RESEARCH PAPER III

Shifting Cultivation

in

Andhra Pradesh

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A N D H R A P R A D E S H

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SHIFTING CULTIVATION IN ANDHRA PRADESH

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THE introduction of agricultural innovations among the custom bound tribals resulted in the emergence of an ever recurring 'social situation' between the agricultural extension officers and the tribal cultivators. This social situation is the product of the interaction of two conflicting thought ways of the Extension Officer on the one hand and the tribal on the other. The Extension Officer who is ignorant of the typical attitudes and the peculiar customs of the tribals is too eager to introduce innovations in compliance with the directives of the higher authorities as he has to achieve the physical targets according to the plan of action given to him. Hence he invariably fails to take into consideration the social implication of the innovations he intends to diffuse into one of the vital aspects of the complex cultural frame work of the tribals. On the other hand, the

ingrained apathy of the tribal towards alien practices and sophisticated implements results in either resisting the innovation or in a sort of detached and disinterested acceptance of the improved practices. Such a situation generally results in the emergence of a hiatus between the precept of the development functionary and the practice of the tribal as they live in two different worlds. The Extension Officer embodies the sophisticated techniques of latest agricultural practices which he patiently acquired through class room teaching and by doing practicals on a modern farm equipped with advanced agricultural machinery during his student career. In contrast the tribal subsists on an 'extraordinarily intricate fabric of a traditional system of agriculture' practised on patches of land situated on the undulating slopes and jungle clearings of his hilly habitat which a small hoe and a small axe, helped by fire and the resultant ash transform into a low yielding crop. In certain other cases, far-reaching agrarian programmes that are based on extremely sound ideas, suffered severe set back due to lack of knowledge of 'some detail unimportant to our minds but all important to the tribal cultivator, and not only to him but to his natural environment'. Hence, even though the precept is sound, in practice it proved to

be a flop.

The crux of the problem is to recognise that agriculture, whether it is the primitive shifting cultivation or the advanced tractor cultivation, is one of the vital links between a human group and the 'landscape' in which it lives and which it exploits. Agriculture constituted the medium through which the people living in a particular habitat learnt a way of life from environment. It is rightly said that "the more refined functions of a culture, laws and customs, social and political organizations, morals and beliefs, are in a sense the superstructure on the foundation of agriculture"*. Even during the process of acculturation, when two distinct cultures are brought together, slowly acculturation percolates from above the whole social pyramid and reaches the food producer, who constitutes the lowest conservative social layer.

This process is amply illustrated in the tribal areas of our State. Even though the dress, decoration, political structure and behaviour patterns

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*Shifting cultivation in Africa, by Pierre De Schlippe, London, Routledge Kegan Paul, 1956. Page xii.

of tribals are undergoing rapid changes due to the long standing and increased contacts with plains people, their agricultural practices and other methods of exploiting nature remained relatively unchanged. Both advanced and primitive tribal groups still subsist on 'Podu' cultivation. The tribal belt of the State, especially the hill slopes and forest clearings of West Godavary, East Godavary, Visakhapatnam and Srikakulam Districts can be divided into innumerable small ecological problem areas, in each of which man lives in the greatest possible dependence on environment by eking out a meagre livelihood through shifting or slash and burn cultivation. These shifting cultivators are still at their subsistence level, that is at a level where each family must produce what it wants to consume. It was this 'economic situation' and the earlier mentioned 'social situation' that have given the initial impulse to study the shifting cultivation of the tribals of Andhra Pradesh.

'Podu' or shifting cultivation is one of the most baffling problems of the agro-based economy of the tribal areas eluding a permanent solution since a long time. This is not a peculiar feature of the agricultural practices of the tribals living in Andhra Pradesh

or India, but it is also a problem of the tribals inhabiting Africa, Burma and other parts of the World. This is considered to be a survival of the crude agriculture practised by the prehistoric man and Dr. Unwin dates its existence as far back as 3000 B.C. According to Dr. Verrier Elwin shifting cultivation is a definite stage in the evolution of human culture through which every human group passed and it can be safely assumed that almost all the races of the world resorted to this method of raising crops.

In India, from the Malayalars of Malabar Coast to the Nagas of Nagaland many a tribal group resorts to shifting cultivation as a means of livelihood. It is called by different names by different tribal groups inhabiting the various states of our country. It is called 'Kumri' by the Malayalars of Malabar, 'Podu' by the tribes of Andhra Pradesh, 'Bewar' by the Baigas of Madhya Pradesh and 'Jhum' by the Khasis of Assam and Nagas of Nagaland.

In Andhra Pradesh the more advanced tribal groups like Gonds, Koyas, Bagathas and Valmikis mainly thrive on settled or plough cultivation whereas their relatively backward neighbouring tribal groups like

Kolams, Hill Reddies, Khonds or Samanthas and Savaras chiefly subsist on 'Podu' cultivation. Even the advanced tribal groups sometimes subsidiarily depend upon 'Podu' cultivation if they do not have enough land for settled cultivation. While 'Podu' is fast vanishing from the tribal areas of Adilabad and Warangal Districts, it is still practised to a limited extent in the tribal areas of Khammam and West Godavari Districts. It is very much rampant in the forest and hilly tracts of East Godavari, Visakhapatnam and Srikakulam districts.

Two types of 'Podu', viz., 'Chelka Podu' and 'Konda Podu' are in vogue in the tribal areas of Andhra Pradesh. While the 'Podu' practised in plain jungle clearings and flat lands is known as 'Chelka podu', the 'Podu' confined to the hill slopes is called 'Konda Podu'. As the two types involve shifting of site from one patch to another, usually every three years or as soon as the fertility of the previous patch is exhausted, both the practices are popularly known under the common term 'Podu'.

Whether it is 'Konda Podu' or 'Chelka Podu', the same cycle of operations are followed. But there

is marked difference in the type of implements used. The most primitive implements like hoe, digging stick, hand-axe and knife are used in 'Ponda Podu' operations whereas relatively advanced technology like plough, crow bar and spade are utilised in 'Chelka Podu' cultivation and draught animals like bullocks and he-buffaloes supplement the human effort in 'Chelka Podu' operations. Besides, 'Chelka Podu' is subject to the levy of land cess which varies from Rs.1-50 to Rs.3-00 from one area to the other depending upon the size of the plot. No such tax is collected on 'Ponda Podu'.

Generally 'Podu' patches are selected by taking into consideration the existence of soft soil, thick leaf fall, shrub jungle growth, nearness to the village and the absence of heavy boulders and big trees. 'Podu' operations start as early as March or April i.e., in the early days of summer season. After selecting the suitable patch, the menfolk cut the trees and clear the bush with hand-axes and knives respectively and leave them on the podu patch to dry up till the end of April in the hot sun of the Summer. When the branches and stumps are sufficiently dried up for about one month, the head of the family visits the 'podu' patch one evening and sets fire to the dried

up branches and shrubs. Even the stumps of big trees are burnt down to the maximum possible extent. Three or four days after the burning operations, the whole family goes to the 'podu' patch and men, women and children spread the ashes all over the field. Potash and phosphates present in the ashes of the burnt vegetation enrich the fertility of the virgin soil. Further during the process of burning, the soil undergoes a sort of partial sterilization which increases the activity of the nitrifying bacteria resulting in enriching the fertility of the soil. But this fertility lasts only two or three years and after that period the exhausted patch is abandoned and another plot is selected to repeat the process.

The elderly male members of the family either hoe the field or rake it with a digging stick so as to loosen the soil and cover the ashes with the loose soil. Just before the on set of the monsoon i.e., in the last week of May, seeds are either dibbled or broad-cast in the 'Podu' fields. Pulses like redgram, blackgram, greengram are dibbled with a digging stick while small millet such as 'Sama', 'Ganti', etc., and cereals like Jawar are broad-cast. Generally in the first year single crops like redgram or Jawar are raised and

from the second year onwards mixed crops are grown. After receiving the monsoon rains, the seeds start germinating slowly and within fifteen days after monsoon break, the whole plot looks like green carpet from a distance with the growth of the seedlings. Usually no systematic weeding operations are undertaken on 'Konda Podu' whereas in 'Chelka Podu' two or three weedings may have to be done from time to time. Women and children participate in weeding operations than men. The number of weedings are also conditioned by the economic capacity and the number of family members available for such operations. The growth of weeds is also more abundant on 'Podu' fields than on the plains plough cultivated fields due to lack of intensive ploughing of the soil every year. It takes one week for a family of four members to weed out one acre of 'Podu' field.

Different crops are harvested at different times depending upon the time each variety of crop takes for ripening. For example, in Srikakulam district 'Korra' and 'Vadalu' are 3 months crops while Jawar and 'Ganti' are 6 months crops. Redgram crop takes as many as 8 months before it is ripe for harvesting.

So in a mixed crop 'podu' field, the short term crops like Korra are harvested first by reaping the corn ears with a sickle and the lon term crops are left out until their time of ripening.

When the crops are sufficiently grown to the stage of bearing corn ears they are threatened by predatory birds and wild animals. Throughout the days, until the crops are harvested, the tribals keep a constant vigil and drive away the birds by raising a din with dapna drum and empty tin beatings. They also arrange automatic snares and traps in the paths leading to the field in order to catch wild animals like boar, hare etc. When the crops are fully ripe, sometimes, the whole family shifts to the 'Podu' field and lives in a hut there. Atleast one person will be watching the ripe crops day and night from a watch tower locally called 'machan' errected in the field.

As soon as a crop is ripe both men and women undertake the harvesting operations. They reap the corn ears with a serrated iron sickle and heap them on a specially prepared threshing ground either in the field or in the front yard of their huts.

The corn ears are spread on the thrashing ground and allowed to dry in the sun for one or two days. The corn is separated from the ears by either trampling the corn ears with the help of bullocks and buffaloes or by beating them with sticks. The husk is separated from the corn by winnowing them with a winnowing fan or basket. The light husk is carried away by the wind while the relatively heavy grains fall in a heap. Thus the grains are collected and stored in baskets for future consumption if they are food grains or sold away if they are commercial crops like the niger seed, sesamum etc.

From sowing to harvesting the 'podu' operations require continuous watch and ward throughout. The rocky terrain, freak nature and predatory birds and animals restrict the yield per acre thus making it quite uneconomical. Further, due to quick soil exhaustion from the initial year to the next year, the returns will also decrease as the tribal is not even accustomed to use natural manure on 'podu' fields. The cost of cultivation analysis of single crop and mixed crop of 'podu' patches done by the Officer-trainees of Forest and Agriculture Departments deputed to

Tribal Cultural Research and Training Institute, are given below. The data were collected in Bhadragiri Block area in the year 1964.

EXPENDITURE PARTICULARS OF ONE ACRE OF KONDA PODU FIELD FOR SINGLE REDGRAM CROP

Sl. No.	Particulars of Operations.	Labour		Cost (Rs.)	
		Men	Women	Labour	Seed
I.	Pre-sowing operations				
	a) Felling of trees @ Rs.1.00	40.00	--	40.00	--
	b) Cutting of shrubs @ Rs.1.00	20.00	--	20.00	--
	c) Spreading of ahses and Hoeing:Men @ Rs.1.00 Women @ Rs.0.75	4.00	8	10.00	--
II.	Seed and sowing redgram Seed @ Rs.0.75 per seer	--	--	--	2.25
	Dibbling the seed	2	4	5.00	--
III.	Intercultural operations:				
	a) First weeding	4	20	19.00	--
	b) Second weeding	2	15	13.75	--
	c) Third weeding	2	10	9.50	--
IV.	Harvesting:				
	a) Reaping the crop	2	4	5.00	--
	b) Bundling and stacking	--	4	3.00	--
	c) Threshing, winnowing etc.	2	4	5.00	--
		26	39	130.25	2.25

Cost of cultivating one acre of redgram is 132.50

Yield of Redgram per acre is $1\frac{1}{2}$ bags or 150 Kgs.

Yield of husk per acre is 2 bags

Cost of $1\frac{1}{2}$ bags of Redgram at Rs.70.00 per bag is 150.00

Cost of 2 bags of Husk at the rate of Rs.4/- per bag is 8.00

113.00

Loss or gain = gross income-cost of cultivation = Rs.113.00 - 131.25 =

∴ Rs.113.00-131.25 = -18.25

Net loss = 18.25

This includes the imputed cost of family labour and Exchange labour. The above analysis reveals that cultivating single crops on 'podu' fields is in no way profitable to the tribals.

Similarly, cost analysis of a mixed crop 'podu' field was also done by the trainees in the same area in order to gain a comparative idea of the economics of single crop 'podu' field and a mixed crop 'podu' field. The following table gives expenditure particulars of cultivating mixed crop 'podu' plot of one acre.

COST OF ONE ACRE OF MIXED CROP OF PODU FIELD (MIXED CROPS-'JONNA','SAJJA' AND 'UDALU')

Sl. No.	Particulars of operations.	Labour		Cost (Rs.)	
		Men	Women	Labour	Seeds
I.	Pre-sowing operations:				
a.	Cutting the bush and clearing the field	10	--	10.00	--
b.	Hoeing the field	4	--	4.00	--
II.	Seeds and sowing:				
a.	Jonna 2 seers @ Rs.0.56	--	--	--	1.12
b.	Sajja 1 seer @ Rs.0.49	--	--	--	0.49
c.	Uda ½ seer @ Rs.0.40	--	--	--	0.20
d.	Sowing	2	--	2.00	--
III.	Inter culture:				
a.	First weeding	--	10	7.50	--
b.	Second Weeding	--	8	6.00	--
c.	Third weeding	--	8	6.00	--
IV.	Harvesting				
a.	Reaping 'Uda' ears	--	4	3.00	--
b.	Reaping 'Sajja' ears	--	8	6.00	--
c.	Reaping 'Jonna'	4	4	7.00	--
V.	Threshing:				
a.	Preperation of ground	--	1	0.75	--
b.	Threshing 'Uda)	1	2	2.75	--
c.	Threshing 'Sajja'	1	2	2.75	--
d.	Threshing 'Jonna'	2	2	3.75	--
		24	49	61.50	1.81

Cost of cultivation of mixed crop = 63.31

Cropwise yields

Jonna 1 bag or 100 kgs.	Rs.40.00
Sajja 1½ bag or 50 kgs.	Rs.18.00
Uda - ½ bag or 50 kgs.	Rs. 9.00
Total:	Rs.75.00

Profit - loss account:

Cost of crop - cost of cultivation =

Rs.75.00 - 63.31 = 11.69

Profit = 11.69.

This shows that the tribal derives a marginal benefit by growing mixed crops. But the fact that mixed crops are grown in the second year of 'podu' cultivation should not be lost sight of and the cost of cultivation will be less than the first year as the expenditure on felling trees and clearing the bush will be at the barest minimum in the second year. It should also be borne in mind that in both the cases the cost of protecting the crops is not taken into consideration. If this is also taken into consideration the marginal loss or profit in either case will always result in heavy loss.

'podu' is not profitable if it is entirely viewed from an economist's point of view. Its persistent existence since time immemorial is a proof of intimate and deep impact of the culture on Tribal mind and psychology. The most important factor in tribal's continued love for 'podu' cultivation is

that is forms part of his cultural milieu in which he is broughtup. It requires minimum investment of capital and can be undertaken with the simple and primitive implements which are within his easy reach. It also gives him freedom of action which the tribal loves so much. Further it can be undertaken with the help of his other family members. In the absence of much fertile land in and around his habitat, podu patch is the only alternative on which he can grow the much needed food grains. Perhaps lack of profit motive and ignorance of profit-loss account are also to some extent responsible for the continued adherence to 'podu'. Besides, his ingrained lethersy is the major hurdle in learning the complicated and complex agricultural practices of settled plough cultivation. Moreover he invariably fails to take into consideration the imputed cost of his family labour and exchange labour due to which the tribal continues to believe that he is not incurring loss. In the absence of diffusion of innovations like chemical fertilizers, improved agricultural implements and hybrid varieties of seeds the terrain in tribal areas is mostly suitable for shifting cultivation. Thus a multiplicity of social, economic and cultural factors

have contributed to the wide-spread prevelence of 'podu' in the tribal areas.

In Andhra Pradesh about 7.55% of the tribals are estimated to be engaged in 'podu' cultivation involving an area of about 42,000 acres. The particulars of area under 'podu' and the number of families practicing 'podu' cultivation in 14 T.D. Blocks of the State are furnished below:

BLOCKWISE DISTRIBUTION OF 'PODU' CULTIVATION*

Sl. No.	Block	Total Area under cultivation.	Area under 'Podu'	No. of families engaged in 'Podu'
1.	Bhadragiri	14,030-21	6,615-90	4,326
2.	Pachipenta	13,350-24	1,775-75	1,253
3.	Vararamachandrapuram	4,880-00	482-52	308
4.	Bhadrachalam	26,885-00	107-00	83
5.	Rampachodavaram	25,897-00	1,363-00	1,202
6.	Maredumilli	13,769-00	7,341-00	7,107
7.	Kunaveram	13,222-00	2,575-00	1,828
8.	Addateegala	33,155-00	353-00	305
9.	Koyyuru	2,861-30	210-00	166
10.	Rajavommangi	5,480-27	303-06	225
11.	G. Madugole	22,151-50	8,651-00	5,258
12.	Chintapalli	21,500-00	200-00	--
13.	Polavaram	4,123-49	563-28	419
14.	Pedabayalu	10,375-50	3,286-50	2,532
	Total:	2,11,700-51	42,827-01	21,605

*Approximate figures collected from Blocks as the tribal areas are not surveyed and settled.

The analysis of the table shows that the area under 'Podu' Cultivation constitutes about one fifths of the total cultivated area of the 14 blocks under review. It also shows that 'Podu' is more extensively undertaken by tribals in the Districts of Srikakulam and Visakhapatnam especially in Bhadragiri, Pachipenta (Srikakulam District), Gangaraju Madgole and Pedabayalu (Visakhapatnam District) areas of the State. It is found extensively practiced in Maredumilli, Rampachodavaram and Kunavaram of East Godaveri and Khammam Districts. Thus the problem of 'Podu' cultivation is more acute in the coastal districts of the State.

In order to guage the popularity of both 'Chelka Podu' and 'Konda Podu' among the tribals living in the villages of Bhadragiri and Seethampet Block areas of Srikakulam District a Survey was conducted in five villages in each of the two Blocks* The following table furnishes the particulars of the number of households engaged in 'Podu' and the area under 'Podu' in the 10 villages under review.

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* Survey conducted by Officers who underwent training in the Tribal Cultural Research and Training Institute, Hyderabad.

Sl. No.	Name of the village.	Total No. of House-holds.	No. of House-holds having settled culti-vation	No. of house-holds enga-ged in Podu.	Extent of land under		% of H.Hs. enga-ged in 'Podu'
					Chel-ka podu (Acres)	Kon-da podu	
BHADRAGIRI BLOCK							
1.	Iridi	63	3	50	75-00	50-00	79.36
2.	Tadikonda	90	6	90	300-00	300-00	100.00
3.	Kedarapuram	94	--	60	40-00	80-00	63.83
4.	P. Amity	84	3	70	30-00	50-00	83.33
5.	Lakkaguda	99	3	55	50.00	50-00	75.58
	Total:	430	15	325	495-00	530-00	75.58
SEETHAMPET BLOCK							
6.	Dennapuram	91	13	51	--	56.10	56.04
7.	Pedda Rama	143	17	84	--	100-80	58.74
8.	Karerguda	46	3	46	--	61.60	100.00
9.	Ombarelli	45	8	44	--	127.60	97.77
10.	Volgadda	79	1	79	--	47.40	100.00
	Total:	404	42	304	--	169-50	75.25
	Grand Total:	834	57	629	495.00	699-50	75.41

The tribals belonging to the villages of Bhadragiri Block practice both 'Chelka' and 'Konda Podu' whereas tribals of the villages in Seethampet Block undertake 'Konda Podu' cultivation exclusively. Of the ten villages, the tribals of three villages are 'Podu' cultivators only. In each of the ten villages more than 50% of the households are engaged in 'Podu' cultivation and in total 75.41% of the tribal households undertake 'Podu' cultivation. In each of the ten villages only a handful of tribals are having settled cultivation. Thus the above analysis indicates that in these villages, 'Podu' constitutes the most important means of subsistence for the tribals of this area.

During this Survey the opinion of the tribals regarding acquiring occupancy rights over the 'podu' patches and their willingness to accept alternate occupations like settled cultivation was also ascertained. The following table reveals the attitude of the tribals. The opinion of tribals towards having occupancy rights was ascertained in order to guage their depth of attachment to the 'podu' fields.

Sl. No.	Name of the village.	Attitude towards occupancy rights		Attitude towards Echewing 'Podu' and taking up alternate arrangements like land etc.	
		Willing	Not-Willing.	Willing	Not-Willing
	BHADRAGIRI				
1.	Iridi	4	16	18	2
2.	Tadikonda	1	19	20	--
3.	Kedarpuram	--	19	19	--
4.	Amiti	1	19	19	1
5.	Lukkaguda	2	20	22	--
	Total:	8	93	98	3
	SEETHAMPET BLOCK:				
6.	Deonapuram	34	6	12	28
7.	Peda Rama	27	12	39	--
8.	Karemguda	1	7	1	7
9.	Ombare-lli	17	9	--	26
10.	Volgadda	5	2	5	2
	Total:	84	36	57	63
	Grand Total:	92	129	155	66

It can be inferred from the table that there are noticeable difference of opinions between the tribals of Bhadragiri Block villages and those belonging to Seethampet Block villages regarding occupancy rights and alternate arrangements. Of the 101 tribals contacted in the 5 villages of Bhadragiri, only 8 villagers are willing tohave occupancy rights and 3 tribals are against leaving 'podu' even when they are provided with alternate lands. The tribals of these villagers are thus not in favour of sticking to 'Podu' cultivation. Somewhat contrary opinions are expressed by the tribals of the villages in Seethampet Block. Of the 120 tribals interviewed in these villages 84 tribals are agreeable to have occupancy rights over 'Podu' patches while 63 tribals are against the discontinuance of 'Podu' cultivation. Thus a majority of these tribals are against leaving the 'Konda Podu'. This shows that the tribals of this area still consider it as part and parcel of their way of life. Moreover, their reluctance to accept alternate arrangements seem to be due to the fact that they have to shift their habitat to some far off place which involves some initial inconveniences as the traditionbound tribal develops a sort of unbreakable affinity with the terrain on which he is born. This in-born

affinity to the land of his birth is more pronounced among the tribals living in Seethampet Block area as is evident from the above table. This also shows that tribals of some areas are amenable to change while the tribals of other areas are not in favour of change. Thus receptivity to changed conditions varies, from region to region and in the same region from one place to the other.

Whatever may be the nature of attachment of the tribal to 'podu' cultivation and however much it may form part of his way of life, the magnitude of the damage caused to the forest wealth and the soils of the area do not justify its continuation in the wider interests of the tribals and the plains people as well. The indiscriminate felling of the trees resulted in extensive soil erosion which is causing considerable damage to some of the public utility projects. The Machkund Hydro-Electric Project bears elocuent testimony to the magnitude of the adverse effects of 'podu' cultivation. According to the data collected by the Silt Laboratory at Jalaput, the average inflow of silt per annum into the Jalaput reservoir is 32.2 m.c.ft. as against the estimates of 27 m.c.ft. thus adversely

affecting the life span of the Machkund Hydro-Electric Project. Further the burning operations of the 'podu' field many a time start huge forest fires reducing valuable timber to ashes. The denuided mountain slopes of Araku valley, devoid of vegetative growth are another example of the evils of 'podu' fleme and the consequent soil erosion. The large scale destruction of forests also results in decreasing rainfall which ultimately causes the drying up of hill streams and big rivers which constitute the life lines of the country.

As the evil effects of 'Podu' out weigh the benefits, the Government have started many schemes for the effective control of soil erosion and for weaning away the tribals from shifting cultivation by making alternate arrangements to provide them a better occupation. The following schemes are introduced in the agency areas of East Godavari, Visakhapatnam and Srikakulam Districts under this programme.

1) Introduction of Coffee Plantations.
2) Land Colonization Scheme.
3) Machkund Soil Conservation Scheme
4) Machkund Basin Pilot Demonstration Project.

COFFEE PLANTATIONS:- The climate and elevation of some of the Scheduled areas of Visakhapatnam and East Godavari Districts are found to be conducive for the introduction of coffee plantations. Coffee Plantations are also instrumental in providing the landless tribal who resorts to 'podu', with alternate employment and also for the effective arresting of soil erosion. Hence Coffee Plantations were introduced in the tribal areas of Visakhapatnam and East Godavari Districts during the III Five Year Plan period by the Forest Department. Plantations were raised on a total area of 861½ acres by the end of 1965-66*. The scheme is proposed to be continued by bringing in an additional area of 650 acres under Coffee Plantations. There is a sharp rise in the number of labourers employed in coffee plantations from 25,490 to 1,21,549 between 1961 and 1965. This shows the important role played by the coffee plantation scheme in providing substantial employment to the tribals and in turning away the tribals from resorting to active 'Podu' cultivation.

2. LAND COLONISATION SCHEME: Under this Scheme colonies were constructed, reclaimed lands were assigned; and agricultural implements and seeds were also provided to

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*Source: P.S.Rao, C.C.F. Coffee Plantations in Agencies. Tribal Vol.4 No.1 January-June 1967. Tribal Cultural Research and Training Institute, Hyderabad.

wean away the tribals from 'podu' cultivation and settle them on plough cultivation so as to provide them a stable occupation. These colonies were established in Tajangi, Gujjumamidivalasa and Mampa-Kinchuvani Palem in Visakhapatnam and East Godavari Districts. During the First and Second Five Year Plan periods, Rs.4.79 lakhs and 10.41 lakhs respectively were spent on the scheme. An additional amount of Rs.8.24 lakhs was spent during the Second Plan period under centrally sponsored schemes. In total an area of # 2,656 acres was reclaimed and 236 tribal families were settled in four colonies. During the first four years of the Third Plan period an amount of Rs.2.07 lakhs was expended to complete 14 incomplete works that were started during the Second Plan period. One new scheme was also taken up and an amount of Rs.0.60 lakhs was provided during 1965-66 to implement this scheme.

Eventhough these colonies suffered from the usual teething trouble due to the traditional apathy of the tribal to adopt himself to new environment and way of life, slowly the tribal families that deserted the colony came back and settled down. Lack

of enough reclaimed land was also responsible for the initial exodus of tribal families from their Rehabilitated colonies to the original villages. But no sooner the land reclamation work was completed than the tribal families returned to the original colonies in order to settle down to a more beneficial livelihood viz., settled cultivation. This is indicative of the fact that development measures which are complete in every detail are readily accepted even by the tradition oriented societies. The promised development activity succeeds only when it provides them a better livelihood and environment than their traditional way of life and habitat. Failures are bound to be met with if the conditions of life in the new habitat to which tribals are shifted happen to be similar to the traditional one as the tribal prefers to retreat to his original familiar abode rather than leed the same life in the lien environment.

Four colonies were constructed in each of Seethampet and Bhadragiri Blocks in order to divert the tribals from resorting to 'Podu' cultivation and induce them to settled cultivation. In each of these villages every resettled tribal family is

provided with a hut, a piece of land, seeds, bullocks and agricultural implements. Civic amenities such as park, playground, school building etc., are also organised for the benefit of the tribal settlers. Although these schemes are very sound in principle, certain shortcomings have been noticed in the practical implementation process. The following* cases study of Kuddapalli colony in Seethampet Block illustrates how a very comprehensive scheme failed to yield the desired results due to minor lapses both at the planning stage and implementation stage. Kuddapalli land colonization scheme was intended for settling 50 tribal families who were engaged in 'Podu' cultivation in Seethampet Block. The scheme was executed at a cost of Rs.1,02,961-97. Each family was given a hut, 5 acres of land, a pair of bullocks, seeds and agricultural implements like plough, crow-bar and hand axe. In total 250 acres of land was distributed among the 50 families of the colony. In addition to these individual family assets, the colony is also provided with the following amenities for the benefit of the whole community:

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*Conducted by the Officer - Trainees of Tribal Cultural Research and Training Institute, Hyderabad in 1964.

1) A park in the centre of the colony.

2) Sports goods for children

3) One school building

4) Quarters for teacher

5) Quarters for Cooperative Sub-Inspector

6) Godown for Cooperative Stores

7) Internal roads.

Irrigation facilities were also provided to 50% of the land assigned by constructing an anicut across Kambogadda hill stream at a cost of Rs.65,000/- The Scheme was in the final stage of completion.

During the field study many shortcomings were noticed in the proper execution of the whole scheme which caused much hardship to the tribals. Of the 250 acres assigned, about 50% of the land was left uncultivated due to improper reclamation work. The undulating slopes of the land with deep gullies and high mounds hampered the agricultural operations of the tribal. The poor economic conditions of the beneficiaries prevented them from undertaking the levelling work by themselves. In the absence of follow up financial provision, stump lifting and bush clearing process was not undertaken in the second and third years of reclamation which is quite essential for the complete eradication of obstructive

jungle growth. Thus the fields were rendered useless for further cultivation from the Second Year onwards. This calls for the execution of reclamation work more thoroughly, and completely reclaimed lands alone should be allotted to tribals so that the tribals may not feel any initial difficulty in persisting with the complex plough cultivation.

Eventhough quarters and godowns were constructed for stationing a Coop. Sub-Inspector and a Coop-Sales Depot, the Society was not functioning due to the abolition of the post of Coop. Inspector and non-availability of provisions in the stores.

The School building and the huts allotted to the tribals were in dilapidated condition due to lack of follow up financial allotment for undertaking repairs. The tribals were reluctant to repair their huts and rethatch them as they were not assured of their ownership right. Unless the ownership deeds are issued assuring the tribals of the ownership right, they feel insecure of their continued stay there. Moreover, it takes sometime for the tribal to get himself acclimatised to the new surroundings and know the intricacies of the complex operations of the settled plough cultivation as most of them are accustomed to simple

shifting cultivation which requires minimum capital investment and little technical know-how.

One peculiar feature of the amenity schemes of the colony is the provisions for a park in the centre and sports goods. These two essential adjuncts of an urban colony are quite unsuitable to the traditional modes of recreation of tribals. The laying of a park in the tribal colony is like 'carrying coals to New Castles' as the tribal habitations are generally situated in picturesque natural surroundings. The sophisticated sports goods intended for the tribal children also do not suit their sports habits. The tribal children are accustomed to utilitarian sports like archery, scaling mountains and climbing trees which provide them both food and physical exercise. Hence these two costly urban cultural traits are an unnecessary luxury for the tribals of the colony.

There is also a tendency among the concerned staff to sever their connections with the colony as soon as the stipulated amounts are spent and the scheme is completely executed. But the timelag between the shifting of the tribal families to the colony and their reaping the benefits of the scheme requires constant

guidance and attention of the official executive in making the tribals feel at home with the alien surroundings and occupation. So the Block Extension Staff should continueto lend their helping hand by persistant extension work among the settlers. Much of the hardship of the tribal settlers could be ameliorated by making (a) enough follow-up financial provision at the time of working out the details of the colonisation in order to undertake the necessary repair works, (b) by under taking thorough and complete reclamation work instead of the present half-hearted attempts, (c) by assuring the tribal of his owner-shiprights over the land and the houses so as to ensure their proper maintenance by the tribals and (d) by persisting with the extension activities of the Block Extension Staff in order to assure the tribal of the sincerety of their effort and ensure the smooth switch over to settled cultivation.

Unless these factors are taken into consideration the future land colonisation schemes may not prove to be the correct and permanent solution for weaning away the tribal from his age old practice of 'podu' cultivation.

3. MACHKUND SOIL CONSERVATION SCHEME:

While land colonization schemes are intended to stop future damage to the forest wealth and soils of the tribal areas, the soil conservation schemes are introduced with an intention to protect the soils that are already affected by the 'Podu' cultivation from further erosion. No where in Andhra Pradesh the problem of soil erosion due to shifting cultivation assumed such an alarming proposition as it is in Machkund Basin prompting special schemes to tackle the grave situation. Consequently the Machkund Basin Soil Conservation Scheme was sponsored by the Government of India with the following objects :-

a) To wean away the tribals from 'Podu' cultivation and settle them on permanent agriculture.

b) To develop lands in the Machkund Basin by preventing soil erosion and replenishing the lost fertility of the soil.

c) To increase agricultural production in the area by efficient land management which includes adoption of improved farm practices.

d) To provide employment and economic relief to the hill tribes of the area.

e) To prevent silting up of Jalaput Diversion Dam Reservoir constructed under Machkund Hydro-Electric Scheme.

Under this scheme Soil Conservation Works like bunding, terracing, gully control and afforestation, both in the agriculture and forest sectors are being implemented by the Forest Department. A Divisional Soil Conservation Officer, stationed at Araku is incharge of this scheme. By the end of 1965-66, 19,374 acres of land is already tackled at a cost of Rs.12.61 lakhs. 33,000 acres are yet to be tackled.

4. PILOT DEMONSTRATION SCHEME:

In addition to the Soil Conservation scheme, it was also decided to wean away the tribals from 'podu' cultivation in order to ward off further damage by introducing the Pilot Demonstration Scheme as per the decision taken at the meeting of the Soil Conservation Board, held in June 1963. The scheme was introduced covering 5 villages each in Araku and Paderu Blocks at a cost of Rs.75,050/- spread over a period of

3 years. With a view to increase the yield of food crops, the following development measures are proposed.

i) Soil Conservation works like bunding, Bench Terracing, Stone Terracing etc.

ii) Providing irrigation facilities

iii) Free supply of improved seeds, implements, cattle and fruit plants.

iv) Subsidy for compositing.

The Scheme was implemented for 2 years and it was wound up in 1965-66 due to non-allotment of funds. In total 116 families, 67 in Araku Block and 49 in Paderu Block have derived the benefits of this scheme. The physical and financial achievements during the two years under review are given below:

	1963-64 Achievements		1964-65 Achievements	
	Physical	Financial. Rs.	Physical	Financial Rs.
1.Soil Conservation work.	96-50 acres	14,617	54 acres	13,323
2.Minor Irrigation	--	--	2 Dams	16,200
3.Free supply of Bullocks	1 Pair	200	6 Pairs	16,200
4.Free supply of Manures				
a) Amonium Sulphate	2015 Kgs	9,622	13240 Kgs	6,408
b) Bone Meal	3400 ,,		366 ,,	
c) Amonium Phosphate	--		2100 ,,	
5.Free supply of Paddy seeds.	21015 Kgs		1420 Kgs	
Improved Seeds-Ragi	270 ,,	960	115 ,,	961
Maize	48 ,,		24 ,,	
Groundnut			144 ,,	
6.Implements:				
Crow bars	43 Nos	503	37	694
Mammities(Spades)	20		73	
7.Subsidy for composting	--	--	739 Tons	739

The above discussion on the various schemes implemented by the State Government gives rise to the question whether the present land colonization schemes and pilot demonstration projects can be undertaken on large scale so as to provide alternate lands for

settled cultivation in tribal areas to all the 42,000 families engaged in 'Podu' cultivation. At the rate of 2½ acres per family it requires atleast one lakh acres of land to settle all the families engaged in 'podu' on settled cultivation. But the land available in tribal areas for settled cultivation is very limited and it is already overburdend with the ever increasing concentration of tribal population. So it is not possible to implement land colonization schemes on a large scale as the available plains land in tribal areas is too meagre to accomodate all the tribal families engaged in 'podu'. Nor is it advisable to throw them out of 'podu' lands without showing alternate substitute occupations. Perhaps this is the main reason for advocating a more liberal out look by some experts towards the continuation of 'podu' cultivation. Experts like Chaturvedi, Elwin and Sivaraman have recommended for the development of 'podu' on scientific lines so as to minimise the evil effects of 'podu'. Shri M.D. Chaturvedi former Inspector General of Forests is of the firm opinion that "the notion widely held that shifting cultivation is responsible in the main for large scale soil erosion needs to be effectively dispelled. The correct approach to the problem of

shifting cultivation lies in accepting it not as a necessary evil but recognising it as a way of life; not condeming it as an evil practice, but regarding it as an agricultural practice evolved as a reflex to the physiographical character of the land. For too long, 'Jhuming' has been condemned out of hand as a curse to be ashamed of, a vandalism to be decried. This attitude engenders an inferiority complex and unhealthy atmosphere for the launching of any development scheme seeking to improve the current practice".* The views of Sri M.S. Sivaraman, Adviser to the Programme Administration of the Planning Commission also supports the opinion expressed by Shri Chaturvedi as he observed "Actually it is a practical approach to certain inherent difficulties in preparing a proper seed bed on steep slopes where any disturbance of the surface by hoeing or ploughing will result in washing away of the fertile top soil.....in most of the interior areas where communication is not developed and no sufficient land suitable for terracing is available, 'Jhuming' alone can be done for the present and as such every effort should be made

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*Report of the Committee on Special Multipurpose Tribal Blocks, Ministry of Home Affairs, 1960 pp.48.

to improve the fertility of the 'jhumed' land". Eventhough Elwin declared that shifting cultivation is an arduous and wasteful method, he too suggested that "sartage" system adopted in French and Belgian Congo, allowing the stools to sprout up be adopted here in order to minimise the evil effects of felling trees. Sivaraman stressed the importance of raising leguminous crops for achieving soil regeneration and introducing soil binding and nitrogen planting creepers on 'podu' patches. It is also suggested to restrict 'podu' to slopes whose gradient is less than 45° with a clause to keep it fallow for a period of 10 to 12 years. Burmese method of Taungia cultivation in which it is binding on the cultivator to plant certain fruit bearing and other useful plantation seedlings on 'podu' patches before abondoning them is also worth trying. The half-plot system of NEFA and terracing the whole patch may also be favourably considered.

In conclusion, it is recommended that the whole process of weaning away tribals from 'podu' cultivation should be undertaken after carefully considering the peculiar socio-economic and cultural

traits of the people involved. The following measures are recommended both for completely eradicating 'podu' wherever feasible and for improving the present 'podu' practices on scientific lines if sufficient land is not available for inducing 'podu' cultivators to settled cultivation.

I. Wherever lands are available for starting land colonization schemes:

(a) Completely reclaimed lands alone should be assigned and necessary agricultural implements, plough bullocks, seeds etc. should be given free of cost to the tribal (b) Pattas should be issued to assure ownership rightover land and the colony house as well (c) Even after completion of the land colonization schemes necessary technical guidance should be provided by the Block Extension staff until the tribal settled down on land. (d) Sufficient spade work should be done by way of constant propaganda before shifting the tribal families to the new habitat in order to convince them of the advantages of settled cultivation. (e) These land colonization schemes should be organised as near to the original habitat of the tribal as possible since the rehabilitation of tribal families

in far away colonies results in snatching away the tribal from both physical and social environments which are very dear to him. The Social environment provides him protection and a sense of solidarity as every tribal family maintains a net work of social relations through local marriages and reciprocal visits and assistance in times of need. Hence the shifting of tribals to new colonies should involve minimum strain on these social relations as every tribal family prefers to survive or perish with the larger social group of which it is one of the vital components. This could be achieved by constructing colonies amidst other tribal groups whose social structure, code of conduct, beliefs and rituals are similar to those of the shifting families.

II. When shifting cultivation is to be continued due to lack of enough land for settled cultivation.

(a) The fertility of the 'podu' patch should be improved by introducing leguminous crops in rotation, reducing the 'podu' cropping period and by increasing the fallow period.

(b) Felling of trees should be minimised and in case it is unavoidable it should be made compulsory to keep high stumps and see that the stumps are not burnt so that they can sprout again.

(c) Soil erosion should be meinimised by encouraging contour bunding, terracing, gully plugging etc.

(d) Technical opinion favours confining of 'podu' cultivation to 10% slopes so as to minimise soil erosion and destruction of valuable forest growth. This could be done if it is possible to accommodate all the 'podu' cultivators within the stipulated gradient. If the area within this gradient is not sufficient to settle all the 'podu' cultivators, the gradient may be suitably extended so as to settle all the 'podu' cultivators with a condition that those who undertake cultivation over and above the 10% gradient should necessarily stone terrace their fields in order to thwart soil erosion.

(e) Tribals should be encouraged and provided with the necessary know-how for undertaking afforestation programmes preferably with plantation

crops like coffee, cocoa, cashew, loose jacket oranges, guave, eucalyptus etc., according to the elevation of land, rainfall, depth of soil and other crop requirements.

(f) Liberal financial help should be made available to the tribal so as to facilitate the adoption of these costly plantations. The loans can be recovered on easy instalments starting from the fruit yielding time and the tribal should be assured of the usufruct.

It must be our earnest endeavour to find ways and means of adapting modern agriculture to the ecological environment of the tribal areas. In order to mould this traditional agricultural practice of the tribals to the economic and social demands of the modern world, one should be wide awake to the realities of traditional agricultural practice and face the duty squarely. The first step in the right direction is to thoroughly study the local agriculture and interpret the traditional practice in terms of its environmental and traditional limitations so as to find a certain way to its improvement. To achieve this end it is quite essential to think in terms of

local environment instead of the terms of our sophisticated views and training.

For the successful accomplishment of this task, cooperation between two disciplines agronomy and social antrhopology is quite essential. Neither the professional research agronomist, nor the field anthropologist alone can give the necessary understanding of the nature of shifting cultivation in the tribal areas. The crucial problem, perhaps, not even of Andhra Pradesh alone but of India and of humanity as a whole, "lies in the contact zone between man and his environment, between inhabitant and habitat, and therefore between twofields of research which have not yet undergone the necessary coordination".*

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Sv.

*Shifting cultivation in Africa, by Pierre De Schlippe, Routledge & Kegan Paul, London, 1956. Page xvi.

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