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Vol XXV
No. 3

ISSN 0019-5014

CONFERENCE
NUMBER

JULY-
SEPTEMBER
1970

INDIAN JOURNAL OF AGRICULTURAL ECONOMICS



INDIAN SOCIETY OF
AGRICULTURAL ECONOMICS,
BOMBAY

goose-berrys, and strawberries could be grown. During the winter, when certain areas get covered with snow, it is possible to use the area for cauliflower cultivation. The heads of the cauliflowers are made in the plains. These are subsequently transplanted in the areas expected to be covered with snow, and these heads are buried with $1\frac{1}{2}$ " thick farmyard manure so that the head does not get affected by the frost. Experiments and experience have shown that good quality and good sized cauliflowers can be grown under this system. It has also been observed that many of the hill areas occupied by the tribals are ideal for the seed cultivation of cabbage, leek, turnip and radish. Himachal Pradesh is specially suited for a commercial crop like saffron. Therefore, special efforts to introduce such measures and agricultural practices must be made in these areas. Just the allocation of funds in the absence of proper planning and scientific recommendations will not solve the problems of the tribal people.

4. Fisheries seem to be another industry which needs to be developed in many tribal areas. Wherever possible, efforts be made to establish reasonable sized reservoirs which could be used for fish breeding. This will not only provide rich food and some extra income to the tribal people but also provide work and recreation. Such opportunities might also prevent them from moving from place to place.

5. Attention should also be paid to the growth of various forest industries, cottage industries as well as animal husbandry so that all these combined create sufficient year round employment and income opportunities for the tribals which could be instrumental in holding them attached to a particular area.

6. However, no planning or recommendation will help, unless proper communication system is provided in various tribal areas. Growth and development presuppose proper infra-structure and communication is the most basic of the same. Hence, the network of communication should receive the top priority in these areas.

DEVELOPMENT OF AGRICULTURE IN TRIBAL AREAS

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INTRODUCTION

The less privileged classes of our society have lately been getting special attention on account of their economic, social and educational problems. With a view to reducing, to the maximum extent, the economic gap between them and the upper strata of the society, urgent need for their uplift has been rightly emphasized. The Fourth Five-Year Plan, putting specific emphasis on the problems

of the scheduled castes and the scheduled tribes, states "...benefits of development should accrue more and more to the relatively less privileged classes of society, and, in particular, the scheduled castes and the scheduled tribes whose economic and educational interests have to be promoted with special care."¹

Before discussing the state of agriculture among the tribals, it would be appropriate to briefly indicate the more important characteristics of these tribes which have influenced the pattern of their economic life and the level of development of tribal agriculture. The population of the tribal communities, estimated at 30 million and accounting for 7 per cent of the total population, according to the 1961 Census, is spread all over the country, though its distribution in the various States is uneven. It is concentrated in the States of Orissa (24 per cent of the population), Madhya Pradesh (21 per cent), Assam (19 per cent), Gujarat (13 per cent) and Rajasthan (12 per cent), followed by Bihar (9 per cent), Maharashtra (6 per cent), West Bengal (6 per cent) and Andhra Pradesh (4 per cent). The tribals have remained aloof from the rest of the society for generations. They form a distinct ethnic group, with a dissimilar economic and social life from that of the society in general. Their isolated life in the scattered hilly and forest areas has resulted in their physical and mental separation from the rest of the population and, consequently, in their economic, social and educational backwardness. It would not, however, be right to consider the entire tribal class backward. It can be stratified into three broad classes, according to their socio-economic conditions. There are the tribals who are still leading a segregated and primitive life, at a very low level of economic development. Then, there is the slightly better-off section which is in between the traditionally backward sections and the socially and economically developed sections of the tribal population. Finally, comes that part of the tribal class which has been more or less absorbed in the rest of the population. It is, thus, the former two groups which require special Governmental attention to solve their economic problems.²

This paper which attempts to critically review the efforts made towards amelioration of the conditions of the tribal communities is divided into four sections, section I deals with the salient features of agriculture in tribal areas. Attempts to improve their agriculture are discussed in section II. Section III is devoted to the assessment of the various development schemes while section IV concludes with a few suggestions for future planning in this regard.

I

SALIENT FEATURES OF AGRICULTURE IN TRIBAL AREAS

The tribal economy is predominantly agricultural. Data in Table I indicate the occupational pattern prevailing among the tribals. It would be seen that not less than 88 per cent of the tribal population was engaged in agriculture, 68 per cent as cultivators and 20 per cent as agricultural labourers.

1. Fourth Five-Year Plan 1969-74, Planning Commission, Government of India, 1969, p. 4.
2. T. Sanganna, "Tribal Problems of Orissa," *Adibasi*, Vol. VIII, No. 2, July, 1966, pp. 4 and 6.

TABLE I—SECTORAL DISTRIBUTION OF SCHEDULED TRIBES POPULATION

Sectoral categories	(per cent)	
	Scheduled tribes	
1. Cultivators	68·2	
2. Agricultural labourers	19·7	
3. Mining, quarrying, etc.	3·4	
4. Household industry and manufacturing	3·2	
5. Construction, trade and commerce, etc.	5·5	
Total	100·0	

Source : Census of India 1961, India, Vol. I, Part III—(ii)—Household Economic Tables, Government of India, 1964.

Agriculture in tribal areas was mostly practised on very primitive lines and at a mere subsistence level. The salient features of agriculture in tribal areas, commonly found, were shifting cultivation, lack of irrigation facilities, primitive techniques of cultivation, small size of cultivated holdings and lack of diversification of occupations. It also suffered from the exploitation of the tribal people by moneylenders, traders, etc.

Shifting Cultivation

Shifting cultivation which is a significant feature of tribal agriculture in large tribal tracts was a direct outcome of the tribal habitation in the forest areas. The tribals relieved land of its over-growth, burnt fallen trees, shrubs, etc., and cultivated land by old methods. In most of the cases, they roamed from one part of the cleared land to the other, leaving the former unattended. A widespread practice of shifting cultivation was feared to have done a great damage to the forests. A fair idea of the magnitude of this problem can be had from the assessment in this regard, made in Andhra Pradesh, that about 2 lakh persons practised shifting cultivation on an area of about 96,000 acres.³ In Orissa, it was estimated that more than 9 lakhs of the total tribal population of about 42 lakhs were engaged in shifting cultivation on more than 4 lakh acres of land. The total area, thus cultivated, was estimated at five times this acreage since land used in shifting cultivation was changed in rotation.⁴ The problem created by this primitive type of cultivation, considered in the perspective of its unprofitable nature, assumed more seriousness. It is estimated by the Commissioner for Scheduled Castes and Scheduled Tribes that the 'slash and burn' cultivation on one square mile can support, at its best, less than 30 persons whereas the same area, with terraced cultivation, can support about 100 persons.⁵

3. B. A. Rama Raju, "Agriculture in Tribal Areas and Problems of Application of Improved Techniques," *Tribal*, Vol. 4, No. 1, January-June, 1967, p. 8.

4. *Adibasi*, July, 1966.

5. Annual Report of the Commissioner for Scheduled Castes and Scheduled Tribes, 1967-68, Government of India, 1969, pp. 4, 69 and 111.

Unirrigated Area

Another characteristic of tribal agriculture was the near absence of any irrigation facilities. Relevant data available in respect of a few States (Table II) would show that the percentage of irrigated to the total cultivated area under tribal farming was much below the State percentage.

TABLE II—PERCENTAGE OF IRRIGATED TO TOTAL CULTIVATED AREA UNDER TRIBAL FARMING

State	Percentage of irrigated to total cropped area in the	
	Tribal districts	State as a whole
1. Gujarat	Nil to 1.5	6.2
2. Madhya Pradesh	0.3 to 2.5	6.4
3. Maharashtra	0.6 to 4.3	5.6
4. Orissa	0.3 to 6.3	14.3
5. Rajasthan	2.0 to 4.0	12.0

Source : Report of the Special Working Group on Co-operation for Backward Classes, Vol. I, Government of India, 1962, p. 26.

Primitive Stage of Agriculture

Cultivation of land among the tribals was mostly backward and at a primitive stage. Lands under shifting cultivation were exposed to erosion to a large extent, followed by absence of any protective measures. This resulted in further loss of fertility of land.

Low Quality of Land

Lands even under settled farming were comparatively poor in quality. These had to be kept fallow for two or three years after cultivation of even one or two crops, if a reasonably good crop was to be expected.

Absence of Improved Techniques

The tribals, having settled in isolated, and in certain cases, inaccessible areas, were seldom approached by any development agency to educate, and, thus, to persuade them to adopt the improved techniques of agriculture. Use of fertilizers, improved seeds and pesticides, agricultural implements, etc., was, therefore, seldom evident among the tribals.

Incidentally, the deciding factors of the agricultural returns in certain tribal areas were still considered to be supernatural forces rather than agricultural techniques. A good crop or an improvement in the fertility of soil, it was believed, came from the benevolence of the spirits, and the deities they worshipped. Any

crop failure was ascribed to the wrath of the deity.⁶ These beliefs and superstitions of the cultivating classes stood in the way of investment in land.

Co-operative Credit

Co-operative credit for agricultural purposes at reasonable rate of interest was not in the easy reach of these tribes. In very few areas have the tribals been approached by any agency to join the co-operative movement. This was, perhaps, due to their weak pecuniary position and insufficient security. Procedures and formalities involved in organizing societies, getting loans sanctioned, etc., also seem to have discouraged these backward classes from coming in the co-operative fold.

Land Alienation

Consequently, the tribal cultivators invariably borrowed loans by mortgaging their lands to the moneylenders who indulged in manipulation of accounts and subsequently, grabbed the lands. This resulted in alienation of the tribal land. A number of other factors like the present green revolution, a continuous process of urbanization, exploitation of the minerally rich areas as in Bihar, requirements for land for factory sites, townships,⁷ etc., also resulted in a rise in demand for and, hence, the value of tribal land. This was sufficient to incite the tribal farmers to sell their cultivable holdings, leading to alienation of land.

Cropping Pattern

As is only to be expected, crops were raised by these classes only for the limited objective of meeting domestic requirements. The tribal economy itself, particularly in the interior areas, was mostly non-monetized and non-commercial in nature. Consequently, cash crops figured little in their cropping pattern.

Low Per Acre Production

As a result of these various factors which were responsible, directly or indirectly, for keeping tribal agriculture backward and divorced from improved techniques of cultivation, the per acre return in tribal agriculture fell very low when compared to that in the non-tribal areas. Though a comparative assessment on all-India basis is not possible due to paucity of comprehensive data, a fairly good idea of the comparative position can be formed from the data given in Table III relating to some districts in Madhya Pradesh.⁸

The difference in the two cases was actually wider than apparent, since the figures in Jhabua, Dhar and Khargone were boosted up due to the inclusion of cash crops, *viz.*, cotton and groundnut which was a rare feature in tribal agriculture. Large tribal areas in the districts of Bastar, Surguja, Durg, Raigarh, Mandla and Shahdol, on the other hand, were covered under low-valued crops, *viz.*, coarse rice, *kodon*, *kutki*, *kosra*, etc.

6. *Adibasi*, Vol. X, No. 2, July, 1968, p. 38.

7. A Report on the Situation in the Tribal Areas of Bihar, Government of Bihar, 1968, p. 10.

8. A Study of the Tribal People and Tribal Areas of Madhya Pradesh, Government of Madhya Pradesh, 1967, pp. 2 and 22.

TABLE III—GROSS VALUE OF CROPS PER ACRE IN TRIBAL AND NON-TRIBAL DISTRICTS OF MADHYA PRADESH

Non-tribal districts	Tribal districts	Per acre gross value of crops (1963-64) (Rs.)
Mandsaur	151.5
	Jhabua	131.3
	Khargone	128.4
	Dhar	138.9
Jabalpur	141.9
	Mandla	96.4
	Shahdol	100.1
Raipur	213.7
	Bastar	173.4
	Durg	145.6
	Raigarh	184.2
	Surguja	150.9

Small Size of Cultivated Holdings of Land

Another characteristic of tribal agriculture was the small size of land holdings. According to the Findings of the Dhebar Commission (1960-61),⁹ the size of the per capita land holding in tribal areas was appallingly low and varied from less than one acre in Assam and Andhra Pradesh to 2.7 acres in Madhya Pradesh. In the absence of irrigation facilities and improved techniques of cultivation, there was no possibility for these cultivators to eke out more than a subsistence from the small holding.

Lack of Occupational Diversification

As much as 88 per cent of the tribal population depended on cultivation. With the exception of collection of forest raw products, etc., there was little evidence of efforts to exploit other natural resources for which there was good scope, say, for animal husbandry in the areas with grazing facilities, fisheries in the areas with water reservoirs, or poultry or piggery, etc.

Exploitation of Tribals

Exploitation of the tribal cultivators by the moneylenders, forest contractors and the village merchants put a great strain on the already delicate financial posi-

9. Annual Report of the Commissioner for Scheduled Castes and Scheduled Tribes, 1968-69 Government of India, 1969, p. 26.

tion of the tribals. The incidence of exploitation was so high that, according to an estimate in Madhya Pradesh, its prevention would mean saving of as much as 20 per cent of the tribals' annual income.¹⁰ The moneylenders exploited them through high rates of interest and manipulation of accounts and the forest contractors through low wages, etc. Likewise, the village merchants, taking unfair advantage of the farmers' ignorance of weights and measures and the prevailing market rates, exploited them both ways, *i.e.*, while selling to the tribal farmers their requisites, as well as while purchasing from them the agricultural produce and the forest products.

II

ATTEMPTS MADE TO DEVELOP AGRICULTURE IN TRIBAL AREAS

Certain efforts to modernize tribal cultivation by introducing improved techniques appear to have been initiated only in 1956, when the tribal development blocks scheme was taken up.

This scheme aimed at accelerating the pace of an all-round tribal development, including agriculture. Hence, these blocks were to be treated as intensive development blocks. In the field of agriculture, the main objective of this development scheme was to encourage settled instead of shifting cultivation, terracing slopy lands, providing irrigation facilities, diversifying employment by encouraging other occupations such as horticulture, arts and crafts, as also improvement of communications in the tribal areas. The tribals were to be acquainted with the scientific methods of cultivation. The blocks were selected on the basis of compactness and lack of development in areas where the tribals constituted at least 66 $\frac{2}{3}$ per cent of the population.¹¹ The Scheduled Areas and Scheduled Tribes Commission in 1961 recommended the lowering of this percentage, probably to give a wider coverage to the scheduled areas but the recommendation did not appear to have been accepted. The number of such blocks at present is about 500.

Various agricultural development programmes, taken up under the Five-Year Plans, were expected to confer benefits on the tribal cultivators in general. Owing to various basic handicaps arising out of their peculiar and distinct way of life, however, the tribals could not take much advantage of these programmes. In view of the special conditions of the tribal farmers, specific measures were required to be taken to convince and induce them by giving adequate incentives for adoption of the improved farming techniques. Steps in this regard were being taken in some States. For instance, in Maharashtra, plough cattle were supplied free of cost and improved seeds at 50 per cent cost to the tribal farmers in some areas. Again in Marathwada area, bullocks, ploughs, seeds and agricultural implements were supplied to them free of any charge. The total expenditure incurred during the First and the Second Five-Year Plans and provisions made in the Third Plan for the development of tribal agriculture in the country were estimated at Rs. 2.7 crores, Rs. 4 crores and Rs. 7.5 crores, respectively.¹²

10. A Study of the Tribal People and Tribal Areas of Madhya Pradesh, *op. cit.*

11. Annual Report of the Commissioner for Scheduled Castes and Scheduled Tribes, 1964-65, Government of India, 1967, pp. 51 and 69.

12. Annual Report of the Commissioner for Scheduled Castes and Scheduled Tribes, 1964-65, *op. cit.*

Centrally Sponsored Schemes

In States such as Andhra Pradesh and Orissa, Centrally sponsored schemes were undertaken to wean the tribals away from the shifting cultivation. The schemes were adopted in the catchment areas of the river valley projects, and were expected to benefit 3,417 hectares in Andhra Pradesh and 4,800 hectares in Orissa. The expenditure on these schemes, during the year 1967-68 in the two States was estimated at about Rs. 14.7 lakhs and Rs. 25 lakhs, respectively.¹³ There were, however, cases where emphasis was subsequently shifted from the tribals. For instance, in Andhra Pradesh, a Centrally sponsored scheme of coffee plantation in Visakhapatnam district was initiated with a provision of Rs. 23.8 lakhs, with the main objective of eradicating the practice of shifting cultivation among the tribals there. These areas were to be subsequently allotted to the tribals working thereon. At the end of the Third Plan, however, the plantation was converted into a demonstration-cum-research centre since, it was alleged, the tribals did not have the technical knowledge and financial backing.

The small farmers' development agencies, which are now being set up, are expected to include the *adivasis* and the hill tribes also in the economic development programmes in the selected areas.

III

ASSESSMENT OF THE DEVELOPMENT SCHEMES

The tribal development block scheme succeeded generally in improving the administration of the tribal areas and in inducing the tribal land holders to take to scientific and improved techniques of agriculture.

The working of the scheme, however, suffered from various shortcomings, *viz.*, coverage of limited population, absence of socio-economic surveys in the States, expenditure on large rather than minor development schemes to yield quick results, lack of co-ordination among the agencies concerned with the development programmes, lack of participation by the tribals in the development programmes owing to their shy and non-vocal nature resulting from a long isolated life, absence of any attempts to mobilize local leadership, inefficient administration, etc. Consequently, the scheme did not yield the desired results. Again, owing to certain drawbacks in the working of the Centrally sponsored schemes, like shifting of the emphasis from the tribals, the expected results could not be achieved.

In general, no systematic efforts appear to have been made by the extension agencies to rope in the tribal cultivators to adopt scientific methods of cultivation. The high-yielding varieties programme and the intensive agricultural area programme did not appear to have been specially designed for the tribal cultivators, according to their conditions. The tribal cultivators, on the other hand, were no less responsive than the non-tribal ones to the improved techniques of cultivation, as was indicated by various surveys. In a recent enquiry in the changes in agri-

13. Annual Report of the Commissioner for Scheduled Castes and Scheduled Tribes, 1967-68, *op. cit.*

cultural practices in two tribal areas of Gujarat State, *viz.*, Khedbrahma Tribal Development Block (Sabarkantha district) and Nani-Vahiyal Tribal Development Block (Bulsar district), it was brought out that various improved practices had been adopted by the tribal cultivators. The main reason for this development was reported to be direct contact of the tribal cultivators with the non-tribal ones engaged in improved cultivation. The percentage of households engaged in shifting cultivation in the former area had declined from 47.4 per cent to 8.5 per cent within a period of about ten years.¹⁴

Experience showed that whatever advantages accrued from the development programmes went mostly to the economically stronger and more vocal sections, further accentuating the economic disparities among the more advanced and less progressive tribal sections.¹⁵ The weakest among the tribals, thus, mostly remained neglected.

IV

SUGGESTIONS

The foregoing review of the schemes for the development of tribal areas points to the need for a reorientation in the present approach to this problem. The lines along which this orientation should take place are indicated below:

(1) The development agency's approach to the tribal farmers should be such as would attract the tribals out of their shell of isolation and induce them to participate in the various development programmes. Selection of such an agency should, therefore, be very judicious.

(2) The development programmes for the tribal areas should be realistic and there should be sufficient flexibility therein for adjustment to the local requirements. Emphasis should be more on the actual participation of the tribals in such programmes than on mere achievement of physical targets.

(3) The co-operative movement should be popularised among the tribal farmers to cover all-round activities. Integrated service co-operatives with sections of grains, loans, marketing and consumers' goods, as recommended by the Special Group on Co-operation for the Backward Classes (1962) should go a long way in helping the tribals. The agency to popularise co-operation must, however, be such as would have deep and sympathetic understanding of the tribal problems.

(4) Occupations, other than agriculture, should be encouraged among them and co-operative institutions should meet the requirements of the tribals, in this connection.

(5) In land distribution schemes, priority should be given to make the non-viable holdings of the tribal farmers viable. Frequent changes in the objectives of this policy should be avoided.

14. *ibid.*

15. Annual Report of the Commissioner for Scheduled Castes and Scheduled Tribes, 1965-Government of India, 1967, p. 143.

(6) Effective and adequate steps should be taken to stop exploitation of the tribals in the form of land alienation, high rates of interest, etc. Legislation, already passed, should be effectively implemented and any loopholes therein should be thoroughly plugged. Steps to make the legislation comprehensive are most necessary.

(7) The flow of the benefits of the various development programmes should be diverted from the better-off tribal sections to the weaker sections. For this purpose, steps like giving preference for development schemes to the most backward parts of the tribal areas, enrolling members for the co-operative societies from the weaker sections on preferential basis, etc., should be taken.

SHIFTING CULTIVATION IN THE HILL TRACTS OF INDIA

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Shifting cultivation is the traditional method of agriculture followed by the tribal people in the hill tracts of India. It is characterized by a rotation of fields. A field is generally cultivated for one to three years, and this is followed by a long fallow period ranging from 6 to 20 years.

The need to shift the field under cultivation arises because the hard natural conditions in the hill areas and the agricultural practices followed by the tribals lead to an increasing decline in the fertility of the soil. In order to understand this decline in fertility it is necessary to briefly describe the method of shifting cultivation from the time a new area is selected for cultivation.

Various factors influence the selection of a site for cultivation. The most important factors as brought out by the village surveys of Waromung¹ an Ao Naga village and Jara,² a Dafla village in NEFA are firstly, that the land has been left fallow for a sufficient number of years to enable it to recoup its fertility and therefore has become fit for cultivation; secondly, the land should not be rocky or have soil that will erode easily; thirdly, the slopes of the hills should be exposed to sunlight; fourthly, the site should have a large number of trees because trunks of trees are necessary for fencing; fifthly, proximity to a river or stream is essential, for although water is not necessary for irrigation it is important for the persons staying in the fields during the period of cultivation; sixthly, in villages where the homes are not shifted distance from the residence is an important considera-

1. Waromung, An Ao Naga Village, Monograph Series, No. 1, Office of the Registrar General of India, Ministry of Home Affairs, Government of India, New Delhi, Piyushore Fine Art Press, Indore, 1966.

2. Socio-Economic Survey of Jara—A Dafla Village in NEFA, Office of the Registrar General, Ministry of Home Affairs, Government of India, New Delhi, Nai Dunia Press, 1966.