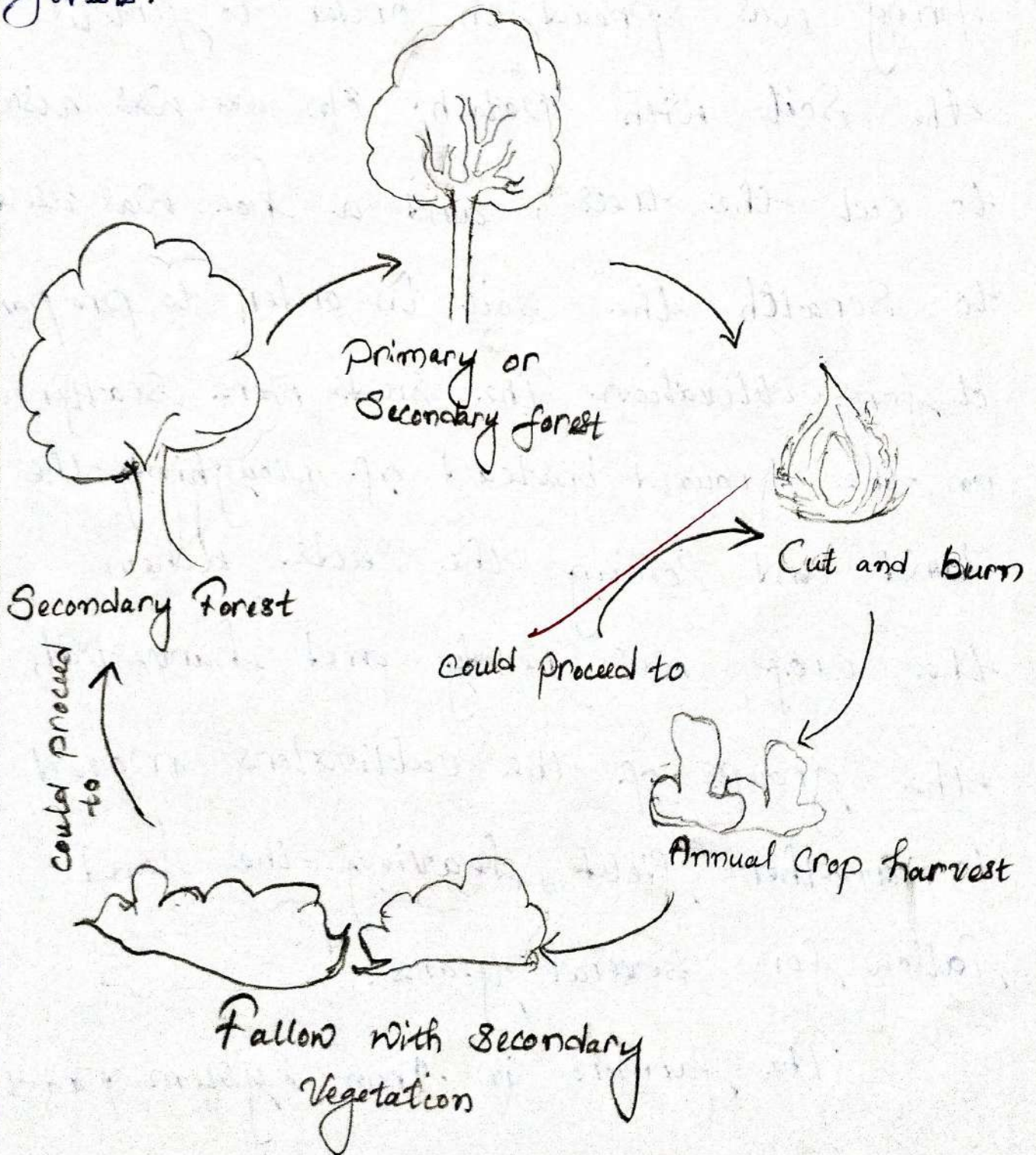
head is sharply pointed metal. The other side is of a blunt one.

Hoe - A hoe is an ancient, popular versatile agricultural hand tool used to shape the soil, clear weeds, clean soil, and harvest root crops.



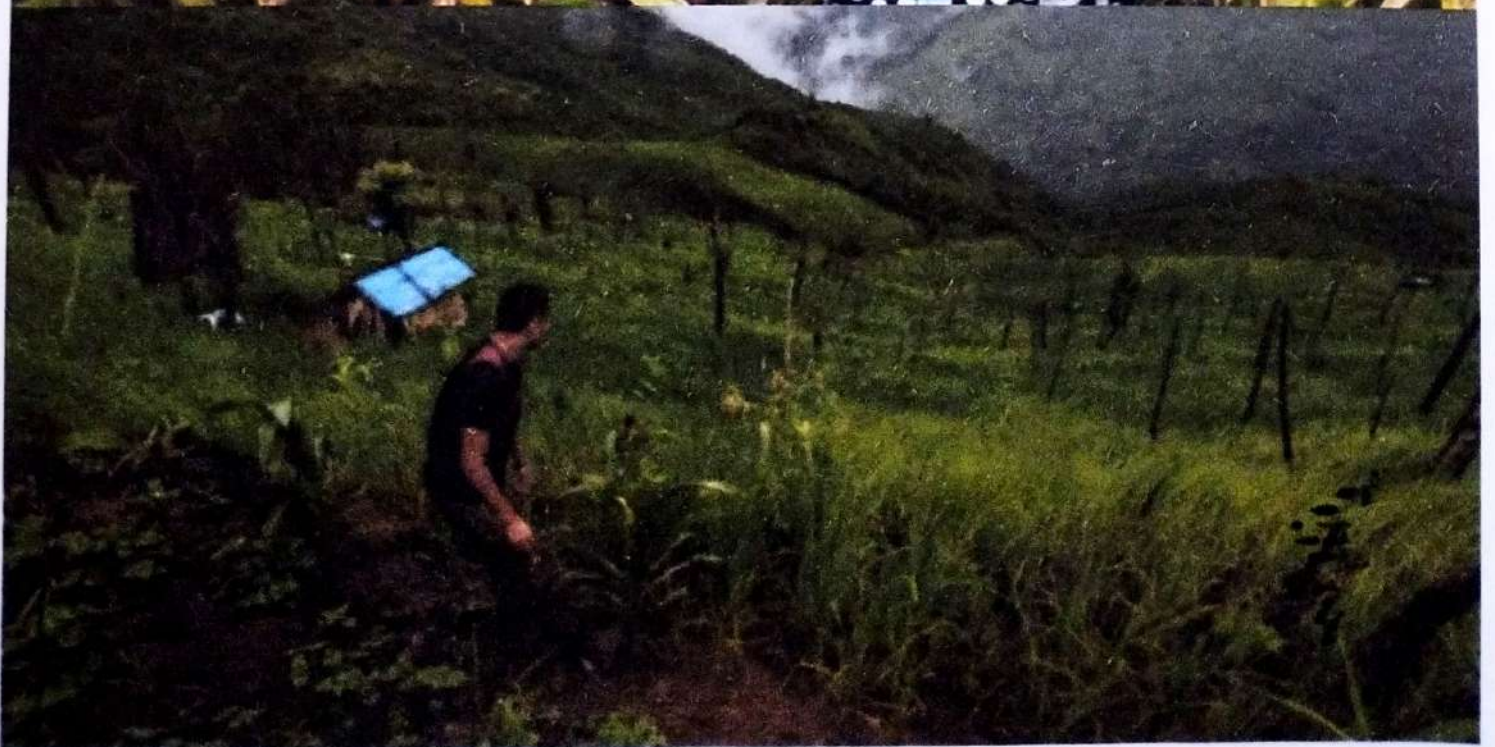
Practice / Process of Jhum Cultivation

Jhum cultivation ^{is} ~~was~~ also known as Mazu by the Rengmas. This cultivation was practiced on small patches of land, mostly in the forests.



The cultivators cut the tree tops to allow sunlight onto the ground and burnt the vegetation on the land to clear it for cultivation. The ash from the firing was spread in order to fertilise the soil with potash. An axe was used to cut the trees, and a hoe was used to scratch the soil in order to prepare it for cultivation. The seeds were scattered on the ground instead of ploughing the land and sowing the seeds. When the crop was ready and harvested, the groups of the cultivators moved to another field, leaving the land fallow for several years.

The farmers in Jhum System practice



mixed cropping, cultivating 30-40 varieties of crops. Some of the common crops are rice, maize, chilli, pumpkin, colocasia, sesame, millet, cucumber, tomato, ginger, bottle gourd, bitter melon and different varieties of legumes. ^{Rice, corn} These are among the chief crops grown by the method of cultivation. Rice is the dominant crop and also the staple diet of the people.

Proper rotation is the key to Jhum cultivation. Jhum cultivation is done during the month of December and January.

The harvest is done and the soil is left for replenishment for a while.

Advantages of Jhum cultivation

Jhum cultivation has various advantages.

- i) The soil has been replenished. It helps the soil gain back all the ~~the~~ nutrients it has lost during cultivation.
- ii) Uses forest's natural cycle of regeneration.
- iii) Organic farming, doesn't use pesticides or chemical fertilizers. Trees burned to provide Potash to the soil.
- iv) After jhumming the land is distributed among farmers.
- v) Jhum causes only temporary loss of jungle. Because once monsoon over, the farmers abandon the land. Jungle regenerates quickly.
- vi) The Jhum cycle normally runs for around 6-10 years i.e. when farmers return ^{to the} same patch of land and burn forest again.
- vii) Jhum cultivation controls the growth of weed on the agricultural land.

- (iii) There are lesser ^{risk of} attacks by animals and natural disasters.
- (ix) Jhuming is done in steep hill slopes where sedentary cultivation is not possible. So it is a reflex to physiographical characters.
- (x) During those 6-10 years, same jungle provide forest produce to the cultivators.

The method of jhum cultivation is very sustainable. The natural vegetation which turns into ash provides nutrients to the crops and act like natural fertilizers. The productivity in jhum cultivation is high even in small area, hence the efficiency is high.

Overall, jhum is economically productive and ecologically sustainable.

Disadvantages of Jhum Cultivation

- i) Jhum cultivation has been exploited ^{everything} ~~injudiciously~~ that has been useful to human.
- ii) It causes major carbon sinks, home to biodiversity. It must be protected.
- iii) Jhum farming families always suffer food, fuel and fodder problems, leading to poverty and malnutrition.
- iv) Jhum farming cause deforestation of a surrounding.
- v) Tons of biomass gets loss due to burning of trees.
- vi) Tree burning leads to higher CO_2 , NO_2 and other greenhouse gases. It leads to higher ~~rain~~ run off of water, hence drought & drinking water shortage. Soil erosion and siltation in dams.
- vii) The land doesn't get enough time to regrow its forest.

Impact of Jhum Cultivation on environment

Jhum is the most serious problems leading to degradation of the forests. This cultivation also damage to the soil level. The continuous process of forest degradation may result in the less average rainfall and uncertainty in the monsoon rainfall. The temperature is also increasing day by day and effects on human life. Jhum cultivation had occurred in land-use over centuries. Among the ill impacts, invasion of exotic weed species in the jhuming areas is of vital importance.

Due to repeated slashing and burning, forests species were replaced by secondary vegetation such as shrubs, exotic weeds and hardly grass. Some of the native species have been disappeared.

This cultivation harms the wildlife

species as well as environment which leads to extirpation. Jhum cultivation pollutes the air leading the people to more demand of land for settlement and other resources which ultimately effects the surrounding natural vegetation of the village. Hill cutting jhum cultivation has favored occurrence of landslide and accumulation of eroded soil. Due to frequent cultivation from one land to other the ecology of the area has been affected badly. It has created forest canopy gaps. The forest birds arboreal mammals and plants were ~~distru~~ disturbed greatly by Jhum cultivation and only a fraction of the species is found in the second-growth habitats created by jhum practice.

Role of an individual and awareness

- * Cutting down of trees i.e. deforestation should be banned.
- * Encouragement should be given for cooperative efforts for carrying out forest based activities.
- * Steps to be taken for forming village forest communities for the protection and development of degraded forests.
- * Active participation of local peoples in developmental intervention should be ensured in order to find out alternative land uses for sustainable hill farming.
- * Implementation of total literacy campaign should be undertaken by governmental policies and strategies.

Conclusion

Jhum cultivation is the practice to sustain the livelihood and non-availability of timely employment avenues. The people are still practicing Jhum cultivation mainly because of their customs and traditions.

Although this cultivation has been criticized for being wasteful and inefficient and for causing soil degradation and declines in soil fertility, it is the most widespread farming system. This cultivation is the way to ensure food supply for the families. The characteristics of Jhum cultivation are changing over time. Population pressure, inadequate land for cultivation, policy planning and implementations influence farmers to continue Jhum cultivation. Many farmers do wish to maintain Jhum cultivation, despite adverse government policies because it is the only ^{viable} way of farming and form an integral part of their cultural identity.

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