

KEYWORDS

Tribal Farming Methods: A Case Study of Konda Reddi in Andhrapradesh

Agricultural methods, Tribe, livelihood, podu, economy

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ABSTRACT In the forest ecology, the economic life of the kondareddi revolves round what is known as podu / swidden / step cultivation. There are certain distinct phases in shifting cultivation which bring to gather interacting between nature, man and spirit in a series of situations. The shifting cultivation of kondareddi may be understood which is generally process like selecting and cutting of forest, burning and removing of woods, sowing,wedding,watching, harvesting and worshiping precisely, the concept states that nature, I, e forest economy, podu (shifting) cultivation man social system, and spirit (gossaiyan) all from a complex and mutually interrelated with each other. The kondareddi have also adopted other sources of livelihood like forest labour, which includes bamboo cutting, horticulture and basket making. although the kondareddi dependent upon the traditional shifting cultivation, their constant interaction and contact with non-tribals have made some of the kondareddi settlements in the hills take to plough cultivation. Some kondareddi have also learned the techniques of tending the cattle and using them for cultivation.

Agriculture, also called farming or husbandry, is the cultivation of animals, plants, fungi, and other life forms for food, fiber, biofuel, drugs and other products used to sustain and enhance human life. Agriculture was the key development in the rise of sedentary human civilization, whereby farming of domesticated species created food surpluses that nurtured the development of civilization. The study of agriculture is known as agricultural science. The history of agriculture dates back thousands of years, and its development has been driven and defined by greatly different climates, cultures, and technologies. However, all farming generally relies on techniques to expand and maintain the lands that are suitable for raising domesticated species. For plants, this usually requires some form of irrigation, although there are methods of dry land farming. Livestock are raised in a combination of grassland-based and landless systems.

The Kondareddi communities practice a unique method of farming, namely Mixed Cropping System (MCS). The MCS enables them to cultivate cereals, leafy vegetables, pulses and oil crops together in a limited area depending on monsoon rain. The practice is such that the seeds of common millet, finger millet, grain and leaf amaranth, pulses and castor are mixed together and broadcasted. Primarily the common millet is harvested followed by finger millet. Edible leaves of amaranth and seeds and pods of pulses are used for daily consumption. Edible grains of amaranth are harvested and stored for future use. Castor seeds are harvested and used for both domestic consumption and to be sold in the market.

By virtue of their age-old indigenous knowledge on the viability of the seeds, which are used for sowing in the following season, healthy cobs or seeds are selected and stored every season thereby enhancing the genetic potential of the crop. For example, healthy cobs are left in the field so as to allow them to dry to the maximum to make sure that no moisture is left in the seeds. The selection of large and healthy seeds and also the selection based on the colour of the seeds (e.g. in the case of castor seeds) have also helped them select more viable seeds.

Storing is another important skill which is perfectly practiced by the Kondareddis. Seed material for sowing and the grains for consumption are preserved in traditional granaries made up of bamboo coated with red soil and thatched with local grass and also in earthen pots. This indigenous practice has saved many varieties of cereals, millets and legumes in the region. Knowingly or unknowingly this practice has enabled them to maintain, preserve and conserve the seed material. The reason being, owing to free flow of air in and out of these indigenous granaries, the seeds could maintain their viability. Leaves of a few botanicals, particularly neem and Vitex, are used as insect and pest repellents. Seeds of legumes are preserved along with their pods thereby preventing fungal or bacterial infection. Owing to the above practices, the genetic strains could be conserved by these tribals for a long time, which are of great value.

While doing podu / slash-and-burn cultivation they do not cut mango, jeeluga (Caryata). They cut the other tree trunks only up to two or three feet above ground level to facilitate regeneration. Even in shifting cultivation, clear felling of trees is not resorted to and the stump remains which help regeneration of tree from new shoots. Kondareddis are habituated to cultivate a plot of land for two or three years and later left it as fallow for regeneration of vegetation.

They allow only branches and undergrowth to be used as manure and ensure the future fertility of soil. They clear a portion of the forest by chopping down the invaluable trees and burn the bushes. The burnt vegetation provides nutrients to the soil. Generally, they take up mixed crops like red gram (kandulu), millets like Chollu and oil seeds. This practices of mixed cropping increases the fertility of the soil. As discussed earlier Kondareddis mostly depend on podu cultivation and their small villages lie mainly in huge hills, where level land suitable for plough cultivation is very limited or non-existent. Even very steep slopes are being cleared of jungle growth, and small millets and pulses are broadcast or dibbled in the ashes of burnt trees and brushwood. As the tree stumps are left open, there is little scope for erosion. Moreover, some of the stumps sprout again.

About 50 years ago, in papikondalu forest area it was started that the cultivation in the forest was mainly in the Swidden form (Podu) method as the kondareddi were the first settlers. Kondareddis in this region, particularly who are in hill-tops are having indigenous engineering skills in diverting the perennial water sources from top of the hills for cultivation. In terrace cultivation, they level the field just like steps of a stair-

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case and allow the water to flow from the plot on a higher level to the plot at a lower level. They use flaps of banana trunk as water pipes to facilitate free flow of water from one field to another field. They also feel guilty of cutting trees.

The current practice of shifting cultivation in this region is an extravagant and unscientific form of land use. The evil effects of shifting cultivation are devastating and far-reaching in degrading the environment and ecology of these regions. The earlier 15–20 year cycle of shifting cultivation on a particular land has reduced to 2–3 years now. This has resulted in large-scale deforestation, soil and nutrient loss, and invasion by weeds and other species. The indigenous biodiversity has been affected to a large extent

The shifting cultivation is generally practiced in the following sequence:

- Selecting a forest patch and clear fell the vegetation normally in December and January
- Burning of the vegetation. Small, cut-trunks portion and roots are normally not removed. The herbs, shrubs and twigs and branches (slashed vegetation) are burnt in February and March
- Sowing of seeds, by dibbling to cereals, vegetables and oil seeds in April-May
- · Continuing cultivation for a few years
- Abandoning the cultivated site and shifting to other forest sites
- · Returning to the former site, and once again practice shifting cultivation on it.

With reduction in jhum cycle from 20–30 years to 2–3 years, the land under shifting cultivation looses its nutrients and the top soil. With reduction in crop yield, the families start moving to other virgin areas. Frequent shifting from one land to the other has affected the ecology of these regions. The area under natural forest has declined; the fragmentation of habitat, local disappearance of native species and invasion by exotic weeds and other plants are some of the other ecological consequences of shifting agriculture.

ITDA concern about the protection of the environment and want to shift these tribals from podu cultivation to the plain land cultivation major focusing on horticulture and production of other subsistence food grains such as jowar and rice. With this intention ITDA came with several development interventions in agriculture. In this study in depth investigation has been made to find out the outputs of the interventions particularly in agriculture sector.

Type of benefits acquired under agriculture scheme:

The major benefits under the agriculture scheme are financial support for procuring seeds, fertilizers and pesticides, ploughing, weeding and intercultivation addition financial assistance was also given to the land development. Data in table 1 gives the details of beneficiaries under the agriculture scheme in the sample villages of the study.

Table – 1 Kondareddis benefited from Agriculture scheme			
Name of settlement	No. of sample House Hold	Benefited from Agriculture scheme	%
Chintoor	45	36	80
Kunavaram	45	39	86.7
VR Puram	45	22	48.9
Velairpadu	45	26	57.8
Total	180	123	68.4

Out of the total sample 68.4 percent availed the benefits under agriculture scheme. Of those availed majority are in Kunavaram (86.7 percent) and less in VR Puram (48.9 percent). In Chintoor 80 percent and in Velairpadu 57.8 percent of the Kondareddi households utilized the benefits.

Advantages with the benefits:

Analysis on the benefits of the inputs indicates that most of the beneficiaries have not benefited much. Data in Fig -1 below indicates that 31 percent are of the opinion that financial support to purchase seeds, fertilizers and pesticides have helped them economically. They said that such support is extra economical support to what they are investing on agriculture.





About 28 percent said that by using extra fertilizers they got extra yield. Similarly 21 percent said that by using pesticides they saved their crops from pest attack. About 20 percent said that by using the seeds supplied by the ITDA they got good harvest and also it added value to their produce.

This data indicates that majority are not satisfied with the inputs under the scheme. During the focus group discussions it was told that traditionally they are not acquainted with using pesticides and chemical fertilizers. Also they used to produce the seeds on indigenous methods which are having high yielding potentials.

Quality of the benefits:

When it comes to the quality of the benefits data in Fig-1. Indicates that majority that is 51 percent said that the inputs such as seeds, fertilizers and pesticides are very poor and hence it has not helped much in getting higher yield comparatively to their traditional practice. Only 22 percent said that the inputs quality is good and 27 percent said that quality is average. In their perception quality refers to high yield than before, good for consumption, more pest control.





Change in Income levels:

ITDA and agriculture extension officials have given basic training on how and when to use these inputs to the respondents. But due to their limited understanding capacity and psychologically more oriented to the traditional agricultural practices the households who availed these inputs have not got any visible additional benefits.

During the study it was told that these inputs have to given any extra financial benefits to most of the families who availed the inputs. Data in fig-3 indicates that 42 percent expressed that there is no change in their income levels from the present cultivation. Interestingly 36 percent said that their cultivation with these inputs have ended up in losses and forced them to go for hunting and collecting the minor

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produce to sustain their families. Some of such families have gone for seasonal labour in neighboring villages to eke their livelihoods.

Only 12 percent said that they got average income and 10 percent said that they were able to get more income than the yield from traditional practices. Out of the total respondents 46 got financial assistance for land development. They used this assistance to level their agriculture lands in the plains and also for bounding etc



During the focus group discussions it was told that if similar support was given to strengthen their shifting cultivation it would have benefited them much more than what now they are getting from the cultivation.

Study data indicates that majority are not satisfied with the inputs under the scheme. During the focus group discussions it was told that traditionally they are not acquainted with using pesticides and chemical fertilizers. Also they used to produce the seeds on indigenous methods which are having high yielding potentials. Now using artificially germinated seeds, chemical fertilizers and pesticides is one of the difficult tasks for them. This is because they are not technically trained on how to use pesticides and when to use them. More particularly they are of the opinion that the seeds given to them are very poor in quality and have not helped them in getting good harvest.

Using new technological inputs is the major problem for them at the beginning and it may take more time to get knowledge on how to use them. However all the respondents said that they more comfortable with their traditional methods of agriculture which is less expensive and more productive.

Another perception expressed during the focus group discussions is that using chemical fertilizers and pesticides for yield will further damage their health. Because out of the total produce, 70 percent is consumed by them and their strong perception is that consuming such food grains will spoil their normal health.

One important discussion came out during the focus group discussions are that normally they are using the agriculture residue to feed their domestic animals. When they are using the residue of products cultivated by using traditional methods of manures and pest control, they used to get good quantity of milk from their domestic cows. After feeding the residue of present cultivation the quantity of milk has gown down. They are also of the opinion that such milk may harm their infants.

There are chiefly development upon the ecological structure. The hazards of the forest are becoming increasingly more than what they were, as many restrictions have been put on them. Yet the kondareddi in the interior forest are still in partial control of the podu/ swidden form of agriculture methods. The hills slopes on which on kondareddi practice podu / shifting cultivation are believed. The plain slopes of kondareddi on the other hand, have left the shifting cultivation long ago and have taken to settled (plough) cultivation due to the impact of the peasants and forest policies.

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