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ORISSA ECONOMICS ASSOCIATION
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CONTENTS

RURAL DEVELOPMENT : PROBLEMS AND CHALLENGES

Dr. BAIDYANATH MISRA

In recent years, there is a considerable amount of awareness that without a comprehensive rural development neither economic growth nor social justice can be attained in India. Further, specific programmes have been designed to attack rural poverty, like SFDA and MFAL. Small farmers, marginal farmers, and agricultural labourers are on the lower strata of the economic ladder. They therefore need special assistance for economic development. In fact, in our process of thinking, we have gone a long way in the development pattern of our country, from gigantism in the second plan (in the industrial sector) to balanced development in the 3rd plan, and rural development along with specific projects in the 4th and 5th plans.

Gigantism

In the early days of planning, when hopes were high and expectations were many, industrialization was considered to be the key to economic progress. Three questions dominated the minds of the planners. First, basic and heavy industries will set the pattern of industrial development. This development will divert surplus people from agriculture for absorption in industries. Since there is an institutional wage in agriculture which is much below the industrial wage and even higher than the marginal productivity of labour, the diversion of rural labour will not increase wage rate in the industries. This means that the surplus in the industrial sector will play a crucial role in the development process of the country. Secondly, both foreign aid and agricultural surplus will finance the industrial development. India had attained a tremendous goodwill after independence due to its policy of non-alignment with a commitment to modernization on the basis of democracy, socialism, secularism, etc. Foreign aid was therefore not a great limitation. Further, economists made a powerful case for additional taxation from agriculture for realizing surplus generated due to investment made in industries and infrastructure which directly and indirectly benefited agriculture. There were also examples to support their contention. In Japan, capital moved from agriculture to industry

by way of taxation, between 1880 to 1900, land tax provided approximately 80 per cent of the central Government taxation. In case of Soviet Russia, the Government expropriated the surplus from the collectives and state farms by imposition of fixed levy. And in Western Europe and particularly in England, surplus from agriculture was transferred voluntarily through a rapidly expanding banking system. It was therefore taken for granted that agriculture which was not heavily taxed can contribute substantially for industrial development. Particularly when industrialization relieved the pressure of working force in agriculture and thus helped to increase the productivity of those who chose to remain in agriculture, there was scope for realizing surplus from agriculture.

The third was the question of social justice. Even though some specific measures were taken to help the poor and invalid, and provide employment opportunities to those who were willing and able to work, it was taken for granted that economic development will somehow solve the problem of poverty. The main emphasis was given on the expansion of the public sector. If the public sector occupies a commanding height, the inequality in the economic system can somehow be surmounted and benefits will accrue to the common man as a matter of natural consequence.

But later events showed that this strategy did not pay off. Industries could not absorb surplus population of the country. On the otherhand, population explosion aggravated unemployment and under-employment problem in the country. Agriculture could not supply the required surplus for economic development. Apart from the political pressure which gave a powerful support to farmers' lobby, agriculture itself was faced with a considerable amount of uncertainty due to natural hazards, foreign aggression and lack of suitable strategy for agricultural development. Even there was acute shortage of basic foodgrains. Prices went on jumping. In spite of certain measures to increase the production of agricultural commodities in the third plan, agriculture did not show signs of response to incentives offerd by the Government. And the public sector could not bring about an improvement in the distribution of income in the country. On the other hand the private sector enriched itself at the cost of the society due to the investment made by the Government to create a base for economic development in the country. In fact, by about 1968-69, the cup of misery was full due to rising prices, growing unemployment, inequality in the distribution of income and so forth.

Wealth for a few—poverty for many

It therefore dawned on the planners that unless the productivity of agriculture increased it would not be possible to contain the imbalances stated above and improve the base of the economy. Fortunately for us, the miracle seed appeared on the scene just at the time to give a new lease to the planning process in India. Along with high yielding variety of seeds and new package of practices, a new technology was evolved for increasing the productivity of land. This again generated a lot of hopes in the country and in some parts of the country and in some crops, there was a revolutionary change, so much so that the economists started of talking of green revolution.

But the basic malady of the country could not be removed. The green revolution that was set in the country created *much wealth for a few but simultaneously, and necessarily greater poverty for many*. The main purpose of the new technology including the package programme was designed for an increase in agricultural production rather than improving the welfare of the poor. There was no longer participatory concepts of community development. This was a programme to help the enterprising cultivators to invest more, produce more and thus grow richer in the process. The criterion of profitability which was dominant in industrial enterprises was shifted to traditional agriculture giving rise to (1) emergence of capitalist farmer in the rural areas, (2) eviction of tenants from land, (3) sale of land by small and marginal farmers since it was not possible for them to support their small farms by leased in land (distress sale), (4) increase in the marketable surplus of the large farms which accounted for the bulk of the cropped area and (5) increase in the concentration of land ownership. The new technology of agricultural development intensified inequalities in the rural areas. This transformation brought about a new dimension to the rural economy, from the mildly egalitarian measures of the fifties, to a capitalist development towards the end of sixties.

Inegalitarian agricultural technology

The field studies conducted by the Reserve Bank of India, the reports of which were released recently[1] show clearly that planning

1. All India Debt and Investment Survey 1971-72, Field Study conducted during 1967-69 on the specific problems faced by small farmers in their farm business under different agro-economic environmental conditions prevailing in the country and Role of co-operative credit in increasing farm production for the period 1963-64 to 1965-66.

as practised in the last 25 years has hardly made any basic change in the structure of the rural economy. In fact the relative economic position of the mass of the rural population has deteriorated and the major instruments of change evolved over a period of years, the co-operative credit system, the land reform measures, the Intensive Agricultural Areas Programme, and the High Yielding Varieties Programme have contributed to this deterioration. The reasons cited for this deterioration are many. One of the important disabilities is insecurity of tenancy for a large number of small farmers. Consequent upon the land reforms legislation, many tenants have been deprived of their existing tenancy rights through the device of resumption of land by land owners for self-cultivation, reducing them thereby to the status of agricultural labourers. Further, in most of the cases where tenancy prevailed rents are generally not on the lines prescribed by law and tended to be higher. Though there is explicit legislative provision in some states that the land owners should contribute to farm expenses in case they got higher rents, there was no sharing of current farm expenditure by land owners. Rental payments to land owners were a dead weight on the slender economic resources of small farmers.

When we look at credit needs, and availability, lack of institutional credit stands out as a major disability of the small farmers. Even the cooperatives which were designed to help the small farmers appear to have failed to provide even a modicum of substitution and competition to the private money lenders. Even the cooperative credit given to the rich farmers during the last 25 years have not helped to improve agricultural output. In many cases more than 40 per cent of co-operative credit have been diverted to unproductive purposes. On the other hand, there are reasons to believe that the enormous amounts of institutional funds pumped into the rural areas have largely gone to bolster the holding power of rich farmers and to finance asset building by them.

As can be seen from the above table, those having assets of Rs. 20,000.00 and above per household had formed about 5 per cent of the total number of all rural households and had possessed about 37 per cent of total assets in 1961-62. In 1971-72 the proportion of those with assets of Rs. 20,000.00 and above was 14.97 per cent and their share in the total assets went up steeply to 61.04 per cent. In other words, in 1971-72, about 85 per cent of the households had assets of less than Rs. 20, 000.00 per household and taken together they possessed only

TABLE 1

PERCENTAGE DISTRIBUTION OF RURAL HOUSEHOLDS ACCORDING TO VALUE OF ASSETS AND SHARE OF EACH ASSET GROUP TO THE TOTAL VALUES OF ASSETS (ALL HOUSEHOLDS)

Asset Size	1961-62		1971-71	
	Proportion of Households	Share of the Asset group	Proportion of House-holds	Share of the Asset Group
Less than Rs. 500	17.9	0.8	11.38	0.23
Rs. 500-Rs. 1000	12.2	1.7	8.35	0.53
Rs. 1000-Rs. 2500	22.9	7.1	15.49	2.30
Rs. 2500-Rs. 5000	19.0	12.7	16.09	5.17
Rs. 5000-Rs. 10,000	14.7	19.3	18.31	11.63
Rs. 10,000-Rs. 20,000	8.3	21.4	15.40	19.12
Rs. 20,000-Rs. 30,000			6.24	13.40
Rs. 30,000-Rs. 50,000	5.0	37.00	4.83	16.22
Rs. 50,000-Rs. 1,00,000			2.94	17.55
Rs. 1,00,000 & above			0.96	13.87

39 per cent of the total assets of the rural population. Significantly the degree of inequality is sharpest precisely in the areas where the impact of HYV programme has been felt the most viz. Punjab and Haryana. For the country as a whole, 1.28 percent of the cultivator households had assets of Rs. 1 lakh and above per household and they possessed 14.32 per cent of total rural assets. In Punjab, as many as 17.94 percent of cultivator households had assets of Rs. 1 lakh and above per household and they appropriated more than 51 per cent of the total assets of rural cultivator households in the State. In Haryana, the corresponding proportion were 8.51 per cent of households accounting for 32.34 per cent of total assets.

Need for a fundamental change in rural base

By about 1970-71, the Government launched a number of special projects like SFDA, MFAL, CSRE to have a dent on rural poverty. In the beginning, the progress of these schemes was extremely slow. Even now the results achieved do not seem to be encouraging. One cannot underestimate the ability of entrenched landed interests to defeat the basic objectives of these special projects including land reforms. It is also needless to comment on the working of bureaucracy

in implementing such projects. Apart from its inefficiency, it has also an inherent bias in favour of the rich. If one takes the overall income position of the country, one cannot say that there has been any significant improvement in the economic condition of the poor. On the other hand, because of the new agricultural strategy, higher farm prices, subsidized inputs and credits made available to them and virtual absence of taxes on their incomes and assets, rich farmers have made substantial gains creating greater inequality in rural areas. Some individuals might have been benefited by these special projects. But the overall position is as unsatisfactory, if not more, as it was in the beginning of the 4th plan.

All this implies that to create an atmosphere favourable for the successful implementation of the special projects, the rural base should undergo a fundamental change. There should be an atmosphere of equality and non-exploitation among the villagers. Two things must happen. One is the breaking the power of the village oligarchs who have been exploiting the poor since time immemorial. Land reform is basic to this change. Land reform measures like fixation of ceilings, tenancy reform and consolidation of holdings will not only create conditions for evolving, as speedily as possible, an agrarian economy with high levels of efficiency and productivity, they will also bring about a fundamental change in power structure in the rural areas by removing big land lords, providing some land to the poor cultivators and landless labourers and thus enabling them all to cooperate with each other for rural reconstruction at a level of equality.

Second, the Government must become an instrument of the ordinary people. There is now a dichotomy between the administrator and the rural poor without any common interest or understanding. In fact, their interests, attitudes and sympathies are so diametrically opposed to each other that the persons appointed to improve the economic base of the rural poor prefer, to live in urban centres, making some casual visits to the rural areas. It is an acknowledged fact that only institutional changes cannot bring about a change in the atmosphere unless attitudinal changes are geared to these institutional changes. We have created a number of healthy institutions. But we have lagged in spearheading the attitudinal change, to fit in with these institutions. In the coming years, to succeed in our measure to attack rural poverty, we must meet these new challenges so that the new pattern of rural development which we have envisaged can fructify.

DEVELOPMENT STRATEGY FOR THE WEAKER SECTION OF ORISSA

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Even after the completion of four five year plans the economic progress of the country falls far short of our expectations. The sectoral and regional imbalances that persist in the economy even to-day do not speak much of our efforts at planning. What is particularly distressing is that this pattern of imbalance is working against the interest of the weaker section making a complete travesty of our much flaunted objective of social and economic equality. Happily the authorities are fully aware of this sad state of affairs and have taken steps to set up specialised agencies for working for the upliftment of the economically backward class in the country. The SFDA, MFAL and TDA are a few of such specialised agencies created during the Fourth Plan.

In this short paper we attempt an assessment of the weaker section of the agricultural population of Orissa in order to work out some strategy for their development. We shall direct our attention principally to the operators of small holdings as we feel that landless agricultural labourers, though form the bulk of the rural population, are rather difficult to be manipulated by any development strategy unless they are drawn into a vast construction programme which offers direct employment opportunities in very large numbers. On the other hand a strategy which is built around farm planning based on higher land use intensity and creation of an improved level of agrarian infrastructure will indirectly benefit them through the generation of additional employment at the village level.

While the average holding size is some where around 2 hectares in Orissa, a vast majority are operating at much below this size. In a recent study by the Central Rice Research Institute, Cuttack in collaboration with the International Rice Research Institute, Philippins, a survey of two villages had shown that the median of the holdings was

only 0.6 hectars. With this none too happy land and consequent resource base the farmer is continuing his struggle for survival. His position is further compromised by the fragmented and scattered nature of his holding.

Some idea about the economic condition of a small farmer with a holding size of 0.60 hectare can be had from the case study which was prepared in connection with the study mentioned in the previous section. The farmer planted two crops of rice in the dry and wet season of 1972, the areas being 0.4 hectare in dry season and 0.6 hectare in the wet season. He also grew some vegetable in dry season on 0.2 hectare. The total income of the farm family for the year 1972 is shown in the next table.

Income from rice cultivation

Dry Season	Rs. 670.00
Wet Season	Rs. 475.00
Total :	Rs. 1142.00
Income from sale of vegetables	Rs. 150.00
Total Family Income :	Rs. 1292.00

Converted into per hectare the figure comes to about Rs. 2,157.00. This is the economic condition of the majority of small farmers in Cuttack District and holds true with the minor variation for the entire state.

What promise then for a better future can be held out for him ? Will it ever be possible to take him out of the present squalor of economic misery ?

We feel that the case of the small farmer is not totally lost. Progress in crop and animal husbandry in India has made available to us possible means for achieving a better and viable future. Improved cultural practices based on the use of better, chemical fertilizers and plant protection chemicals can substantially increase agricultural production and income. This is best illustrated by another case study in connection with the same study. This farmer had one hectare of land and put all of it under the high yielding variety in the dry season. In the wet season he relied mostly on the traditional and improved local varieties.

He netted a total income of Rs. 4360.00 from rice cultivation in 1972 the respective figures for the dry and wet season being Rs. 2832.00 and Rs. 1484.00. The increase in income in this case over the first farmer was brought about mainly by better cultural practices involving the use of recommended levels of fertilizer and pesticides which the first farmer neglected.

Even greater income in farm income is possible through a suitable choice of multiple cropping pattern. The National Demonstration Trials conducted in 1972-73 by Central Rice Research Institute, Cuttack-6 have shown that it is possible to earn from one hectare of irrigated land Rs. 5322.00, Rs. 5688.00 and Rs. 7844.00 respectively from three three-crop cropping patterns namely rice-biri (black gram)-rice, rice-ragi-rice and jute-rice-rice. The cultural practices for these cropping pattern, however, involved quite heavy expenditures on fertilizer and plant protection. The figures for the three cropping patterns in the order mentioned are Rs. 1104.00, Rs. 1137.00 and Rs. 1197.00 for fertilizer and Rs. 250.00, Rs. 255.00 and Rs. 252.00 for Plant protection. Other experiments in the Central Rice Research Institute, Cuttack-6 have proved that crops like wheat, barley, maize, mustard, g. nut, potato, pulses and short duration vegetable crops can be successfully introduced in a three-crop cropping pattern with two rice crops, the staple cereal food in Orissa. Experiments on multiple cropping programme under rainfed condition have also indicated encouraging trend but the element of risk due to weather continue to remain a major constraint in this area.

Subsidiary occupations like dairy and poultry can add substantially to the farm income. We again draw upon the experience of the farmer in the second case study mentioned earlier. He maintained a small dairy unit of 4 cows, 2 of which were in the milch stage. He got about 6 litres of milk and got a net income of Rs. 1460.00 from the sales. In addition he ran a poultry with 50 layers with a daily egg production between 25 to 30 eggs. Sales from the poultry fetched him an yearly income of Rs. 1100.00.

From the above discussion it is apparent that by combining dairy and poultry to a three or more crop multiple cropping programme, it is possible for a farmer to have an annual income between Rs. 7,000 to Rs. 10,000. The picture is rosy indeed. Why is then that it has never

happened ? The first author conducted a survey of 21 villages in Cuttack district to obtain information on the poor impact of the National Demonstration Trial in the district. He was appalled to find that the proportion of triple cropped and double cropped area hardly exceeded 5 and 30 per cent respectively in most of the villages. The HYV rice area in wet season was restricted to a mere 5 per cent of the total rice area but generally exceeded 50 per cent in the dry season. The major reasons attributed for this were lack of credit, fertilizer, plant protection chemicals and irrigation water during the summer month. Difficulties about drainage and consequent water logging contributed to the lower adoption of HYV rice in the wet season. In addition to the shortage of critical inputs like credit, fertilizer, insecticides and pesticides the farmers were plagued by the irregularity of their supply. In almost all the villages the farmers stressed that consolidation of land was an essential precondition to the adoption of improved technology and multiple cropping. Added to all this was an obvious lack of information about the modern farm technology. The Gram Sevak is not only himself ill-educated, he has also to look after far too many villages to do full justice to his duties.

We have thus arrived at the crux of the strategy for the development of the weaker section of the farming population. Essentially it involves the supply of inputs and some land development programme combined with a viable extension service. We propose that land development and input supply should precede information supply otherwise it will make a complete mockery of the extension work.

The land development work should be aimed at achieving at better levelling of village land to allow for better water management so that the waterlogging problems are mitigated and at the same time land at higher elevation are brought under the present irrigation facility. Care must, of course, be taken to ensure that the topsoil of the elevated land are not disturbed. Once the lands are reasonably level, field channels have to be relaid to allow for quick draining-off of excess water and to minimize transport loss of irrigation water. This dual objective can be attained only if consolidation of land, for which farmers are now psychologically prepared, are undertaken simultaneously.

One of the integral part of the proposed strategy is that the present irrigation system (i.e. canal irrigation) must be strengthened

by a liberal introduction of minor lift irrigation schemes so that much larger proportion of the village land is brought under assured irrigation throughout the year.

We have already seen that the suggested strategy is built around increasing the land use intensity through multiple cropping programmes. The progress in dry land farming notwithstanding a significant break through in multiple cropping programme will be possible only by extending the area under irrigation. Let us no longer remain blind to the fact that Punjab, Haryana and to a lesser extent Tamil Nadu have been able to forge ahead in agriculture mainly due to their better irrigation systems.

The suggested farm reorganization based on multiple cropping supplemented by dairy and poultry calls for liberal supply of farm credit. The most vital part about credit is that it should be adequate and in time. Too little credit granted much after the period of urgency have resulted in misuse of this vital input. The poor recovery of institutional credit in Orissa as well as the country as a whole is not a little due to it. It should, therefore, be made a policy not to spread credit too thinly and if for any reason processing of credit applications are not completed in time sanction of credit in the mid-season must be withheld till the next crop season approaches. Again as a matter of policy no further credit should be granted to a defaulter and all legal measures should be explored for the recovery of the same.

Both for fertilizer and plant protection chemical the supply bases should be extended to the village level. It has been the experiences of most villagers that co-operatives generally have failed in supplying fertilizer in time. The authors feel that the modus operandi of the co-operatives are such that delays are bound to occur if fertilizer is supplied only through them. It is, therefore, suggested that more fertilizer be supplied through private dealers. The ideal may be to choose licensed grocer's shops for this purpose. The authors are aware that this suggestion is bound to raise the eyebrows of not a few people. Fortunately raised eyebrows do not harm any body and we should not needlessly be concerned about it. The advantage of this novel supply arrangement will be a lot of saving in precious time when the farmers can ill afford it. The

same arrangement can be made for the plant protection chemicals. It may be pointed out that we have not touched upon the shortages of both the chemicals because frankly nothing can be done about them. Perhaps organic fertilizers can help us somewhat in mitigating our fertilizer shortages but not much can be hoped for in this direction. Until the national fertilizer production improves considerably we must concentrate on its judicious and timely application.

Even if we can achieve all this, no radical change can be introduced in the villages unless the state extension service is improved. We have already mentioned the real link between research and the farm community is the Gram Sevak. With his meagre educational background he cannot serve any useful purpose as an extension agency. Indirect methods like radio and other mass media are also not very useful since our farmers are mostly illiterate. One viable extension machinery will be to set up small stations staffed with agricultural science graduates for every five villages. Their duty will be to prepare farm plans not for individual farmers but for the village as a whole. These officials should be periodically sent to Research Institutes and Agricultural Universities for up-dating their information.

It may be seen that the proposed strategy is based on three things—land development, supply of inputs and extension. The emphasis is on higher land use intensity and subsidiary occupations like dairy and poultry. The actual implementation of this programme should be phased out spatially as well as temporarily with an ultimate objective of covering the whole state in about 15 to 20 years.

EMPLOYMENT APPROACH TO REMOVAL OF POVERTY IN ORISSA

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The basic problem confronting the weaker sections in India is the problem of poverty. The twin causes of poverty according to the Planning Commission of India are underdevelopment and inequality and there is substantial agreement on this score. The former relates to the question of disparity in inter-regional levels of growth and the later to the disparity in inter-personnel income distribution. It has therefore become necessary to arrive at reasonable estimates of what constitutes the magnitude of poverty. It again depends on criteria which one adopts for measuring quantum of poverty. As poverty is strictly correlated with lack of income and as income generally is dependent on employment, the 'Time Criterion Approach' for measuring unemployment can also be applied for measuring poverty. Alternately the 'Income Criterion' envisages that a poverty level of employment must be defined in terms of capacity to provide minimum living to population. In recent times, adopting this criterion Dandekar and Rath estimated that the 30 per cent of the rural population needed an additional income of Rs. 64/-per capita per annum in order to bring up their average expenditure to certain minimum level. The time criterion approach is generally based on the data thrown out by N. S. S. Labour Force Surveys. All those who are unemployed or severely under-employed are generally included within the group of poor. Likewise, persons below certain minimum level of consumption also constitute the poverty stratum. However, to be meaningful and measurable the per-capita level of income or consumption is the most accepted criterion of poverty. Adoption of this approach for estimating the magnitude of poverty is also justified on the ground that the poor are more numerous than the unemployed or under-employed.

Attempts made by different authors vary in their definition of the poverty line. Minhas takes a figure of Rs. 17 per month at 1960-61 prices for rural minimum, below which starts the poverty line. Dandekar-Rath have estimated poverty on the basis of Rs. 15 per capita monthly

consumption for rural and Rs. 22.5 for the urban population at 1960-61 prices. However, if we accept the presumption that the urban poor is only an out-flow of the rural poor, one uniform minimum consumption level for the entire poor population can be also meaningful. Thus the Planning Commission's definition of poverty line, consumption expenditure of Rs. 20 per capita per month at 1960-61 prices is now officially accepted for purposes of Planning.

However, Government of India in their revised methodology, having regard to the Dandekar-Rath revised estimate of Rs. 27 for rural areas and Rs. 40.50 for urban areas as minimum level of consumption in 1968-69, and adjusting it at 1964-65 prices arrived at Rs. 20 for rural and Rs. 30 for urban population, have redefined the poverty line.*

Adopting this revised definition of poverty, per capita monthly consumption at Rs. 20 for rural areas and Rs. 30 for urban areas at 1964-65 prices, we find that in 1964-65 the following was the level of poverty in different States in India.

TABLE 1

PERCENTAGE OF POPULATION BELOW THE POVERTY LINE IN 1964-65

Sl. No.	States	Percentage of population	
		Rural	Urban
1.	Andhra Pradesh	48.50	57.61
2.	Assam	18.30	48.57
3.	Bihar	42.80	55.55
4.	Gujrat	45.59	54.48
5.	Haryana	21.16	48.11
6.	Jammu and Kashmir	26.63	61.38
7.	Kerala	60.82	66.36
8.	Madhya Pradesh	46.32	54.73
9.	Madras	50.94	55.16
10.	Maharastra	47.02	43.93
11.	Mysore	48.99	51.81
12.	Orissa	62.04	57.58
13.	Punjab	22.69	43.39
14.	Rajasthan	35.29	51.41
15.	Uttar Pradesh	41.61	62.56
16.	West Bengal	50.19	40.18
17.	Union Territory	32.24	22.12
	All-India	44.57	51.34

* Refer reply to the unstarred question No. 2277 on 16th August, 1972 in the Parliament.

In the context of spiralling price rise, when the Consumer price Index has increased during the period 1964-65 to 1974-75 by 230 per cent, the level of poverty line with necessary adjustments will mean Rs. 46 for rural population and Rs. 69 for urban population. The following was the percentage distribution of population in rural and urban areas of Orissa on the basis of monthly expenditure for the 25th Round for which data are available for the latest period.

TABLE 2

PERCENTAGE DISTRIBUTION OF POPULATION IN ORISSA (1970-71) ACCORDING TO MONTHLY INCOME

Monthly expenditure group (Rs.)	Rural	Urban	State
0-20	24.44	8.34	23.12
21-24	12.76	4.68	12.09
24-28	14.83	9.29	14.27
28-34	16.48	14.10	16.28
34-43	13.78	22.32	24.49
43-55	9.09	16.91	9.74
55-75	6.16	13.11	6.73
75 & above	2.46	11.25	3.18
Total	100.00	100.00	100.00

Assuming that the percentage distribution of population in different expenditure groups obtained in the year 1970-71 continues to hold good for the subsequent year, it is estimated that in the year 1974-75, population below poverty line in Orissa covers 85.32 per cent of rural population and 85.47 per cent of urban population. Applying this ratio to the projected population of Orissa for the year 1974-75 estimated at 23.5 million, we get the following picture as regards magnitude of poverty in absolute numbers.

	Population (million)	Percentage below poverty line	Estimated numbers
Rural	19.7	85.32	16.8
Urban	3.8	85.47	3.3
Total	23.5	85.00	20.1

Thus in a population of 23.5 million, we find the magnitude of the poor at 20.0 million which constitutes 85.4 per cent. This is indeed a colossal poverty.

The extent of variation of the present level of prices will determine further increase or decrease in the present abnormal level of poverty.

Another factor which has contributed to the increase in the magnitude of poverty lies in the increasing dependence of household consumers on market purchase of principal food stuff. Studies based on N. S. S. data revealed that the dependence on home-grown stocks of rice in Orissa, which stood at 66 per cent for the rural households and 11 per cent for the urban households have substantially diminished in recent years. In the context of upward movements of general prices, it is food price which is rising at a faster rate than non-food prices. This factor combined with increasing dependence on cash purchase of rice is accentuating the pace of poverty in the State.

II

The twin causes of poverty recognised by the Planning Commission pertain to under-development and in-equality. The former relates to the question of disparity in interregional levels of growth and latter to the disparity in inter-personal distribution of income. In a period during which the growth rate in the economy becomes slower, it is backward areas which suffer more than the developed regions. This is actually what is happening during the latter part of the 4th Plan and during the 5th Plan.

The latest estimates of State Income of Orissa show that during the first year of the 4th Plan i.e. 1969-70, the growth rate of State Income at 1960-61 prices was 1.9 per cent, in 1970-71 it was 3.6 per cent and in 1971-72 it was (—) 5.6 per cent. The over-all growth rate of the net domestic product of the state registered and annual average of growth was only 2.57 per cent, against the 4th Plan target of 5.6 per cent. The average growth rate of population per annum at 2.5 per cent, being not less than the average growth rate of State Income, the per capita income of the State at constant prices has almost remained stagnant. From Rs. 262 in 1968-69 it has increased to only Rs. 266 in 1974 (Quick

Estimates) and in all probability it will be at least 10 per cent lower in the current year i. e. in 1974-75 due to sharp reduction in production of rice by about 10 lakh tonnes. In such a situation, the relative backwardness of Orissa will further go up. On the basis of composite index for the measurement of regional backwardness, it was found that Orissa was the most backward State in India, being 31 per cent below the all-India level in 1970-71. This was calculated on the basis of 22 indicators of development.* With the present state of near-stagnation and lower growth-rate, this level of relative backwardness will undoubtedly deteriorate further during the first year of the 5th Plan.

As regards poverty caused by inequality in income distribution, some attempts made for the first time in Orissa for building up of an estimation of inequality in income distribution was made by utilising N. S. S. data for the year 1960-61 and 1970-71. The degree of inequality assuming that the pattern of inequality in income distribution had close resemblance with that of consumption expenditure and utilising the consumer expenditure data available for these years and fitting Lorenz curve to these distribution, was calculated with Gini Co-efficient** which measures the degree of inequality, and it was found that in Orissa the following was the disparity in income distribution.

	Gini-Co-efficient	
	Rural	Urabn
1960-61	0.269	0.349
1970-71	0.253	0.209

The above co-efficient reveals some interesting findings :—

(*i*) It shows that over the decade inequality has been reduced the degree of reduction in inequality is of course more marked in case of urban population than rural population. These findings do not confirm the popular views that over the plan period inequality has increased considerably.

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* Refer paper on 'Measurement of Regional Backwardness with special reference to Orissa' prepared by the Author for the Seminar on Regional Economic Planning at the Sardar Patel Institute of Economic and Social Research, Ahmedabad in March-16-18, 1973

** Refer to Paper on inequality in income distribution in Orissa 1960-61-1970-71 by the Author presented for the Seminar by Gokhale Institute of Economic and Politics, Poona in 1974.

(*ii*) The degree of inequality in Orissa in 1970-71 being within 20-25 per cent is of a lower or than the inequality calculated for India by Abraham and Basu or for Tamilnadu calculated by Sunder Rajan & D' suza.

The calculation for India shows that the Gini-coefficient was 0.449 for 1958-59 and 0.429 for 1967-68 and for Tamilnadu it was 0.314 for 1963-64 and 0.306 for 1969-70. That the degree of inequality in Orissa is of a lower order need not appear puzzling. All that this finding means is that while the bottom segment is poor, the upper segment is not quite rich.

It is widely believed that whatever inequality is there it is among the general population but not between the weaker sections. To what extent this popular belief is valid may be examined on the basis of data available in regard to the distributional pattern within weaker sections of the community. For the first time in India special tabulation of consumer expenditure data for weaker sections was attempted recently. Weaker sections for this purpose cover 2 rural classes namely, Small farmers (the lowest 10 per cent of the household having cultivated land) and the Landless (households having no land). From the above data the percentage distribution of weaker sections of population and their income distribution (consumer expenditure of weaker section is presumed to be equal to their income) were calculated and Lorenze Curves are fitted. The derived results are given in the Table 3.

It shows that the poorest 30 per cent of Small farmers share 18.2 per cent of Income whereas the top 30 per cent of Small farmers share 45.6 per cent of income. In case of rural landless the poorest 30 per cent share 18.1 per cent of income whereas the top 30 per cent among the landless share as much as 44.2 per cent. The Gini-coefficient in respect of small farmers works out to 0.202 and for rural landless 0.209. It therefore means that the degree of inequality within the poorer sections is as much as in the general population.

Inequality in distribution of land holdings

If one takes the disparity in income as a dependent variable and the extent of ownership or command over the means of production or operation of land and capital stock as independent variables, the pattern

TABLE 3

INCOME DISTRIBUTION PATTERN OF THE SMALL FARMERS AND THE RURAL LANDLESS IN ORISSA 1970-71

Small farmers population		Percentage of income	Rural Landless population		Percentage of Income
Bottom	10%	4.8	Bottom	10%	4.8
2nd	10%	5.8	2nd	10%	6.0
3rd	10%	7.6	3rd	10%	7.3
4th	10%	8.0	4th	10%	8.1
5th	10%	8.4	5th	10%	8.8
6th	10%	9.4	6th	10%	10.0
7th	10%	10.4	7th	10%	10.8
8th	10%	14.4	8th	10%	12.4
9th	10%	10.4	9th	10%	9.4
Top	10%	20.8	Top	10%	22.4
	100	100.0		100	100.0

of evenness or skewness in the distribution of the latter is the real determinant of the former. So far as rural income generation is concerned, pattern of distribution of land holding is a clear guide. For studying the extent of inequality in distribution of property contributed by inequality in distribution of income, one may make use of the data available on percentage distribution of operational holdings, as income generation is more closely related to operational holding rather than to ownership holding. For this purpose, analysing the N. S. S. data on land holding for 1960-61 and the Agricultural Census data for 1970-71 for Orissa shown in Table 4, we obtain the following distribution pattern in the State.

It is to be noticed that the inequality ratio in terms of property is much greater than in terms of income. The Gini-coefficient was as high as 0.611 in 1960-61 and it has only been reduced marginally over the decade and in spite of all land reform measures, the inequality ratio in landed property is still as high as 0.523 in 1970-71. Inequality in wealth is therefore much more staggering than the inequality in the levels of income and consumption. Comparing the pattern of property distribution with the pattern of income distribution in rural areas, one would notice that there is greater degree of inequality in distribution of

TABLE 4

DISTRIBUTION OF LAND HOLDING IN EACH DOCILE OR HOUSEHOLD

Percentage of household.	% of land (operated) 1960-61	1970-71
1st 10%	0.0	0.0
2nd 10%	0.0	1.0
3rd 10%	0.5	3.0
Lowest 30%	0.5	4.0
4th 10%	1.7	5.5
5th 10%	4.6	6.5
6th 10%	8.0	7.1
7th 10%	9.4	8.9
Middle 40%	23.7	28.0
8th 10%	12.9	10.4
9th 10%	18.5	17.6
Top 10%	14.4	40.0
Top 30%	75.8	68.0

landed property than of rural income. While the bottom 30 % of household operated less than 1% of total landholding, in terms of income it commanded about 15.8 % of income in 1960-61. Similarly the top 30 % of household commanded as much as 75 % of landholding, but in terms of income it had a share of 49%. This position obtaining in 1960-61, has only somewhat changed after a decade, when change in the disparity in distribution of property holding was more marked than change in the income distribution.

Accrual of income from sources other than land is also a potent factor to reckon with. That the lowest 30 % households having hardly any share in landed property are able to earn a share of 15 to 16 % of total income implies that labour is also a potent source of income generation for the property-less class.

It is significant to note that top 30 % of households with 75 % of land holding commands less than 50 % of income. This indicates that much of the assets of the richer section are under-utilised or idle assets.

It is therefore, socially desirable to break this concentration of idle wealth and make it productive by greater equitable distribution as a first step in the direction of income equalisation. A radical step in land reform is thus an economic necessity.

This is the basic malady of the weaker sections. The remedy against this malady has been baffling the economists and the planners. The well-known remedies which have been applied and proved to be successful in removing poverty under conditions of socialism in the socialist world are not applicable under present day Indian conditions. Hence other safer variants are devised, irrespective of its ability to deliver the goods. The controversy between Dr. B. S. Minhas and the Planning Commission was not so much in regard to the preferred variant of the Fifth Plan model, as in regard to its feasibility of achievement. The preferred variant which was accepted by the National Development Council stipulated to raise the average monthly per capita consumption of the poorest 30 per cent of the population from Rs. 23.24 in 1973-74 to Rs. 37.10 in 1978-79 at 1970-71 prices. This implied an increase in real terms by 60 per cent in per capita consumption of the poorest 30 per cent in the five year period, which Minhas model considered too ambitious and estimated that it could improve by not more than 15 to 20 %. The assumptions behind Minha's contention is that (i) percentage of the poorest 30 per cent would continue (ii) the average per capita income of the rural population would grow at a rate of 2 per cent per annum (iii) incomes of the rural poor would grow at the same rate as that of the general population.

One may be inclined to feel that the above postulates, specially the second and the third assumptions are on the low side and that the per capita income would increase at a rate higher than a mere 2 per cent. But the available figures, show that even in 1971-72, when the run-away inflation had not appeared on the price horizon, the national per capita income at 1970-71 prices was 1% lower than in 1970-71. In case of Orissa growth rate of the per capita income at 1960-61 prices was of the following order.

Growth Rate of per capita Income in Orissa (1960-61 prices)

Third Plan—	2.1 %
Annual Plans—	3.2 %
First year of Fourth plan (1969-70)	(—)0.4 %
Second year of Fourth Plan (1970-71)	1.5 %
Third year of Fourth Plan (1971-72)	(—)7.5 %

During the subsequent period, when the price rise has been savage, fall or near stagnation in per capita income in real terms is obvious. Thus Minhas' assumption instead of being on the low side may as well turn out to be even on the high side.

But his third assumption that income of rural poor would grow at the same rate as the general population may or may not be valid depending on the volume of employment available to the rural poor. It is this aspect that is crucial in making any anti-poverty programme a success.

III

The strategy for improving the living conditions of the weaker sections through massive employment programme is a recognised policy under the Fifth Plan. The 'Rural Works Programme' the Half-a-Million jobs scheme' or Job for at least one member in each family are programme oriented in that direction. We may therefore make an estimate to determine to what extent it is feasible in case of Orissa.

The relevant factors in such an exercise are :—

(i) Estimated population in the poorest 30 %
(ii) Magnitude of unemployment in (i)
(iii) Capital-labour Ratio.
(iv) Investment required for full employment of (i)

For this purpose, utilising the observed growth rate of population we find that in Orissa, the poorest 30 % of population during the Fifth Plan period would be of the following size—

	Total population (million)	Poorest 30 % (million)
1974-75—	23.5	7.06
1975-76—	24.1	7.21
1976-77—	24.6	7.37
1977-78—	25.1	7.52
1978-79—	25.6	7.67

In regard to magnitude of unemployment an estimate prepared by Bureau of Statistics for the year 1971 revealed that there were 25.8 lakhs of fully unemployed persons willing to work if work is available and 6.5 lakhs of unemployed equivalent of underemployed persons in the working age group of 15-59. Thus the total magnitude of unemployment works out to about 14.8 % of total population. Though this is the picture for the general population, in case of the poorest section, it would be much more. It is reasonable to assume that in case of the poorest 30%, the incidence of unemployment would be double the percentage applicable for general population, i. e. $14.8 \times 2 = 29.6$ %, say 30 %. Thus presuming that the 70 lakhs of the poorest 30% constitutes about 14 lakh of households and as labour force in each household accounts for 40 % of its size, there would be need for employment guarantee for about 8.4 lakhs persons.

Studies on Capital-Labour coefficients * indicate that some of the important Labour-intensive forms of production work out to the following norms in respect of employment generation at the all-India level.

Activity	Man-days per Rs. 1,000 of investment.
1. Road construction	131
2. Irrigation	41
3. Land Reclamation	16
4. Animal Husbandry, Forestry and Fishery.	16 to 28

But with reference to Orissa, studies made by Bureau of Statistics and Economics reveal that per lakh of rupee of plan expenditure, it generates employment of the following order.

* Raj Krishna—Unemployment in India—Economic and Political weekly, Vol-III, No. 9.

TABLE 5

EMPLOYMENT GENERATION PER LAKH OF INVESTMENT IN ORISSA (IN MAN-YEARS.)

Year	Administrative	Technical	Skilled	Unskilled	Total
1970-71	3	7	19	6	35
1971-72	2	6	9	11	28
1972-73	2	5	9	11	27
1973-74	2	5	12	11	30

Presuming that the upper 70% of population get the benefit of public expenditure in terms of employment in the first three categories and the weaker 30 % find employment only in the unskilled category, the volume of employment generated by development expenditure in Orissa are of the following order—

	Development Expenditure (in lakh Rs.)	Volume of employment generated of the unskilled category (in man-years)
1970-71	96.19	1,05,812
1971-72	118.33	1,30,163
1972-73	128.92	1,41,812
1973-74	128.91	1,41,801
1974-75	156.45	1,72,095
1975-76	169.67	1,86,637

Though dependable data are not available in respect of private sector or central sector, it is easily recognised that private sector provides the maximum demand for farm and non-farm labour of the unskilled category. Notwithstanding this, for providing full employment to weaker sections, at least half of the unemployed numbering about 4.2 lakhs (the other half will presumably be covered by the private sector) should be covered under the development expenditures. In order to achieve this level of employment, the total developmental expenditure in the State, both by the State Government and the Central Government have to be stepped up to Rs. 382 crores per annum.

EMPLOYMENT STRATEGIES FOR THE RURAL POOR

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Introduction

Growth with equality and Elimination of poverty is the goal of development (I) in the Fifth Five Year Plan. "It was found that most of the rural poor belong to (i) rural labour households operating no land (ii) agricultural labour households with some land and (iii) Small land operators operating land holding below 5 acres in size" (2). Many Studies have been made to estimate the number of people below the poverty line. Mr. P. Bardhan estimated that in 1967-68 about 73 % of the rural people lived below poverty line as defined by per capita monthly expenditure Rs. 15 at 1960-61 prices. Dandekar and Rath estimated that 40 % of rural population in 1960-61 were below poverty line that is with diets inadequate even in respect of calories. According to Minhas by 67-68, 154 million lived below poverty line that is below Rs. 200 per annum at 60-61 prices. When we consider the case of Orissa we find that more than 64 % of the people of the State subsist below the poverty line that is they do not have Rs. 240 per year at 60-61 prices. It is shocking to note that the gap between the national per capita income and the State per capita income was Rs. 80 in 60-61 which went up to Rs. 90 in 1970 and is now Rs. 120 approximately. So the epitome of Indian poverty, Orissa should have no strategy but strategies for developing the rural poor (see table No. I & II).

According to Prof. B. S. Minhas there are four ways of creating employment opportunities and thus raising the levels of living of the rural poor.

(*a*) Accelerating non-farm employment.
(*b*) Redistribution of Income through Fiscal and Pricing Policies.

(*c*) Land Reforms and (d) undertaking specific measures to improve the productive capabilities of the scores of millions of small peasants and also increase work opportunities for the landless in rural areas.

The trend of Industrial employment shows that we have to think of economic development with no population transfer. The absolute number of dependent on agriculture are not likely to go down. There is a greater likelihood that their numbers will increase in next 10-15 years. The budgetary capability of the Government to subsidise inputs and to influence the prices of the products when they have nothing to sell will not solve their problems. The land-reform measures of radical nature have been undertaken but the surplus lands should go to the tiller and not to the landless, the purpose of the land distribution is not to turn non-farmers into farmers but only to improve the position of small cultivating operators. So lastly the Fourth measure is introduction of some specific measures to alleviate rural poverty. They are like introduction of the High-Yielding variety (III) M F. L. and F. D. A. (IV) Rural works programme. We have to examine here only these programmes in detail at least from the point of view of their employment generating capacity.

3

A recent Study of Dr. M. S. Prakash Rao and others show that, there has been an abnormal increase in the proportion of agricultural labour as revealed by the 1971 census. "When it is seen that it synchronises with noticeable decrease in the proportion of cultivators, a radical change in the Structure of the Working Force becomes manifest. While the increase in the total workers during the decade 61-71 amounted to 20.20 million as many as 14.40 million have been accounted for this category alone. In otherwords, while total workers increased by 15.67 per cent, agricultural labourers increased by 83.29 %. Since the economy of every State happens to be more or less the replica of the national economy, this experience at the national level is shared by all the States without exception." (III) Two causative factors have been chosen for examination since the vast majority of the landless agricultural labour come from Scheduled Tribes and Scheduled Caste and since the population of these two groups put together increased by 28 % during the last decade, the hypothesis is advanced that there is remarkable upsurge of agricultural labour. Secondly, average daily wage of the

labourers in money terms increased by substantial margin, the rise ranging from 125 % in Punjab to about 59% in Madhya Pradesh. Such wage inducements might have attracted marginal workers engaged in other occupations not excluding marginal farmers.

From the study, it is clear that the problem of employment of rural poor or agricultural labour should merit immediate attention. The Government of Orissa is well aware of this problem and a Govt. estimate says that "in the Fifth Plan about 39.40 lakhs of persons would be seeking employment" (4) In another document the Govt. confesses that "unemployment in villages does not remain strictly as such but it spreads in the form of underemployment, the magnitude of which is difficult to assess. It is high time that this labour force which remains mostly underemployed is diverted partly for fuller employment in other economically viable sectors and partly given full employment in agriculture by introducing extensive and intensive cropping pattern throughout the State"(5).

Strategies

(*a*) It has been suggested that High Yielding variety Technology if properly introduced will provide considerable additional employment. Changes in the cropping pattern will also increase employment opportunities. "But the extension of new technology to vast areas of our country is possible only through extension of assured irrigational facility. The latter is the most crucial determinant of the introduction and success of green revolution in India. It encourages multiple cropping and enables greater intensification of agriculture. A recent study revealed that the intensity of cropping ranged from 167.56 to 200 days in the irrigated villages and it never exceeded 100 days in the non-irrigated areas. Besides the labour absorptive capacity of irrigated land was twice as high as non-irrigated areas. (6)" There is yet another reason for stressing the need for a rapid development of water resources and extension of irrigation. As irrigation expands and farmers shift from dry to irrigated farming, a larger number of workers will be able to find employment in agriculture. In fact extension of irrigative farming represents the most important safety valve for the growing labour force in agriculture." (7)

In this connection many people have suggested that electrification of farms and tractorisation of fields will also create more of employment

opportunities for the poor. But farm mechanisation in the beginning will create technological unemployment. This apprehension is not correct because the H. Y. V. is only limited to the irrigated areas and the value of the labour saved is not more than the increase in machine costs because the relative factor prices have always moved in favour of capital and lastly tractors will be only used in the large farms having sizes more than 25 acres. As such tractorisation does not displace more of agricultural labour and on the other hand the allied workshop industries will offer more non-farm employment opportunities. "Given the economies of tractor versus truck transport, many farmers have found it profitable to rent out their machines for short-haulworks within the environs of the towns. Increased mechanisation is likely to broaden the range of mechanical skill available in the society." (8)

In this connection also we have to study the impact of electrification on employment. Though it is generally believed that the electrification will lead to greater unemployment because of the need for less human labour, the Planning Commission's Study shows that insignificant displacement of labour takes place due to the change over to electricity. Though there has been some decline of employment in Sugar cane crushing there has been increase in the employment in cereal processing industries. (9) We conclude that the H. Y. V. programme with its allied problems of mechanisation and electrification will create more of employment opportunities for the rural poor.

When we compare the case of Orissa against this economic back drop we find that the additional employment created due to the adoption of the H. Y. V. is only 7 days per year (Table 4) The net irrigated area is only 13 % of the total area under cereals. Similarly in the Scheme of rural electrification, all other States except Assam have gone ahead of Orissa. By 1973 only 13.5 % of the total number of villages covering 25 % of the population have been electrified in the State. While appreciating the stand of the Government for creation of Lift Irrigation Corporation and the institutional finances procured for it, one would be eager to see the promise of the programme and its successful execution.

4

Second frontal attack on the rural unemployment has been through M. F. A. L. and S. F. D. Agency. The idea is to help the farmers

having less than 2 acres and less than 5 acres of land respectively. Studies made elsewhere show that the Marginal Farmer and Agricultural Labour programmes have the following defects and they are also discernible in our State.

(*a*) A recent study on the M. F. A. L. Scheme in Mathura district of U. P. point out that the persons holding land much in excess of the laid down maximum have been enjoying the facilities under the scheme.

(*b*) Officials of the scheme and lending institutions have discriminated against landless labourers although they are entitled to assistance becauce they could not furnish adequate tangible security. So this traditional method of giving credit only to those who have got tangible security should be modified.

(*c*) Thirdly many of the non-beneficiaries are quite ignorant about the programme. Extension agencies should educate them about various assistance programmes and should invite them to participate in the programme.

(*d*) In preparing the programme for small farmers, it was expected that the normal extension machinery would provide adequate guidance and help to the small farmers agency. In many areas this expectation has not been realised (II) The block staff thinks that it is an additional burden on them. There has been lack of co-ordination among the project officers, financing agencies and co-operative Institutions. The extension machinery in many areas has not been specifically oriented to attend to the problems of small farmers.

So far as the S. F. D. A. are concerned there are areas where the minimum infrastructure is not available and the overall level of development is so low that the improvement of the Small Farmer becomes doubly difficult. There should be massive investment programme for developing infrastructure simultaneously by putting up reasonably efficient financing institutions.

The substantial benefit from the schemes are going to large farms especially those having patronage of block and district level leaders. The distortion of the schemes are due to the professional politicians working

as intermediaries and gate keepers not only for the flow of funds but also for the information regarding their availability. (12) A similar study in Surat district has also shown that farmers in the backward areas do not benefit much whereas the farmers in the better of areas benefit substantially. Even in the long run the extent to which the weaker sections would benefit would depend upon the efficient functioning of the infrastructure of the Co-operative and other institutions which the S. F. D. A. is trying to develop (13) If we want to make a dent on rural unemployment we must develop these agencies keeping in view the defects which are noticed elsewhere.

So far as the rural employment programme is concerned, certain serious doubts have been raised as to the effectiveness of the programmes to augment agricultural employment. Prof. Dandekar and Prof. Rath estimate that such a programme at the minimum requires at least Rs. 800 to Rs. 1,000 crores annually. They advocated taxation of the rich to finance this programme for which the political courage is lacking. To push through these programmes by deficit financing is not desirable. Prof. A. K. Sen is of the opinion that multiplicity of such schemes will fritter away the scarce investible resources and thus widen the resource gap for the development programme. Prof. Hanumant Rao is critical of the Scheme because schemes to augment agricultural output like soil conservation and minor-Irrigation would be non-inflationary but, "the rural works programme envisaged essentially as a means of providing employment because growth of output has become slow and is likely to be slow would have an inflationary potential" (14). So we should plan out rural works programme in such a manner so that it would augment both employment and output.

As against this when we analyse the rural works programme in the State we find no agency either the Development banks or a corporation to select and implement the rural works projects to mop up rural saving and assist infrastructure development. (15).

Rural Industries

We must develop agro-based industries to expand employment opportunities for the rural poor. "In a situation of rural poverty and employment and taking into consideration the immediate prospects of industrial growth and employment what is important is not whether

industry 'x' is more capital intensive than industry 'y', but whether the scale of investment needed to start either is within the means of the small artisans dispersed all over the country" (16) We have to develop the conventional industries. We have to revitalise the Panchayat Industries which was started a decade ago and out of which 72 Industries are working satisfactorily.

These are some of the measures to create employment for the rural poor. In initiating all these measures we should not overlook the small man, and the small projects and the conventional technology. Because only in the successful execution of these projects we can afford employment to the huge unemployable labour force.

TABLE 1

DISPARITY IN PER CAPITA INCOME OF ORISSA AND INDIA (1962-63-68-69)

Year	Per capita Income at 1960-61 prices		
	India	Orissa	Gap
1962-63	309.4	228.7	80.7
1963-64	319.9	250.4	69.5
1964-65	335.8	261.0	74.8
1965-66	310.4	230.2	80.2
1966-67	307.9	297.1	60.8
1967-68	329.2	242.7	86.5
1968-69	329.9	250.3	79.6

Source : The Economic Base of Orissa for the Fifth Plan Bureau of Statistics And Economics, Orissa.

TABLE 2

PERCENTAGE OF POPULATION LIVING BELOW THE POVERTY LINE IN DIFFERENT STATES BY 1969 OCTOBER

States	Percentages of population below poverty line
Andhra Pradesh	42.30
Assam	40.60
Bihar	49.40
Gujrat	33.30
Jammu & Kashmir	44.60
Keral	37.90
Madhya Pradesh	44.90
Maharastra	41.30
Mysore	41.30
Orissa	64.70
Punjab	20.80
Rajsthan	45.60
Tamil Nadu	40.40
Uttar Pradesh	44.80
West-Bengal	34.90
All-India	41.20

Source : Fifth Five Year Plan of Orissa-Draft-P-7

TABLE 3

GROWTH OF AGRICULTURAL LABOUR IN ORISSA

State	Year	Cultivators	Agricultural labours	Total of cultivators & Agricultural Labour
Orissa	1911	55.66	18.64	74.10
	1921	56.41	17.64	74.05
	1931	55.12	19.30	74.42
	1951	57.97	16.19	74.16
	1961	59.78	15.11	74.89

Source :— Growth of Agricultural Labour in India, Institute of Applied Manpower Research.
M. S. Prakash-Rao, Sashikumar-Sulochana Kulmani.

TABLE 4

CHANGES IN AGRICULTURAL WAGE-RATES

State	Agricultural Operation	Wage rates (Rs.) per day 1960-61	Wage rates at per day in 69-70	Percentages change
Punjab	Plougher	2.81	6.34	129 6
Keral	Field Labourer	2.10	4.67	122.4
Bihar	Plougher	1.33	2.70	103.0
U. P.	Plougher	1.31	2.61	99.2
Maharastra	Field-Labourer	1.48	2.85	92.6
Tamil-Nadu	Plougher	1.43	2.65	85.3
Orissa	Field-Labourer	1.26	2.15	70.6
W· Bengal	Field-Labourer	1.85	3.17	71.4
Andhra Pradesh	Field-Labourer	1.46	2.46	68.5
Assam	Field-Labourer	2.29	3.80	65.9
M. P.	Plougher	1.32	2.11	59.8
Gujrat	Field-Labourer	1.97	2.94	49.2
Mysore	Field-Labourer	1.64	2.35	43.3

Source : Farm Mechanisation in Labour abundant Economy-C. H. Hanumant Rao, Economic and Political Annual Number 1972.

TABLE 5

State	Irrigated area under cereals (000 ha)	Col. 1 as% or cultivated area	No. of farm workers per 100 ha	Additional days of Employment per worker per year
Andhra Pradesh	3442	26	98	11
Assam	571	20	97	9
Bihar	2249	21	133	7
Gujrat	599	6	53	5
Keral	460	17	108	6
M. P.	898	5	62	3
Maharastra	884	5	63	3
Orissa	996	13	71	7
Punjab	2896	27	39	29
Rajsthan	1292	8	36	9
Tamil Nadu	2855	39	124	13
Uttar Pradesh	1146	18	49	8
W. Bengal	1354	20	104	8
Total	12553		76	8

* Farm workers include cultivators and agricultural labourers.

Source : Bandhudas Sen, The Green-Revolution in India : A Perspective, P-72

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H. Y. V. CULTIVATION : A PROSPECT FOR SMALL FARMERS OF CUTTACK DISTRICT

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The Poverty-Line concept has been very often used in our country as the basis for defining and locating weaker section of people. The Government of India Study group in 1972 found out Rs. 20 (at 1960-61 prices per month per head) as the basic minimum income requirement. Dandekar and Rath[2] considered income of Rs. 15/- in rural, and Rs. 22.50 in urban sector as the national desirable minimum. The poverty line is a dividing line below which lie the 'zone of darkness' with utter poverty, extreme malnutrition, and hunger—a state of subhuman living. Above the line exist various zones in the shape of a pyramid that contain broadly two other sections of people, i.e., (a) people whose income do not permit them to attain the reasonable level of aspiration (the twilight zone), and (b) the people who are better-off and affluent (the lighted Zone). It would, therefore, be wrong to call the sections of people lying below poverty line as the only weak. If there is urgency to provide the class that lie below poverty line (the dark zone) a human living, there is equally greater urgency for providing the other weaker sections (in the twilight zone) the necessary efficiency to make their labour more productive and capable of generating an income that would enable them to attain the reasonable aspiration level.

Objective

In this paper an attempt has been made to examine the prospects of small-farm operators from the new technological innovations developed in late Sixties. The small-farm operators as a class, may not, as a rule of thumb, lie entirely below the poverty-line. They are either located in the 'dark zone' or in the 'twilight zone'. Dandekar and Rath[3] have indicated in their study that, the weaker sections constitute mostly of land-holders holding land below five acres and agricultural labourers.

* I am grateful to Dr B. Misra, Dean, O. U. A. T. for his comments and valuable suggestions.

Building the hypothesis

The development of 'Miracle Seeds'[5] of wheat and rice in sixties has given rise to an optimism of food self-sufficiency in the seventies. The exotic varieties of seeds have given the country a chance, at least temporarily, to solve the population-food riddle by averting a collision between population and food production in early seventies. Even one is tempted to discard the contentions of Paddock brother's forecast of 'Famine 1975'.[1]

The Union government and the State governments, in their anxiety to solve the food problem, have continuously been encouraging through various plans and programmes a quick and large-scale adoption of H. Y. V. cultivation. In recent years there have been apprehensions in many quarters that the adoption of H. Y. V. cultivation is apt to produce 'Second generation problems'[4] (or Third generation problems in Walter Falcon's classification)[12] relating to distribution of income. Unless the 'Miracle Seed' is skillfully handled, it may turn it to a 'Seed of Instability'. Poorly managed, the new seeds and their associated technologies could displace millions in the country side forcing them into the already overcrowed cities.[5]

In view of these apprehensions, it is desired in this paper to examine whether the small farmers have, in the area of study chosen in this paper, the pre-requisites of such yield-increasing ventures and whether the adoption of the new technology has any inherent bias against small-farm operators.

The Hypothesis

It is intended to test the hypothesis that the small-farm operators do not possess the necessary pre-requisite to adopt H. Y. V. cultivation as an income-increasing venture and a programme encouraging the adoption of the new technology is apt to aggravate rural inequalities by conferring benefits on large-farm operators only.

Test of the hypothesis

Before any attempt is made to test the hypothesis it is desirable to mention here clearly, that the H. Y. V. cultivation was never intended,

initially, as a strategy to ameliorate the condition of small farmers. It is rather the need for increased food production, than anything else that prompted the polito-administrative frame-work in all parts of the country to stress upon the programme of H. Y. V. adoption. From late sixties farm-operators are being constantly encouraged to adopt H. Y. V. cultivation through various programmes and agencies like the I. A. D. P., H. Y. V. P., I. A. A. P. During the Fourth Plan period certain agencies like Marginal Farmers and Agricultural Labourers Development Agency (M. F. and A.L.), Small Farmers Development Agency (S. F. D. A.) etc. have been created on a pilot project basis to encourage small farm operators to adopt the new technology (the agencies also encourage adoption of other economic ventures).

The High Yielding Varieties Programme was introduced in this State in 1966-67 (the majority of C.D. Blocks selected from Cuttack district) and the coverage has been increasing ever since its introduction and the acreage covered for paddy, for both kharif and Rabi, has gone up from 225750 acres in 1967-68 to 586480 acres in 1971-72*. The evaluation report reveals that the H. Y. V. Programme is essentially a Rabi rice enterprise.[6] This is probably due to various physical factors that are associated with cultivation of H. Y. V. paddy requiring more of solar energy (which during Khariff season is not received due to monsoon clouds), and controlled water supply (which is less likely to occur due to heavy rains flooding the fields, making drainage an impossibility).

The experience of H. Y. V. Programme and I. A. D. programmes in rice growing areas of this State and elsewhere confirm the fact that assured irrigation, so far, has been the necessary pre-requisite for Yield-increasing (and hence income increasing) ventures in agriculture.

The question now remains to be answered whether, with existing availability of irrigation facilities, the H. Y. V. programme, or any programme of agricultural development for that matter, would by-pass the small farmers in favour of the large and the big; and whether the benefits of H. Y. V. cultivation would, by and large, accrue to big-operators.

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The adoption issue and the benefit issue call for an examination of distribution of operated farms and irrigated farms, and the percentage of irrigated land per operated farm in different size-classes to determine its bias for or against a specific size-class. A generalization on this point, taking too big an unit as the country as a whole, may be meaningless as there exist a great many regional diversities among the areas. What is required, before any conclusion is drawn, is to examine the issue in its smallest unit, say a Community Development Block or a village.[7] In this paper an attempt has been made to examine the issue in the context of a revenue district for two reasons. (1) Data relating to even smaller units are not available and (2) the administrative unit for most developmental programmes is a revenue district. The findings here will give an insight to the probable effects of a programme for agricultural development.

Data relating to Cuttack district have been collected from Agricultural Census 1970-71[8] and have been presented in the form of a Table (Annexure I). Data presented relate to land distribution pattern, operated farms, extent of irrigated lands etc. for different size-classes of the district of Cuttack.* Farm operators have been divided into three broad catagories and each catagory has been divided into further size-classes. Farms having operational land up to two hectares have been classified as small farm operators. Those having operational land between 2 hectares and 10 hectares are classified as medium-farm operators and those having operational land above 10 hectares are classified as large-farm operators. The classification is arbitrary no doubt, but it has been done following the conventional pattern, and such a classification is certainly not unrepresentative for Orissa.** Further in the Table, land per operated farm is indicated and not owned land per farm.

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* It is assumed that the pattern of distribution of land and irrigated land has not altered significantly between 1966-67 (the first year of H. Y. V. Programme) and 1970 (the period for which data are presented). Creation of increased irrigation facilities have assumed to be marginal and one would not go far wrong in such assumption.

** Orissa Land Reforms (Amendment) Act provides ceiling of land holding as 10 standard acres. A standard acre is equivalent to 1.5, 3.0, 4.5 acres of class II, class III and class IV land respectively. The ceiling limit extends up to 45 acres in case of small families and 81 acres for large families.

Col. 5 and Col. 6 of Table I indicate the number and percentage of farms with irrigation belonging to each size-group. The distribution of irrigated-farms have been presented in the form of a diagram (Annexure II) revealing the potential distribution of adopters of H. Y. V. cultivation.

Other things being equal and irrigation being the pre-requisite of adoption, about 83 per eent of adoption in the district of Cuttack, shall consist of small farms as against about 16 per cent of medium and only 0.05 per cent of large farms.

Col. 4 is of specific interest for two reasons ; (1) It reveals the proportion of each category of farms that could adopt the cultivation of High Yielding varieties. The proportion of small farms, that have the potentialities to adopt it, is about 32 per cent as against 3.85 per cent for large farms. (2) It reveals that the medium-sized farms are slightly more favourably placed than the small farms. (40 per cent against 32 per cent). Even if the adoption pattern is skewed in favour of medium-sized farms, the skewness is only marginal.

From the point of view of share of benefits from adoption of H. Y. Vs cultivation, one may conclude, that the existing inequalities in the distribution of operational land, would not lead to a benefit-distribution favouring the more prosperous classes of farms. There is ample evidence in the Table 1 that the largest beneficiaries of H. Y. V. cultivation shall be small farm operators due to the differences in the distribution of operated farms and irrigated land per farm.

To compare the distribution of operated land and irrigated land a Lorenz Curve has been plotted together as Curve I and Curve II respectively indicating that the distribution of operated land is more unequal than distribution of irrigated land, as the later (Curve II) lies closer to Line of Equality.

Observation made in Col. 8 (percentage of irrigated land for different categories of farms) further go to testify that the potential benefit of H. Y. V. cultivation will accrue to small-farm operators in largest proportions.

So far we have concluded, that the potential adopters of H.Y.V. cultivation shall be small and medium operators in the district of Cuttack and the benefits of H. Y. V. cultivation shall be reaped by the small-farm operators in largest proportions.

One possible objection to this conclusion may be from the point of view of tenancy. If the small-farm operators are mostly tenant-operators, and the extent of leased-in land to owned-land is high, the small-farms will not be able to adopt the new technology. They will have virtually nothing to offer as collateral for obtaining institutional support (credit in particular, as H. Y. V. cultivation requires more of out-of-pocket expenditures).

Table II (Annexure IV) indicates the operational holdings wholly owned and self-operated for small-farm operators. A cursory glance over the Table will indicate that majority of small-farm operators operate their own land, and leased-in land constitutes a small proportion (about 10 per cent) of the total land operated. Tenancy, therefore, would not act as a major constraint for small-farmers adopting the new technology.

The district of Cuttack is most ideally suited for the adoption of cultivation of H. Y. Vs. One would safely conclude, that the potential adopters and the beneficiaries of the new yield increasing venture, shall be small-farm operators.

Critics very often point out that, programmes of agricultural development like the I.A.D.P., H.Y.V.P., I.A.A.P., etc. are usually target-oriented. Small farmers, who are tradition-bound, are very often by-passed by such programmes. There is some truth in it.

The district of Cuttack is lucky in another respect and a programme like H. Y. V. Programme or an institution like M. F & A. L. Development Agency or S. F. D. Agency can never ignore the small-farm operators completely. Table I shows that land operated by small-farm operators constitute 55 per cent of the total land for the district. When major part of the area is contributed by small farmers, programmes of agricultural development will be co-terminus with programmes benefiting the small farmers.[9] No

programme of agricultural development for Cuttack district, therefore, can ignore the small-farm operators, however anxious the administration may be to achieve targets.

We do not have any study to disprove the contentions built in this paper for the district of Cuttack and the hypothesis built in the paper is to be tested. In future, when such studies are made, and results contrary to conclusions arrived here are found, one would only hold the agencies in charge of agricultural development squarely responsible for their utter negligence.

Conclusions

Cultivation of H. Y. V. is most ideally suited for the small-farm operators of Cuttack district. Herein they have a chance to improve their lot as benefits of H. Y. V. cultivation is likely to flow in largest proportions to them. What is needed is that adequate encouragement should be given to the small cultivators by providing 'packages of inputs' on reasonable terms by institutions primarily set up for this purpose. We have at present programmes like I. A. D. P., H. Y. V. P., I. A. A. P. and agencies like M. F. & A. L. D. A. and S. F. D. A. to provide the necessary encouragements and packages of inputs particularly to small farmers. All that is necessary is to execute the programmes efficiently. Once the programme is successful in breaking the 'psychological barrier' and the tradition-bound small farmers are demonstrated the Yield-increasing (and hence income-increasing) potentialities of the new seed, the programme is bound to make steady headway. The initial years are most difficult years. For any lacunae of the programme in the initial years in meeting the needs of input, damage control and credit, would make the poor farmers more fatalist. We have an ideal situation for the district and we must take advantage of it.

The failure of any programme or agency for agricultural development to take advantage of the potentialities which the small farmers of Cuttack district are so luckily endowed with, shall further aggravate the existing inequalities, and the posterity will never excuse us.

ANNEXURE I

DISTRIBUTION OF IRRIGATED FARMS AND IRRIGATED LAND IN CUTTACK DISTRICT

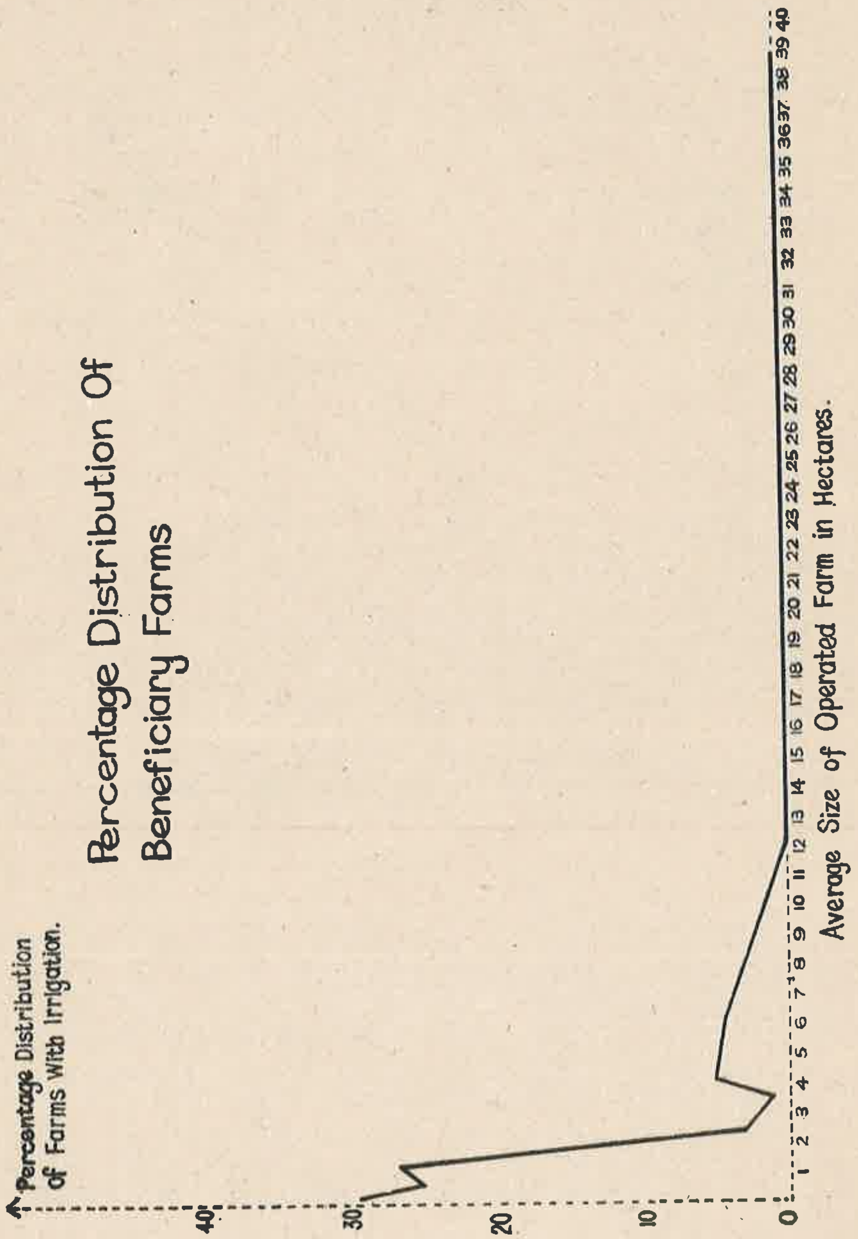
Sl. No.	Class	Size Group (II) in hectare	No. of operational Farms (in '00')	Area Operated (in '00' hectares)	Average Size (in hectares)	Farms with irrigation in each group %	No. of Farms with irrigation (in '00')	Percentage distribution of Farms with irrigation	Average Irrigated Land in each group	Percentage of Irrigated Land in each group	Total irrigated Land in size group (in '00' hectare)
1	2	3	4	5	6	7	8	9	10	11	12
1.	Small	Below 0.5	1846	442	0.24	33.15	612	29.48	0.09	38.23	169
2.		0.5 — 1.0	1502	951	0.63	36.28	545	26.25	0.22	34.17	325
3.		1.0 — 2.0	2065	2803	1.36	27.94 (32.03)	577	27.79 (83.53)	0.25	18.41 (24.07)	516
4.	Medium	2.0 — 3.0	329	774	2.35	23.40	77	3.71	0.43	18.47	143
5.		3.0 — 4.0	233	903	3.88	16.74	39	1.88	0.40	10.41	94
6.		4.0 — 5.0	154	630	4.09	75.32	116	5.59	0.57	13.97	88
7.		5.0 — 10.0	126	786	6.24	86.36 (40.52)	109	5.25 (16.42)	0.57	9.16 (12.83)	72
8.	Large	10.0 — 20.0	23	273	11.87	3.48	0.8	0.04	0.30	2.56	7
9.		20.0 — Above	3	117	39.00	6.67 (3.85)	0.2	0.01 (0.05)	0.23	0.60 (1.79)	0.7
	All class		6281	7679	1.22	33.05	2076	100	0.23		1415

° "Operational farm" has been used as synonym of "operational holding" as the data for former is not available. An "operational holding" includes all land held for agricultural purpose (including pisciculture)

1. *Note* : Bracuet refers to average for a Class.
2. Class classification i. e., Small, medium, Large is mine.

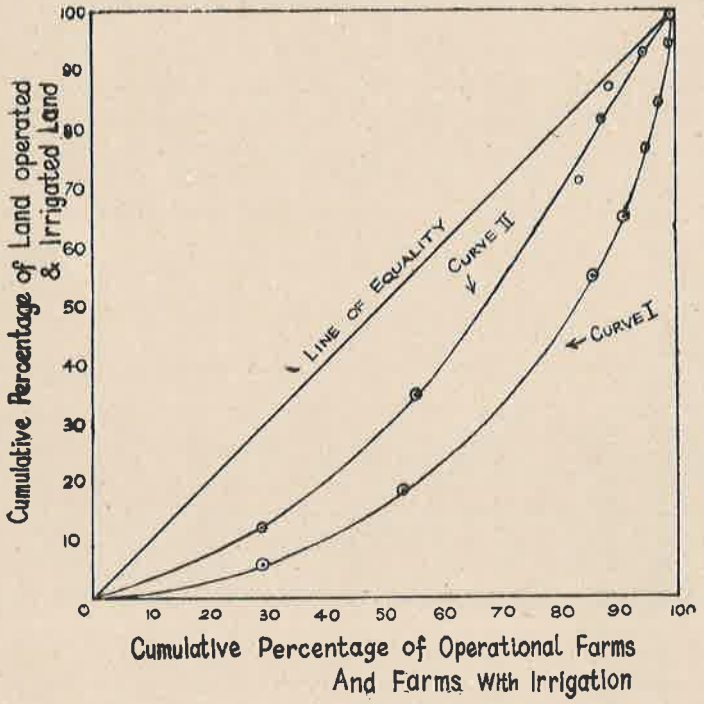
Source : Compiled from Agricultural Census 1970-71

ANNEXURE II



Percentage Distribution Of Beneficiary Farms

ANNEXURE III



ANNEXURE IV

TABLE SHOWING OWNED AND SELF OPERATED HOLDING OF SMALL FARM OPERATORS

Size Group in hectare)	Total No. of operational Farms* (in '00' hectare)	Total No. of Farms* wholly owned & operated '00'	% of wholly owned Farms to Total (approx)	Total operated Area (in '00' hectare)	Area owned and oprated ('00' hectare)	% of owned land to operated land (approx)
1	2	3	4	5	6	7
Below 0.5	1846	1721	93.2	442	370	83.7
0.5 — 1.0	1502	1353	90.0	951	836	87.9
1.0 — 2.0	2065	1854	89.1	2803	2575	91.8
	5413	4928	91	4196	3781	90.0

* 'Farm' is used here as synonym of holding.

Compiled from Agricultural Census 1970-71.

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A STUDY OF SOME ASPECTS OF TRIBAL AGRICULTURE IN KORAPUT DISTRICT OF ORISSA

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The tribal population in Orissa is large. Next to Madhya Pradesh Orissa has the heaviest concentration of Scheduled Tribes. In percentage term also this State has the second highest percentage of tribal population in India, Nagaland being the first. According to the 1971 Census, 23.12 per cent of the total population of the State come under the tribal community and about 13.35 per cent of the total tribal population of the country are concentrated in Orissa alone.

Again, among the districts of Orissa, Koraput District stands first in order of ranking so far as the concentration of tribal population is concerned. It has a total tribal population of 11,51,231 which constitutes 22.69 per cent of the total tribal population (50,71,937) of the State. The percentage of scheduled tribe population to the total population of the district constitutes 56.34. In other words, more than half of the population of Koraput district belongs to tribal society. Moreover, the most primitive tribal groups in the whole of the country are found in this region. Agriculture is their main activity. It is worthwhile to make a study of their agricultural resource positions and agricultural practices.

Objectives

This paper examines in depth the relative position of tribal agriculture with that of non-tribals, identifies the general weakness of tribal agriculture and suggests means for its improvement.

Source of Data

The study is based on bench mark survey data conducted by the Tribal and Harijan Research Institute Research Wing in Gunupur Rayagada Tribal Development Agency Area in the year 1968-69. The estimates are based on a large sample size which includes 2199 nos.

of scheduled tribe, 154 nos. of scheduled caste and 480 nos. of non-scheduled caste cultivating households. The sample households constitute 2 per cent of the scheduled tribe and another 2 per cent of non-scheduled tribe households living in the 15 randomly selected villages in Gunupur-Rayagada area.

Resource Study

Table 1 gives the distribution of cultivating households according to the pattern of ownership of land and different community classes.

TABLE 1

DISTRIBUTION OF CULTIVATING HOUSEHOLDS ACCORDING TO THE PATTERN OF OWNERSHIP OF LAND AND DIFFERENT COMMUNITY GROUPS

(Express in per-centage)

Community	Fully owned land	Fully leased in land	Fully shifting land	Owned and leased	Leased and shifting	Owned leased & shifting	Total of all types
1	2	3	4	5	6	7	8
S.T	56.86	2.94	20.35	8.31	0.86	10.68	100.00
S.C	45.45	14.29	—	38.96	1.30	—	100.00
N.S	72.08	6.25	—	21.25	0.42	—	100.00

S.T. :—Scheduled Tribe, S.C. :—Scheduled Caste and
N.S· :—Non-Scheduled Caste.

The most striking feature in the distribution is the extent of shifting cultivation that is followed by scheduled tribe community. As it can be seen about 20 per cent of the tribal cultivating households are fully dependent on shifting cultivation. Added to this another 11 per cent of the scheduled tribe households depend partly on shifting and partly on owned and leased-in land. As against this the other community groups such as scheduled castes and non-scheduled castes do not take recourse to shifting cultivation. These non-tribal classes rather show their preference to share cropping system. It is very likely that the scheduled tribe farmers do not have much opportunities to hold the land on lease relative to other communities and therefore they take recourse to shifting cultivation.

With regard to the distribution of cultivating households according to the size of operational holdings Table 2 does not show any significant difference in the distribution between different community classes.

TABLE 2

DISTRIBUTION OF CULTIVATING HOUSEHOLDS ACCORDING TO THE SIZE OF OPERATIONAL HOLDINGS

(Expressed in percentage)

Size of Holding (In acres)	S.T. cultivating Household	S.C. cultivating Household	N.S. cultivating Household	(In acres) Average area per cultivating H.H S.T.	S.C.	N.S.
1	2	3	4	5	6	7
Less than 2.5	73.3	72.7	69,6	1.1	1.2	1.6
2.5–5.0	15.3	14.3	17.2	3.4	3.7	3.8
5.0–7.5	5.1	5,8	6.3	5.9	6.1	6.2
7.5–10.0	3.9	3.9	3.9	8.6	8,8	8.7
10.0–12.5	1.3	2.0	1.8	10.9	11.1	11.2
12.5 & above	1.1	1.3	1.2	15.2	16.2	18.1
All sizes	100.0	100.0	100.0	2.3	2.5	2.9

Though there is no difference in the distribution of households occupying different farm sizes, one point which is very conspicuous is that about 70 per cent of the cultivating households occupy less than 2.5 acres of land, which indicates poor resource base of the farming communities in this study region. This table however is silent about the quality of land that each class of community holds. The quality of land is reflected by its value and it is therefore necessary to compare the average value of land per acre that is held by different community of classes. This aspect is dealt with in Table 3.

TABLE 3

AVERAGE VALUE PER ACRE OF LAND (In Rupees)

Community	Value
S.T.	715
S.C.	805
N.S.	1052

The difference in the value of land held by different community of classes appears to be quite wide. The acreage value per acre of land owned by scheduled caste farmers is 13 per cent higher than that of scheduled tribes. Similarly the average value of land per acre owned by non-scheduled castes is 47 per cent higher than that of schebuled tribes. It will speak of the degree of inferior land held by the scheduled tribe group. - Several factors might be responsible for this difference. One of the factors that is clear, is that the proportion of cropped area under irrigation is relatively less for scheduled tribe cultivators group as indicated in Table 4.

TABLE 4

IRRIGATION FACILITIES AVAILABLE TO DIFFERENT COMMUNITY GROUPS

Community	% of Household receiving canal irrigation	% of total cropped area under irrigation from all sources
1	2	3
S.T.	1.9	3.4
S.C.	7.1	5.9
N.S.	9.2	9.6

The average value of farm assets given in Table 5 reveals that significant difference in this regard between scheduled tribes and non-scheduled tribes is only to be found in the value of land and farm buildings and implements. The differences in other assets between scheduled tribes and non-scheduled tribes are not much significant.

TABLE 5

AVERAGE VALUE OF FARM ASSETS PER CULTIVATING HOUSEHOLDS (in Rupees)

Community	Land and buildings	Irrigation assets	Imple-ments	Farm Vehicle	Livestock	Total
1	2	3	4	5	6	7
S.T.	1286.80	0.04	30.00	1.29	307.94	1626.07
	(79.2)	(0.01)	(1.8)	(0.09)	(18.9)	(100.0)
S.C.	1650.00	0.36	29.25	32.49	323.49	2035.61
	(81.0)	(0.02)	(1.4)	(1.6)	(5.8)	(100.0)
N.S.	2665.00	0.63	50.07	37.55	317.40	3070.67
	(86.8)	(0.02)	(1.6)	(1.3)	(10.3)	(100.0)

Cropping Pattern

The cropping pattern followed by the three different community of classes will also fairly indicate the quality of land possessed by each of them. Because the quality of land and the cropping pattern both bear a kind of cause and effect relationship. Table 6 reveals the cropping pattern adopted by the scheduled tribe and the non-scheduled tribe cultivators in the area under this study.

TABLE 6

Sl. No.	Category of Crops	Percentage of cropped area		
		S.T.	S.C.	N.S.
1	2	3	4	6
1.	Paddy	40.2	50.1	53.3
2.	Other Cereals	27.1	18.2	12.2
3.	Pulses	12.3	10.3	14.3
4.	Oilseeds	11.3	11.2	12.2
5.	Spices	1.4	0.9	1.1
6.	Tobacco	2.5	2.1	1.7
7.	Vegetables & other crops	5.2	7.2	5.2
	Total	100.0	100.0	100.0

As this table shows, cereals other than paddy, relatively predominate in tribal agriculture and it is well known that these cereals are generally grown in inferior lands. Hence the greater dominance of other cereals such as ragi, jowar and bajra in tribal agriculture leads one to believe that the proportion of inferior land held by tribal group is relatively more. Though paddy is the main crop for all the three communities of classes it occupies only 40 per cent of total cropped area in case of scheduled tribe cultivators, 50 per cent of the total cropped area of scheduled caste cultivators and 53 per cent of the cropped area of non-scheduled caste cultivators. The reasons for relatively less area under paddy in case of tribal farms are no doubt many. As indicated earlier, about 32 per cent of scheduled tribe cultivators either fully or partly depend on shifting cultivation and as we know this type of cultivation is generally carried out in undulating terrain. The land is prepared for sowing of seeds by the help of crude implements, in the hill slope. Paddy crops which needs a lot of care and lot of inputs for its successful cultivation does not, therefore, find place in shifting cultivation whereas cereals other than paddy and also pulses occupy bulk of the area under this method of cultivation. Relatively inferior land (from the point of view of irrigation, extent of fragmentation, soil type) held by the scheduled tribes is another main point contributing to the difference in the cropping pattern between tribal and non-tribal farms. Moreover, the scheduled tribe cultivating households are less creditworthy than the non-scheduled tribes due to their most economic backwardness. This is another possible reason for relatively wider coverage of less expensive crops under tribal condition. Added to these, the food habit of the tribal people influences them to grow coarse cereals substantially for their home consumption. Excepting for paddy, there is no sharp contrast between tribal and non-tribal farms with regard to cropping pattern followed in Gunupur-Rayagada region.

Expenditure in Farming

The difference in per acre expenditure in crop husbandry between tribal agriculture and other community groups is given in Table 7.

TABLE 7

AVERAGE EXPENDITURE PER ACRE OF CULTIVATION (In Rs.)

Community Group	Expenditure on					
	Seed	Manures	Fertilizers	Pesticides	Labour & other items	Total expenditure
1	2	3	4	5	6	7
S.T.	3.95	2.65	0.85	0.15	70.00	77.66
	(5.1)	(3.4)	(1.1)	(0.2)	(90.2)	(100.0)
S.C.	7.50	7.10	1.60	2.50	71.45	89.70
	(8.4)	(7.9)	(1.8)	(2.3)	(79.6)	(100.0)
N.S.	10.00	11.30	3.50	1.45	76.75	103.00
	(9.7)	(11.0)	(3.4)	(1.4)	(74.5)	(100.0)

Figures in Parenthesis indicate percentage

As the table reveals the difference is quite significant. Scheduled caste cultivators make about 16 per cent additional expenditure over scheduled tribes. But an average non-scheduled caste cultivator makes about 33 per cent more expenditure over an average scheduled tribe cultivator. The break-up of the expenditure will indicate that investment on seeds, manures, fertilizers and pesticides which contributes directly to production rates is the lowest in scheduled tribes among the three classes. This reveals that the levels of technology adopted by the tribals is inferior to that of others. The percentage of households which use these inputs will indicate that it is also lowest in case of tribals. The same is illustrated in Table 8.

TABLE 8

EXTENT OF ADOPTION OF NEW TECHNOLOGY IN FARMING BY CULTIVATING HOUSEHOLDS

Community Group	Percentage of Households using			
	Improved seeds	Fertilizers	Pesticides	Improved implements
1	2	3	4	5
S.T.	12.7	6.0	5.4	0.5
S.C.	25.3	19.4	27.2	1.4
N.S.	26.0	39,1	39.5	1,9

The table shows that while 39 to 40 per cent of the non-scheduled caste cultivating households are in use of fertilizers and pesticides, only 5 to 6 per cent of the scheduled caste cultivating households use such kind of new inputs in their farming. Similarly, while 26 per cent of non scheduled caste cultivators are found to be in use of improved seeds, only 13 per cent of scheduled tribe cultivators go for the same. There is very little use of improved implements in all the three community groups of the Gunupur-Rayagada Region. The non-availability of improved implements to meet the requirement of the hillside farmers of this region coupled with unreasonably high cost of the available implements in the local markets are mainly responsible for their very little use. From the observation, it can be concluded that due to communication difficulties to tribal pockets, illiteracy, ignorance and economic backwardness of the tribal community, their rate of adoption of new technology in farming is much slower than that of non-tribal communities in the same region.

Receipts from farm and non-farm sources

Table 9 shows the average receipt per annum per cultivating household from different sources with respect to three community groups.

TABLE 9

AVERAGE RECEIPT PER CULTIVATING HOUSEHOLD FROM DIFFERENT SOURCES (IN RUPEES)

Community Group	Receipts from						Total
	Net from farm sources	Income from live-stock	Outside farm wages	Forest colle-ction	Sale of assets	Other sources	Recei-pts
1	2	3	4	5	6	7	8
S. T.	367,00	22.90	153.80	195.00	23.80	152.90	915.40
	(40.1)	(2.5)	(16.8)	(21.3)	(2.6)	(16.7)	(100.0)
S. C.	289.85	36.90	152.60	139.30	12.30	393.30	1024.25
	(28.3)	(3.6)	(14.9)	(13.6)	(1.2)	(38.4)	(100.0)
N.S.	1126.45	75.95	151.90	32.55	16.30	405.00	1805.15
	(62.3)	(4.2)	(8.4)	(1.8)	(0.9)	(22 4)	(100.00)

Figures in parenthesis indicate percentage.

The table amply illustrates that the variation in respects between tribals and other community groups is quite significant. The average receipt from all sources in case of a non-scheduled caste cultivating household is found to be almost double the amount that received by his counterpart in the scheduled tribe community. The relative importance of the various sources of income has been brought out very clearly in this table and this indicates that the farm source is by far the most important single source both for the tribals and non-tribals. The cropping pattern followed by the three different classes is already a reflection on the levels of income obtained by them from farm sources. However, the low levels of income obtained by the tribals is not only because of the difference in cropping pattern but also because of extensive agriculture followed by them. The estimated figures relating to the extent of adoption of technology and the farm expenditure which have been shown earlier prove the above contention. Next to farm sources, forest collection and outside farm wages constitute important sources of income from non-farm sources for tribal cultivating households. Income from livestock enterprises constitutes very negligible proportion of total receipts in all the three community groups in the area under our review although this area has greater potential for the development of livestock enterprise.

This study clearly brings out that the scheduled tribes are falling far behind the other community groups so far as the agricultural occupation is concerned. This observation is just based on the study within tribal region. But if we try to make a comparison between scheduled tribes of the tribal area and non-scheduled tribes of the non-tribal area with regard to the distribution of agricultural resources the difference would be more pronounced. Several attempts have, therefore, been made in order to reduce the differences between tribes and non-tribals in various parts of the country. There is ample scope to meet this objective. An important strategy for agricultural development in tribal concentrated hilly regions would mean rapid shift from shifting cultivation to settled farming. For this, all public land and forest resource should be declared a scarce and strategic national resources to be used and improved in a way that serves the best interest of the nation. Shifting cultivators should be settled on the newly reclaimed land on priority basis and legal rights should be granted to the settler over the land. Other agricultural development programme in the region under the study should include land shaping, soil

and water conservation, introduction of dry land technology, supply of farm requisites, provision of institutional credit in large scale, establishment of farm service societies, raising of community nursery and special subsidy programme to increase their level of income. Hillside soils also provide excellent condition for plantations and horticulture crops like pine-apples, orange, jack-fruits and mango. Improved grafts and other ancillary materials should be provided to the tribal cultivators for the expansion of area under fruit crops. Emphasis also should be given for the expansion of area under both monsoon and winter potato cultivation as this region is agro-climatically highly suitable for growing of such a cash crop. Water harvesting structures such as ponds, headwater dams, reservoirs and storage tanks and other structures should be constructed to tap small streams apart from promoting irrigation system for supplementing irrigation at the time of necessity. Added to these, livestock development programme should be geared up in this region in order to provide supplementary occupation to the farmers. It is, therefore, suggested that the pedigree animals and milch cattle should be supplied to the tribal households. Livestock development programme in this region should also include improvement of pasture land, fodder cultivation by individuals, establishment of feed industries, artificial insemination centres and veterinary dispensaries in large numbers, formation of milk cooperative societies and processing plants and emphasis on dairy development extension programmes. Apart from dairying, goat keeping and sheep rearing should be considered while developing programmes for economic development of weaker section of this region. In addition to these developmental programmes, establishment of forest labour cooperatives and forest produce marketing societies should be emphasised in order to protect the tribals from the exploitors. Over and above, sincere attempts should be made to minimise the communication gap in tribal region by effectively organising field demonstrations and farmers training camps.

COOPERATIVE IN THE CONTEXT OF TRIBAL DEVELOPMENT PROGRAMMES IN ORISSA : HISTORY, CASE STUDY AND ANALYSIS

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Cooperative form of organisation is being given increasing emphasis in our plans. Its expansion over regions and in different sectors is steadily maintained. It plays large and varied role in transforming economic landscape of the country. It is therefore no wonder that it has made its forays into the tribal regions. This paper is intended to explore and emphasize the extent of success of the Cooperative movement amongst the tribal people in Orissa.

The beginning and growth of the Cooperative movement in the tribal areas have been conditioned by the nature of the tribal economy, their social and cultural traits and the geographical environment in which they live. The tribals live in a food-economy of fruits, roots and leaves and wild animals. Collection of minor forest produce, cultivation on the hill areas, rearing of animals, forest based handicrafts and wage labour are their secondary sources of livelihood. Rice, cloth, salt and kerosene are the major items they require from the plains. The money lender-cum-trader advances them cash or in kind of such commodities in exchange of their produce. Cooperatives endeavour to regulate such activities of the tribal people with a view to enriching their lives.

Cooperative institutions have been with the tribals for decades. A good number of multipurpose Cooperative Societies functioned in the tribal areas and did some good work among them. The Chandikhol Multipurpose Cooperative Society in the district of Cuttack organised in 1947 granted short-term credit in cash and in grain to its Adivasi members. It ran a store section to supply rice and other necessities. Spinning, weaving and bee-keeping were introduced among the Adivasis

and materials for these were supplied free. It ran night schools for children and adults and made free supply of medicine among the ailing. The Nuagaon Multipurpose Cooperative Society in Phulbani district also ran a night school, had stores section, bee-keeping and free supply of medicines. The Angul Multipurpose Cooperative Society in Dhenkanal district had introduced Wardha ghanies, bee-keeping, poultry and spinning among its Adivasi members. It ran night schools and made free supply of medicines to the ailing. It had introduced Cooperative farming on 269 acres of land pooled by 20 members. Its membership during 1952-53 was 98, working capital Rs. 38 thousand and it made a turnover of Rs. 2.84 lakhs. The Sunabeda Multipurpose Cooperative Society had also introduced spinning and bee-keeping in its area and there were 5 such societies in the Koraput district. The membership, working capital and profit of this society during 1952-53 was of the order of 1443, Rs. 3.19 lakhs and Rs. 8 thousand[1]. During the year 1954-55, there were 6 Multipurpose Cooperative Societies in the district of Keonjhar which took up the work of upliftment of the Adivasi people. During the same year there were 8 such societies in the district of Sundergarh, 4 of which were under the management of the Tribal and Rural Welfare Department. Besides, such societies functioned in other Adivasi areas of the state.[2]

The Jamujhari Cooperative Bhagabat Collective Farming Society was organised in the district of Puri during the year 1957-58 with 40 Adivasi members. Of 200 acres of total land available it cultivated 120 acres and the yield was worth Rs. 9 thousand to earn a profit of Rs. 1300 to the society in the initial year.[3]

In the field of marketing of forest and agricultural produce of the Adivasi people and supplying them credit and necessaries of life the cooperative have done good work. The Tikabali Agency Marketing Cooperative Society organised in 1947 is the earliest society of its kind and is made a case study in the following section. The Kujendriguda Marketing Society had monopoly sale of minor forest produce from the Jeypore Estate. It had 2 stores and 5 depots where food-grains, cloth and other necessaries were sold. Its membership, working capital and turnover during 1952-53 was 184, Rs. 10 lakhs and Rs. 6 lakhs respectively.[4]

Of the 30 Forest Marketing Cooperative Societies which functioned in the state during 1964-65, 12 were in Koraput alone followed

by Kalahandi 4, Dhenkanal and Ganjam 3 each, Balasore, Mayurbhanj and Puri 2 each and Phulbani and Sundergarh 1 each. Their total membership and working capital was 13 thousand and Rs. 16 lakhs respectively. Their purchase, sale and profit was of the order of Rs. 43, Rs. 50 and Rs. 4 lakhs. In the Koraput district, the procurement of minor forest produce was reserved to Cooperative Societies at up-set price. As such some of these societies faired very well during the year. The one at Nowrangpur had purchase, sale and profit of the order of Rs. 4, Rs. 5 and Rs. 0.20 lakhs. The function of Kotpad Society in similar order was Rs. 3, Rs. 3, Rs. 0.30 lakhs. The Gumma Forest Marketing Cooperative Society in Ganjam district had a membership of 1714 and working capital of Rs 0.86 lakhs. Its purchase, sale and profit during the year was Rs. 10, Rs. 12 and Rs. 2 lakhs respectivelv. It had a carry-over stock worth Rs. 3 lakhs and its managerial cost was Rs. 0.37 lakhs. The activities of Forest Marketing Cooperative Societies in Orissa from the year 1967 to the year 1973 is shown in annexure 1. The membership, working capital and the considerable volume of consumers goods handled by these societies in addition to their purpose of marketing the minor forest produce of the tribal members may be noted.[5]

Under the scheme of economic rehabilitation of the weaker section of the community approved by the Government during 1961-62, a number of Labour Contract Cooperative Societies were formed in Orissa. The Gandhinagar Labour Contract Cooperative Society formed in Koraput district immediately doubled the wages from Rs. 15.00 to Rs. 30.00 per thousand cft. of earth work and that too leaving substantial margin of profit for the society. Thus it saved the poor illiterate Adivasi labourers of the area from the scourge of middleman-contractors. Free of charge amenities like free accommodation at work site, water, medicine. tobacco, winter clothing and ration at cost were extended to the members. The quality of out-turn was also appreciated by the authorities. Their example encouraged other labourers to organise many such societies in the district.[6]

Similarly, Forest Labour Contract Cooperative Societies were formed to organise labourers engaged in collection of forest produce and free them of lease holders' exploitation. The society at Bharatpur in Puri district was holding lease from Forest Department for marketing of fire wood [7] during 1958. There were 8 such societies functioning during 1972-73 with membership, working capital and sales of the order of 1600, Rs. 6 and Rs. 2 lakhs.[8]

The Orissa State Tribal Development Cooperative Society was formed in 1967 with the intent to marketing of forest as well as agricultural produce, purveying consumer articles, extending credit for production as well as redemption of old debts. It is to take lease of forest product and undertake processing activities. Drawing on experience of its Andhra counterpart formed a decade earlier, the society has done good work for the economic betterment of the tribals in Orissa as may be seen in annexure II. The Forest Marketing and Labour Contract Societies are taken to its membership which has doubled between the years 1972 and 1973. Its working and sales have recorded 17 and 14 times rise during the same period.

The Tikabali Agency Marketing Cooperative Society was organised in the district of Phulbani in 1947 with the purpose of collection and sale of forest and agricultural produce, provision of consumer articles and advance of agricultural loans. It is a lease holder in hillbrooms, tamarind, Siali leaves and such other minor forest produce in the area.

It handles forest produce like hillbrooms, Khali, tamarind, mat, Palua, Genduli paste, Harida, Bahada, Amla, etc. Among the agricultural produce, ground-nut, mustard, til, tamarind, Kandula, and Jhudunga are the main items it handles. The main consumer articles it purveys in the area are rice, cloth, salt and kerosene. These activities are performed through a number of branches and depots spread in its area of operation.

At the end of the Cooperative year 1974 its working capital and membership stood at Rs. 21 lakhs and 7282. The break-up of membership is at table I.

TABLE 1

	Membership	Percentage	Population	Percentage
Tribals	4815	66	2,50,605	9.6
Scheduled caste	947	13	1,17,987	4
Others	1523	21	2,53,083	3

Calculating a 5 member family unit, there will be 50 thousand families among tribal population and hence there is scope of increasing

their membership further. This can be achieved if the society diversifies its activities further and takes to, besides the existing Ghani, bone milling and tamarind milling, other processing activities.

The society paid wages to its working members for the years ending 1969 to 1973 as Rs. 4.64, Rs. 5.26, Rs. 8.26, Rs. 5,52 and Rs. 7. 16 lakhs respectively. The bonus and dividend it distributed for the years from 1962 to 1967 are in annexure III. Such payments made at festive occasions in both cash and kind are a great allurement to its tribal members.

The activities of the society from the year 1953 to the year 1974 at regular intervals of two years is furnished in annexure IV from which a steady growth of membership, working capital, purchase and sale may be noted.

The society has branches at Berhampur, Bombay and its products are sold all over India.

The Cooperative institutions in Orissa have not penetrated deep into the problems of the tribals, but can develop as a measure strategy for their economic betterment. An analysis of the tribal economy reveals that they require credit for consumption, production and redemption of old debts, marketing of forest and agricultural produce, consumption articles and agricultural inputs. These should be supplied as a package of services by a single institution of the type of Multipurpose Cooperative Society noted earlier. The area of operation of such a society may be coextensive with a Tribal Block or an Integrated Tribal Development Project. In a Tribal Development Agency, there may be as many societies as there are multiples of 25 thousand people, with the area of each society defined. Such a society will have contact with the tribal people and ensure economic viability. As the tribal people are scattered, it may have branches at strategic points. Functional operations like handicrafts, animal rearing, processing and educational and recreational activities may be taken up as is done by the existing few. The societies may take lease of forest coups and organise labour for collection of produce. The existing Credit, Marketing, Labour Contract and such other Societies operating in the area may be converted into Multipurpose Societies and reorganised by way of amalgamation or liquidation. Where non-tribals are taken as members,

they must always be in minority in the Board of Management and denied its offices. The societies may be manned by a specially trained persons conversant with the language and mores of the people they serve. Educated among the tribals may be preferred for this. The Orissa State Tribal Development Cooperative Society should function as the only Apex institution of all such societies and deal with the Reserve Bank of India, The National Cooperative Development Corporation, The Orissa State Cooperative Bank and such other apex institutions for purpose of finance and other requirements. Its byelaws are so framed that they need no amendment to discharge any such functions.

There is no reason why the Cooperative movement will not be successful in the tribal belt. Tribal people have many elements in their culture that are indicative of Cooperative life. Hunting, Folk dance, Common dwelling in dormitaries by the village youth, their honesty and natural enthusiasm are all which can nourish and strengthen the fabric of the Cooperative movement among them. The only thing that is necessary is to devise ways and means of adopting it to the needs and temperament of the people. Cumbersome administrative procedure, delay, bottlenecks of all types are some of the reasons for which the tribals do not readily accept such kind of organisation.

ANNEXURE I

ACTIVITIES OF FOREST MARKETING COOPERATIVE SOCIETIES IN ORISSA

(Rupees in Lakhs)

	1967	68	69	70	71	72	73
Societies	38	36	35	35	32	29	31
Membership (000)	16	18	20	45	44	43	44
Working Capital	20	24	24	36	39	56	69
Forest produce Turnover	37	56	47	30	77	55	97
Consumer goods	52	15	11	10	3	5	7
Profit (+) Loss (—) +	2	—.33	+2	—.33	+2	—7	+8

Source : Cooperative Statistics, Orissa 1971-72, and 1972-73.

ANNEXURE II

GROWTH OF THE ORISSA STATE TRIBAL DEVELOPMENT COOPERATIVE SOCIETY LTD.

(Rupees in Lakhs)

	1968	69	70	71	72	73
Membership	18	27	29	29	29	60
Working Capital	1.92	3.79	4.69	6.39	6.96	116.96
Sale of Forest produce	—	—	2.38	2.46	2.05	27.74

Source : Cooperative Statistics, Orissa 1972-73.

ANNEXURE III

BONUS-DIVIDEND, TIKABALI-AGENCY MARKETING COOPERATIVE SOCIETY LTD.

	Bonus paid		Dividend paid	
	Members	Rupees	Members	Rupees
1961-62	719	8716	2413	767
1962-63	746	8505	2518	1337
1963-64	1148	11733	2817	11048
1964-65	2868	27745	3142	3899
1965-66	3123	26773	3357	5932
1966-67	4328	28994	4815	8718

ANNEXURE IV

ACTIVITIES OF THE TIKABALI AGENCY MARKETING COOPERATIVE SOCIETY LTD. (Rupees in lakhs)

Year	Membership	Working Capital	Purchases	Sales	Profits
1953	1229	0.80	0.44	1.23	0.10
1956	2027	1.36	1.94	1.96	0.22
1959	2180	3.25	2.64	2.58	0.30
1962	2413	3.85	5.66	6.98	0.32
1965	3054	4.06	8.24	9.52	1.11
1968	5335	6.76	15.43	16.83	1.67
1971	7019	23.46	16.35	18.90	—
1974	7287	21.27	9.17	19.24	0,19

Source : Data are collected from the records of the society.

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A CRITIQUE OF THE TRIBAL DEVELOPMENT POLICY IN ORISSA

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Tribal communities in India are very backward and very vulnerable. Their concentration in Orissa is one of the highest in India. These people inhabit jungle and hilly areas. Their economy is primitive, less than self-subsistent and stagnant. Their food is deficient in quantity and quality. The huts, they dwell in, are supported by frail bamboo and stick structure. What they wear are nothing but rags. They are easily exposed to epidemic diseases. Their social life is narrow and custom bound and is full of festivities. They are exploited by sahukars, money lenders, contractors and servants of the government. This description of the picture of subhuman existence of tribal communities in the pre-plan days, stands substantially unaltered after a quarter of century of planned development.

In this paper the tribal development policy and programmes in Orissa is analysed. From the start of our Plans in 1951, tribes received the attention of the planners and the government. Tribal upliftment efforts in the past have meandered through several stages. Community development, multipurpose blocks and tribal development blocks have been adopted in successive Plans. From 1969 the Centre has been operating through the T. D. A. programme. In Orissa this programme was first taken up in Paralakhemundi in the district of Ganjam and is now proposed to embrace areas in Keonjhar, Bonai, Palalahara, Koraput and Phulbani districts. A new strategy has been outlined in the Fifth Five Year Plan of Orissa for the tribal people. It is contemplated to give "personalised attention"[1] to a cluster of families under integrated area development programme. Since economic development of people and areas flows from planning in general, the Fifth Plan of Orissa reasonably acknowledges the responsibility of orienting the formulation of Plan schemes in favour of backward classes.

It is, however, to be admitted that there is no full proof and cut and dried strategy to yield sure results in respect of tribal programmes. From the inception of planning, a trial and error[2] method has been

followed. From the policy declarations and from the implementations of tribal development programmes, certain problems that are important but neglected have to be debated so that the direction of tribal development will not take a serpentine course.

Duality in Tribal Development Policy

There are elements of conflicts noticed in the formulation of tribal welfare policy by our planners and administrators. On the one hand, it is proposed to bring about progressive material advancement in such a way that they can be eventually integrated with the rest of the Indian people. On the other hand, it is emphasised to preserve and foster "all that is good and beautiful in their culture"[3] and to do least violence to "the essential harmony of their lives"[4]. Tribal economy and culture is, by and large, stagnant. It does not encourage and foster change. A major break with the tradition is a precondition to economic progress which is bound to necessitate drastic change "in the totality of social, cultural and religious institutions and habits and thus in their psychological attitude, their philosophy and way of life"[5]. Tension, again, is a price of progress. It is clear that if attempts are made to preserve the tribal culture uncritically, that will be fatal for their material welfare. In a dynamic world of rapid changes when different cultures are coalescing, it is pointless to advocate for preserving a definite culture. Planning implies priorities. Economic development is the first consideration. Let the culture be planned to change its course compatible with development. Certain habits of the tribal people are inimical to progress, such as overemphasis on enjoyment and merry making, rituals and festivals that last for days together and their attitude of non-challenge towards future. These need drastic revision to effect development. How best and how smoothly their culture shall be tailored and to what extent persuasion and direction shall be used depends upon how best we understand and guide the tribal people. What is being emphasised here is that the policy should have singular aim of economic development without having any obsessive desire to preserve tribal tradition. If there is anything enduring in tribal culture, it cannot die down. On the contrary, such a cultural trait will be refined in due course.

The Problem of Acceptance

Tribal people in general are considered primitive savage individuals. They are thought to be inferior in intelligence and in their attainments. By branding them as adivasis or aboriginal tribes

or girijans, we have unknowingly treated them as less than human beings. There are, among us, persons who in their curiosity to know such people want to keep them as samples of man's ancient heritage. Much trouble and many difficulties owe their origin to such attitude. Those tribal people who have become enlightened feel and make their kinsmen feel that they are kept underprivileged. Political unrest in Nagaland, Arunachal. Mizoram and the claim for Jharkhand state are evidences of underlying conflicts that spring from the same source. Further it has been found that privileges meant for tribal people are usurped by civilised plainsmen. Some administrators who execute plans among tribal people perform their work perfunctorily under the spell of the same belief. It will do us a world of good if we accept them as our equals and treat them so. Experts believe that intelligence is mostly hereditary. Any difference in intelligence among races is attributable to environmental conditions[6]. It means that if tribal children are exposed to varied and ampler opportunities, they can within reasonable time, catch up with the rest of the Indian community. The fact that we have mental barriers against them, planned effort is not as it ought to have been. From the point of view of operational technique, such administrators who are impartial and show a positive commitment in favour of the tribal people should be recruited and posted in the tribal regions.

Regions Vrs. People

It is an extraordinary coincidence that the regions these people inhabit are full of mineral deposits. Some modern big industries have been located in these areas on account of the availability of mineral resources. It was hoped[7] that such regions acting as 'growth poles' would transform the area and people. From a case study[8] made by B. K. Roy Burman it is generally established that in Rourkela, a majority of tribal people suffered varying degrees of economic injury. They were forced out of their native soil. They were exposed to the uncertainties of modern civilisation. Their culture was mutilated which resulted in unnecessary and avoidable tension and conflict. The benefits which some tribal people have received from the establishment of the steel town, Rourkela, pale into insignificance compared to the affluence which the upper strata of Indian society has derived form it. "It is a mistake to count some people's gain, ignore others' losses and use the results to rationalise public policies

....."[9]. A few miles off Rourkela tribal people are as backward as they were. They are not in a position to communicate with the industrial complex and wrest advantages from it. No forethought has been given to educate, train and motivate the tribal people as a step towards integrating them with developmental activities. In future mineral based industries will come up in several places of Orissa. It will be a grave mistake if the 'growth pole' approach of Rourkela type is followed.

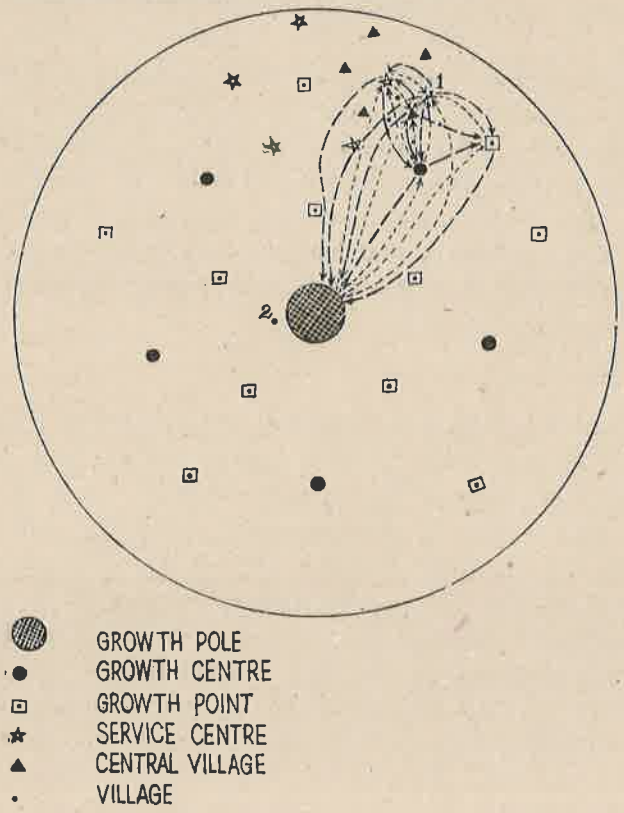
An imperious necessity

Tribal people live in subsistence economy; barter still forms the hard core of their economic system; money has only touched the fringe of their life. An effective solution to their age-old poverty is to integrate their economy with the money economy of the advanced sector. Price economy is greatly distrusted in India but there is nothing exclusively evil or good about it. It can be made to serve desired purposes. Production, distribution and income generation can be effectively handled through price-mechanism. Unless the tribal people are brought into the orbit of the price-structure of our country, they can not effectively take advantage of benefits of social changes. There is, however, danger in the process of transition. They may be subjected to price rigging and monopsonostic exploitations. An effective legal frame work and executive vigilance will be an effective deterrent.

In the past, all our efforts have not adequately transformed the tribal economy. A new approach that combines growth pole hypothesis of Perroux and Christaller's central place theory "integrated with the spatial diffusion theory" is being developed and prescribed by regional planners. It appears that an adaptation of the approach in the developmental programmes of a tribal region has a promise of good success. The approach is outlined schematically as follows :

A five-tier hierarchy of growth foci has been contemplated ; the number and size of the foci will be of different order to serve greater or smaller number of population. A village is served by the growth foci directly or in an interconnected manner. This has been shown by arrow marks. No. 1 is a village with direct and indirect links. It can respond to growth stimuli radiated from the growth pole, growth centre, growth point, service centre and central village. It also along with other villages transmits resilience

SCHEMATIC REPRESENTATION OF GROWTH FOCI :



to the apex rungs of hierarchy. No. 2 is indentified as a village in the neighbourhood of the pole which has no links or feeble links with growth foci. This village becomes depressed. It is on account of the absence of two-way links. May be, the village is in an inaccessible terrain without roads. There may be no input-output relationship with the growth foci. May be without educational or cultural interaction, the village remains isolated. It may be due also to the fact that the power structure is such that no attention is paid to the villagers or the allocated resources meant for their upliftment are expropriated by the civilized elites including the administrators. It is quite possible that all these reasons may operate simultaneously.

This growth foci approach enjoys certain distinct advantages. It aims at a balanced and integrated temporal, sectoral and spatial development. Secondly, the present strategy of bestowing personalised

attention on a limited number of families through area development programme can be fitted into this scheme. At present, different agencies viz. WHO, UNESCO, UNICEF, CARE, missionaries, state and central government are working out their respective programmes in the tribal areas. All these can be effectively coordinated within the frame work of this approach.[10] Finally the present approach will not be costlier than what the alternative approaches have entailed. The only thing that has to be emphasised is that a techno-economic survey has to precede the implementation of this approach.

Conclusion

After two decades of planning by spending a total amount of Rs. 710.93 crores for the tribal people we can not assert that the standard of living of these people has really gone up. Improvement, if there is any, is only marginal. Over 97 % of the tribal population lives in rural jungles. The literacy achieved by them remains sustantially low around 9 % as against 25 % among the total population. About 88 % are agricultural labourers. The qualities of life they lived remained lustureless. If a solution is sought through the growth foci approach it cannot go unrewarded, provided the scheme is implemented with dedication, honesty and competence.

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DEVELOPMENT STRATEGY FOR SCHEDULED CASTES OF ORISSA

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"Growth with justice" is the main objective before the Planners and the Governments of both the Central and the States to be achieved through various developmental schemes. This objective can be achieved if the plan efforts succeed to develop the economic conditions of the lower strata population of the society. The Scheduled Castes and the Scheduled Tribes constitute bulk of the lower strata population of our country. Continuous planned efforts along with various constitutional safe-guards and privileges have been made to improve the social, political and economic conditions of this section of our population since independence. An attempt has been made in this paper to examine the conditions of the Scheduled Castes of Orissa and focus attention on some important aspects for their development.

According to 1971 census, the Scheduled Castes constitute 15.09 percent of the total population of Orissa. This proportion is slightly higher than the corresponding all-India proportion which is 14.60 per cent. The census reports of 1961 and 1971 reveal that the total population of Orissa which was 17,548,846 in 1961, increased to 21,944,615 in 1971 recording an increase of 24.99 % while the Scheduled Castes population in the state which was 2,763. 858 in 1961, increased to 3,310,854 in 1971 indicating an increase of 19.79 %. Thus, the growth of Scheduled Castes population was much lower than that of the average population in Orissa during the last decade.

The distribution of the Scheduled Castes in the districts of Orissa, according to 1971 census, shows that the heaviest numerical concentra-

tion of population is in the coastal districts of Cuttack, Ganjam, Balasore and Puri. Reckoned against the total scheduled caste population of the state, about one-fifth (20.88 percent) inhabit Cuttack district, while nearly one-tenth live in each of the districts of Ganjam (11.03 %), Balasore (10.23 %) and Puri (9.57 per cent)[1].

The Scheduled castes mostly live in plain areas among the Caste Hindus and other advanced communities. The stigma of untouchability still prevails in our society for them and most of them continue to be backward socially, economically and educationally. Due to this stigma, the Scheduled Caste people were deprived of education for a remarkably long period. Only after independence the Government took initiative to spread education among them. Due to cultural backwardness and poor economic conditions, this section of our population lack consciousness of education. To arouse consciousness among them and to attract them towards education, the government have executed various schemes. The government of Orissa have established Sevashram, Residential Sevashram and High Schools run by T. R. W. Department. Reading and writing materials such as nationalised text books and other text books, paper, pencils, pen-handles, nibs etc. are being supplied to scheduled caste students at the primary stage by the Government free of cost. The Scheduled Caste students reading in sevashrams are supplied with two pants and two shirts each per year free of cost. For higher education and technical education some seats are kept reserved for them. The Government have also awarded Pre-Matric and Post-Matric scholarships to encourage them for higher studies. Hostel facilities are also being provided for them. The Government have also provided coaching facilities to the scheduled caste students with a stipend at the rate of Rs. 80/- per month who are desirous of appearing at the various competitive examinations of the State Civil Services as well as All India Services.

In spite of all these incentives and facilities provided for them by the Government, the literacy level of the Scheduled Castes has not increased up to mark. According to 1961 census the literacy level among them was only 11.6 % which increased to 15.60 % in 1971 census. The corresponding figures for the general population of Orissa was 21.66%

1. B. Tripathy—A portrait of population, Orissa, Census of India, 1971, Series—16 page 303.

and 26.18 % respectively according to 1961 and 1971 census. The following Table shows the district-wise distribution of literacy among the Scheduled Castes of Orissa during 1961 and 1971.

TABLE 1

DISTRICT-WISE DISTRIBUTION OF LITERACY AMONG THE SCHEDULED CASTES OF ORISSA DURING 1961 & 1971

Name of the District	1961			1971		
	S. C. Population	Literacy	Percentage	S. C. Population	Literacy	Percentage
Balasore	266,754	37,024	13.9	338,802	69,536	20.52
Bolangir	187,422	13,930	7.9	208,430	24,344	11.67
Cuttack	547,922	67,701	12.3	691,180	124,757	18.04
Dhenkanal	187,156	22,681	12.1	216,887	32,695	15.07
Ganjam	308,298	31,340	10.2	365.289	44,939	12.30
Keonjhar	102,942	15,948	15.5	107,784	20,620	19.13
Koraput	186,438	12,215	6.5	274,115	25,225	9.20
Kalahandi	190,520	13,722	7.2	199,151	18,943	9.52
Mayurbhanja	104,273	12,888	12.3	103,713	17,867	17.22
Phulbani	99,399	12,365	12.4	117,987	17,283	14.64
Puri	264,615	35,770	13.5	316,831	57,001	17.99
Sundargarh	73,134	8,476	11.6	82,692	14,803	17.90
Sambalpur	244,985	35,611	14.5	287,998	48,734	16.92
Total	2,763,858	3,169,71	11.6	3,310,854	5,16,767	15.60

Source : – "Adibasi"-July & October 1972-Vol. XIV-1972-73 Nos. 2 & 3 – Tables I-D & I-F. pp. 18 and 20.

Table I reveals that there has been an increasing trend of literacy in every district of Orissa among the Scheduled Castes. But the rate of growth is not similar in case of all the districts. Keonjhar which occupied the first position in this respect in 1961 assumed the second position in 1971. Balasore which occupied the third position in 1961, comes first in ranking in 1971. Koraput and Kalahandi occupied the last positions in both the Censuses.

The low percentage of literacy among the scheduled castes in comparison to the general literacy level of Orissa is mainly due to low economic condition of these castes. The children of the scheduled castes engage themselves to earn something from their very young age to support their family. Hence, the percentage of school-going students of the scheduled castes is very low. Most of them also drop out from schools due to abject poverty. To spread education among the scheduled castes, therefore, mostly depends on the upliftment of their economic condition. The facilities that are being provided to them by the government fails to some extent to attract the scheduled castes towards education.

According to 1971 census the percentage of workers among the scheduled castes is higher than that of the general population of Orissa. About 33.55 % of the scheduled castes are workers while in the case of general population it is 31.22 %. A large proportion of them are agricultural labourers. And as for those among them who own land, it is well known that the bulk of them have such small holdings that their conditions is hardly better than that of agricultural labourers.[2] The overwhelming majority of them are engaged in manual work, and particularly in occupations which are held to be onerous. Some of them are associated with a variety of specialised traditional occupations such as scavenging, leather-work (including flaying and tanning), basketry etc. Much of the stigma attached to them is associated in the popular mind with the very nature of the work which they do.[3] An occupational distribution of the workers among the Scheduled castes of Orissa as reported in the last two censuses are given in Table 2.

Table 2 explains the distribution of Scheduled Caste workers of Orissa under different types of work as enumerated during 1961 & 1971 censuses. The comparison of data of the two censuses shows that there has been a great discrepancy in distribution of workers in three major types of work namely cultivators, agricultural labourers and other services. During 1961 census 38.2 % of total scheduled caste workers were cultivators while it decreased to 27.4 % in 1971. Agricultural labourers constituted 26.5 % of total scheduled caste workers in 1961 which increased to 49.2 % in 1971. Those engaged in other services mostly

2. Castes : Old and new—Andre Beteille; page 99.
3. Ibid—page 91.

TABLE 2

OCCUPATIONS OF SCHEDULED CASTES IN 1961 & 1971

Sl. No.	Type of Workers	1961		1971	
		No. of workers	Percentage to total workers	No. of workers	Percentage to total workers
1.	Cultivators	469,846	38.2	304,918	27.4
2.	Agricultural labourers	327,347	26.5	546,525	49.2
3.	Mining, Quarrying, Livestock, Forestry, Fishing, Hunting, Plantations, Orchards and allied activities.	30,739	2.5	35,533	3.2
4.	Manufacturing, processing, Servicing and repairs				
	i. Household Industries	129,340	1.6	59,567	5.3
	ii. other than household industries.	4,031	0.3	17,032	1.5
5.	Construction	1,17	0.1	5,608	0.5
6.	Trade and Commerce	16,352	1.4	18,044	1.6
7.	Transport, storage and Communications	2,742	0.2	17,388	1.5
8.	Other services	298,520	20.2	106,005	9.5
	Total Workers	1,230,630	—	1,110,640	—

Source—Adibasi—op. cit Table—II, Page 22.

perform jobs like dhobies, sweepers etc. In this category, there has been drastic decline of percentage of workers between 1961 and 1971. In 1961, the percentage of workers in other services was 20.2 while in 1971 it became 9.5. But in other types of work there has been increase in the percentage of workers in 1971 over 1961. A marked difference is noticed in workers engaged in household industry which includes mostly basket-weaving, hide collection, carrying and tanning etc. In this type of household industries, the percentage of workers engaged in 1961 was only 1.6 whereas it increased to 5.3 in 1971. This is an encouraging phenomena in 1971. The decrease in percentage of workers in other services is quite deplorable. It may be concluded that the "Scheduled Castes have to face stiff competition from the higher caste people and as a result of this they have not taken the proportionate benefit of the expanding scope for employment under this category"[4].

It is also seen from table 2 that in 1971 nearly half of the working population of the Scheduled Castes are agricultural labourers. This proves that the Scheduled Caste population in the villages is dependant on land owning classes. To minimise their dependance on land owning classes, the government have taken up a scheme to lease out waste land in favour of them. Table 3 shows districtwise distribution of lease of waste land in 1971-72.

Table 3 reveals that a total amount of Ac. 2,346.82 of waste land were distributed to 2,098 households of the Scheduled Castes in 1971-72. Out of these leased out waste land more than half of such land was distributed in the district of Dhenkanal. In the district of Balasore, the distribution of such land was negligible. But on an average about 1 acre of waste land was leased out to each of the beneficiaries. Such type of distribution of land will certainly not make one a viable farmer but none the less it will create confidence among them as land owners.

Besides all these, the government of Orissa have taken other welfare schemes like area development, housing, poultry rearing, subsidy for cottage industries, industrial training, selfemployment, electrification of S. C. villages for the economic upliftment of the S. C. of Orissa. Provisions of Rs. 10 lakhs, Rs. 5 lakhs, Rs. 2 lakhs

4. Adibasi – Op. Cit. page 11.

TABLE 3

LEASE OF WASTE LAND IN FAVOUR OF S. C. DURING 1971-72

Name of the district	No. of S. C. benefited with land	Area in acres
Cuttack	85	207.98
Puri	71	28.23
Balasore	3	0.78
Mayurbhanj	69	60.97
Ganjam	440	119.68
Koraput	157	487.25
Kalahandi	12	N.A
Phulbani	5	7.07
Dhenkanal	1,171	1,332.39
Sambalpur	56	65.78
Sundargarh	15	23.70
Keonjhar	9	3.49
Bolangir	5	9.50
Total	2,098	2,346.82

Source : Annual Administration Report for the year 1971-72. T & R. W. Dept., Govt. Of Orissa. Appendix—XVIII, Page 88.

Rs. 2.50 lakhs, Rs. 9 lakhs, Rs. 4 lakhs, Rs. 0.25 lakhs have been made for the above mentioned welfare schemes respectively in the Draft Fifth Five Year Plan of Orissa.

In view of the size of S. C. population of Orissa, all the measures taken by the State Government are not sufficient to lift the Scheduled Caste people from their abject poverty. It is really a very hard task on the part of a poor state like Orissa. In view of the poor economic condition of the state and the size of the schedule caste population in the state, it is the moral duty of the central Government to give more funds for the development of the backward population of Orissa.

For the transformation in the economic position of the Scheduled Castes, their traditional household industries, poultry rearing

and selfemployment should assume priority. The Scheduled Caste people are prevented by their insecure position from initiating any kind of major economic change. Voluntary organisations have an important role to play in creating consciousness among the Scheduled Castes for their developmental needs. Serious efforts should be made to eradicate the practice of untouchability. Mechanisation of unclean occupation will go a long way in this direction. Constitutional and other guarantees will have very little meanings so long as the scheduled castes remain poor, illiterate and unorganised.

PROSPECTS OF JUTE CULTIVATION IN KENDRAPARA SUB-DIVISION

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Jute is one of the most important commercial crops of India. In 16th century, it is reported that Jute cloth was being manufactured and export was made in 1828 to Europe. Since then, it has acquired an important place in our major export items. It is regarded as a commercial crop mainly in the eastern states like West Bengal, Bihar, Assam and Orissa. Of course during 1947—partition, major jute growing areas went to East Pakistan (present Bangladesh) and we retained most of the Jute mills only. By this time we have increased our jute acreage sufficiently to feed these mills.

It is felt that though jute is an important item in our export list, yet there is much to be done to increase its acreage and its overall production. Research on cultivation and technology of Jute has been going on for a long time; but a comprehensive treatment of the subject has been lacking so far.

Leaving other problems, like problems involving cultivation and technology to the hands of technical personnel, we can here analyse some problems like economic marketing problems of jute. It has been the endeavour of the Economic Research Section to study them continuously, lay bare the causes underlying them and suggest suitable remedies for them. Problems of Jute are varied and complex beginning from field to factory and factory to world market. In this paper an analysis of the subjects like world consumption of Jute, factors affecting the demand and supply position of jute, relation between prices and acreage under jute.

India and Pakistan are combinedly responsible for 80 % of the world Jute production. Our own state Orissa stands fourth among Indian states on Jute production. Again in Kendrapara agricultural District nearly 23943 hectares of land is used for Jute cultivation, while in

Orissa Jute acreage is 50,000 hectares. From the departmental sources it is learnt that this year the target is fixed at 25,000 hects. to be brought under Jute cultivation in Kendrapara only. While the acreage is increasing, simultaneously also yield per acre has increased from 8.19 mds, in 1948-49 to 10.95 mds. in 1954-55, and to nearly 12 mds. presently. A demonstration result of last year shows that 60 % of land yield 20 quintals per hect. If we take an average of normal produce we can safely take yield per hect. to be 12 quintals. Thus in Kendrapara the total production of Jute can be about 288,000 quintals. The Jute stick produced in Kendrapara is roughly 576,000 quintals, or double that of Jute.

After giving an idea about the actual produce of Kendrapara, we can examine some of its problems. Acreage of Jute in a year mainly depends on the previous year jute price. All our Jute is transported to Calcutta and thus rightly the price of Jute in Calcutta market has got an immediate impact on Jute acreage in Orissa. If the price falls there, for some reason or other, then raw jute producers here, expecting a lower profit, decline to increase Jute cultivation. A few days back the Commerce Minister Mr. D. P. Chattopadhyaya admitted in the Parliament that one of the reasons as to why Jute production fell from 7.6 million bales in 1973-74 to 5 millions bales in 1974-75, is the diversion of land under jute cultivation to other crops. Of course, unfavourable weather and flood have their adverse impact on Jute production. Farmers switch over to other crops, when they find it more paying than jute, either due to fall of Jute price or due to increase in prices of other crops.

Major portion of Jute is exported to other countries in the raw form. Raw importers are mainly U. S. A. & U. K. In the international market, quality of a product and its price determine the demand for the product. Due to lack of proper knowledge in Jute retting, our farmers lose nearly Rs. 25.00 to Rs. 30.00 per quintal. Proper care taking does not require more capital, but its absence makes the Jute black, sticky and less fabricated. It is true that Jute of Orissa is stronger and more liked in Jute mills compared to that of other states. Jute of Kendrapara is the best in Orissa and that of Balasore is the worst. The quality of Jute can be increased by careful retting in modern methods. Agriculture of our state as a whole is less modernised and less commercialised. In international market, our Jute is high priced because of Government's excess export duties and the higher cost of production. Japanese Jute

industry has started competing with Indian industry in American market. Egypt. Iran, Burma, Ceylon have also partially snatched India's monopoly. Paper, polythene & other substitutes have also reduced the importance of jute as a packing material.

In our own state we do not have sufficient jute mills, otherwise it would have reduced our dependance on outside market for selling raw jute. Those mills which are existing are mainly concentrated in Calcutta. This concentration of Mills in one place has increased transport cost; and this single market has developed an unnecessary control over Jute Prices. Again most industries there produce semi-finished products from Jute, whose market is gradually declining. Frequent modernisation of industries has not been possible in last decades. Therefore, to overcome these difficulties like high transport cost and thereby high cost of production of Jute goods, our mills need be dispersed throughout the Jute growing areas. Here it can be said that the jute produced in Kendrapara only can feed a mill, if one is erected here. In Kendrapara, we have seen nearly 288,000 quintals of Jute is produced. This huge quantities of Jute will be able to provide raw materials to a medium type of jute Mill. This will save transport cost and to some extent can help to solve unemployment. Establishment of a mill at Kendrapara is justified from all economic point of view as the raw material, labour, and power are cheaply available here. Finished goods can have an outlet through Paradeep port. The suitable place for a Jute Mill in my opinion is Marsaghai Block with the closest distance to Express highway and Luna river. Again a Mill here can have a direct positive impact on the incentive of the cultivators through higher price. The presence of intermediaries and the consequent exploitation of indebted farmers can be avoided to some extent. Though societies like Danpur Jute Marketing Society have been playing their role here, they are only responsible for 50 % of Jute purchase. No steps actually have been taken to increase the financial strength of the Cultivators. The Reserve Bank of India's constant regulation of Co-operative Bank's credit expansion, has a negative impact in this line. During harvest an average grower in this area needs considerable amount of cash for meeting wages of labourers employed by him for the purpose. Besides, the period from July to October each year being the lean period so far as the supply of rice is concerned, an average grower is left with little stocks of rice, he has therefore, to buy his requirement of grain from the market, thus he is hard pressed for money and is left with no other alternative except selling the jute at a low price. Instead of maintaining normal parity with

the price of rice that of Jute has remained considerably below parity, thereby adversely affecting the standard of living of the Jute grower. Earlier cultivators here were cultivating paddy for their own consumption and Jute as a cash crop. But when price of jute falls below parity with the price of rice, they try to switch over to some other crops during March to October. Some cultivators opt for "Dalua" paddy and some also cultivate groundnut. These crops become more remunerative for them than Jute. On recommendation of the Agricultural prices Commission, the Government is fixing a minimum statutory price for jute every season. But practically this does not help the average farmers in any way. For example, the Danpur Society fails to purchase all the Jute that comes to market for sale at the statutory price due to shortage of capital. Thus there occurs an accumulation of Jute in the harvest season and intermediaries take advantage by offering a price much below the government's fixed price. Cultivators are also bound to sell the jute at the price fixed by these intermediaries. The claim of Jute corporation of India to eliminate these middlemen has less practical validity in case of Kendrapara, when the Government sponsored agencies are themselves running short of capital. Lack of adequate financial resources hampers Jute cultivation in many ways and makes it extremely difficult for the Jute grower to adopt improved methods of Jute cultivation. The organised sources of credit such as co-operative Banks and Societies are inadequately functioning here and cover hardly 22 % of the requirement. Low prices in two successive years, coupled with credit squeeze may lead to a shrinkage in Jute cultivated area, thereby making it too difficult to achieve the all India target of 7.28 Million bales of Jute in 1975-76.

Grading is another important constituent of the marketing system. Grading must be scientific not arbitrary. At present the grading system is very complex and area-wise. In the primary transactions, un-assorted bundles are marketed and these are generally accorded low-priced average grade treatment by the primary buyers. The production of superior varieties of Jute cannot be ensured by simple fixing a higher statutory price. This method may help in the secondary market. But the primary producers can get the benefit of grading only when grading is done at primary level. Here a cultivator is mostly ignorant about the grading system and is subject to arbitrary methods of grading of private parties. Therefore, technical personnel may be instructed to educate farmers on simple grading system of the Indian Standard Institute. Otherwise all the efforts will go in vain and ignorant cultivators will simply be exploited. Expansion of markets by deputing enough purchasing agents

with sufficient finance will help the farmers in getting a fair price. Jute coming to the market should be purchased without delay. When cultivators here are eager to pay off their loans or to purchase their rice requirements, they should not face a bearish market. The market is presently being dominated by private purchasers of Dhanmandal area. The existing society is very late in action while fixing gradation and the price. Private businessmen take advantage of dull market and bargain a lower price. This exploitation need be eliminated by fixing a lower possible (Floor) price for jute and purchasing them immediately. A mill here at the spot can successfully tackle this problem through its own purchasing agent and also operating loan scheme. If the produce is sold after grading at the firm level the farmers' share in the ultimate consumer price tends to increase and thus provides incentive to them.

Most of the Jute in Kendrapara is transported by country boats, lorries, Bullockcarts to different markets. Lack of sufficient transport facilities results in longer storage of Jute threby involving additional expenditure on account of extra storing charges, loss of weight in dryage, interest on capital outlay etc; all of which put together roughly amount to Rs. 8.00 to Rs. 12.00 per quintal per month. Moreover storing in an unscientific manner such as open to dust, rain and rats; results in destroying the quality and lustre of Jute. Most farmers store the Jute in heaps before they are properly dried up. Thereby the strength of the fibre is lost to some extent. Uncovered jute heaps gather dust over them and some are also eaten up by rats. These are a few difficulties in Jute cultivation and Marketing here. The point that is to be made clear is that only more production of Jute should not be our aim. We must activise the place and market in such a manner that all that is remaining as marketable surplus is sold at a fair price. No accumulation takes place resulting in a lower market price. If demand for Jute could be increased by establishing a Mill here and increasing the marketing facilities, then Jute cultivation could be looked upon remunerative. This will increase Jute acreage and will solve many problems at a time. Presently only about 3 % of total quantities of Jute produced is consumed in villages for cattle and cottage industries. About 56 % is consumed by the mills in India and 41 % is exported. Our aim should be to increase the consumption of raw Jute for making Jute goods at the village level. Then after it comes out as completely finished goods or partially finished goods it may be sent outside. This will make the industry expansive and less subjective to the vagaries of outside market and simultaneously our earning will increase by exporting finished goods not raw jute.

It is learnt from local enquiry that the price offered by Danpur Society is always fluctuating alongwith that of Calcutta market. The Society offers here a price Rs. 20.00 to Rs. 30.00 less than Calcutta rate per quintal. This amount meets the transport insurance etc. If we have our jute mill here, farmers will be able to get nearly Rs. 20.00 more per quintal. Another reason as to why the poor farmers are exploited is that the society's funds are very limited and insufficient to purchase all marketable surplus.

To justify our case for a jute mill here in addition to one at Dhanmandal. we can say that the Jute goods of the mill have got a good potential market here. The bags we are using to keep our paddy, wheat, sugar, etc. are brought from Calcutta when we sent jute from this place. Sacks are usually made from ordinary quality jute and we can for ourselves produce them here. Increasing cement industries in our state will be responsible for consuming a major portion of Jute sacks. Gradual growth of other sophisticated industries like fertilisers, sugar, chemicals, medicines will mean an enhancement of Jute good market, because jute will be used as a packing material. The higher price of polythene bags due to the rise in the prices of petroleum products, may shift their demand in favour of Jute goods. We may also export the surplus as soon as the cargo berth is completed at Paradip.

To make jute market a steady one in addition to the expansion of the home consumption, we are still to depend on foreign market. America imports 82 % of her total jute import from India. But American market predominantly is a market for Burlap, though there is a large demand for raw Jute, bags, sacks too. Our exports at times falls miserably below international quality and that is why we lose our market there. Other countries like France, U. K,, Italy, Belgium, Germany also compete there for U. S. Burlap market. Of course France entered into U. S. A. market after the war. It is. therefore, essential to have an on the spot study of the methods of production and marketing of Burlap in these countries for our benefits. While speaking about this quality of jute, we are proud that Jute of Orissa is better than that of other states and we receive nearly Rs. 5.00 more per quintal for our Jute. Next to our Jute comes Jute of West Bengal, Assam, Bihar, U. P., M. P., and Andhra-Pradesh in quality. Still our jute at times falls below international level and we lose our market. This shifting of demand should not be considered as there is no market for our Jute.

Actually Jute of good quality has got enough market. Proper retting of Jute has got a good effect on the quality of the fibre. Though sufficient jute is cultivated at Kendrapara yet there is no specific Jute retting tank at any place. In West Bengal there are many Jute retting tanks, which are mainly responsible for the quality. Here the farmers use nasty, mud water for retting, which makes the Jute black and some portions are left unretted. The strength of the fibre is reduced. For Jute retting clear but still water is necessary. Here we get still water but that is not clear. Some farmers due to lack of knowledge put mud over the Jute bundles to sink them in water. This process again destroys the quality of fibre. Stone slabs should be used for this purpose. Some instructions on this imparted to the farmers will help a lot. Here technical people have got a responsible duty of instructing farmers on these specific points. Practical demonstrations undertaken by Agricultural Department will also help.

While a jute mill at Kendrapara will help the Jute grower by providing a quickly absorbing market for their raw jute, a paper mill here can provide them with additional financial assets. Research findings prove that paper can be produced commercially from jute sticks. A calculation can show the huge quantities of Jute sticks that are mainly misutilised for fuel purpose. If 25 quintals is considered to be the average yield of Jute sticks from each hectare of land (i. e. twice of Jute), the total Jute sticks that are produced here will be around 600,000 quintals. This huge quantities of Jute sticks are mostly used for fuel purpose as it very easily catches fire or are destroyed due to lack of proper storage. A farmer who has no storing facilities for his paddy and Jute, can hardly keep these sticks under the roof. If some small scale paper industries are encouraged here, those sticks can be best utilised for the purpose. Some purchasing agents with a very small capital can purchase these sticks from the farmers soon after the harvest. It will serve as a very cheap raw material for the paper industries, because the Jute growers will readily sell the sticks for Rs. 12 per quintal. This small amount may help them towards purchasing seeds for the next year.

Not only here in Kendrapara, but throughout India jute growers have started switching to other crops. That is why all our jute production in 1974-75 has fallen by 2.6 million bales from the previous year's achievement. One may wonder how at Kendrapara the Agriculture

Department has fixed a target of 25,000 hectars, i. e. one thousand hectars more than last year's acreage, when the general trend is to switch to other crops. It can be explained by taking up some specific studies. Cultivators are switching to other crops because the price of jute is always fluctuating. The government is announcing the statutory minimum price only when jute has already reached the middlemen. The farmers are not able to reap any profit due to this statutory higher price because there is always a large difference between prices of the primary and secondary markets. Presently at Calcutta, jute is sold at Rs. 157.00 a quintal, while in primary market jute price is varying between Rs. 137.00 to Rs. 147.00. This is how the farmer finds jute cultivation to be less paying. Rather farmers of Kendrapara, Derabish, Pattamundai, Marsaghai etc. prefer to cultivate "Dalua" paddy. Paddy cultivation requires less investment and its price is always increasing at the primary level. The farmers reap direct profit from any increase in the price of paddy. In case of jute they are not profited in any such way. Raw jute shows very little tendency of price increase while prices of jute goods increase. Yet farmers of Patkura, Aul, Rajkanika are still eager to cultivate jute, because jute cultivation is newly introduced there. This year in Patkura 256 hectares, in Aul 300 hectares and in Rajkanika 285 hectares more of land are to be brought under jute cultivation. According to the advice of technical people groundnut may be cultivated prior to jute and jute may be sowed in early March soon after groundnut harvest, then it may be followed by one paddy. Thus three crops can be raised and it is the best three that a farmer of this area may take up. If this practice of three crops is widely accepted then there will be no chance of other crops, competing with jute.

Thus it can be concluded that Kendrapara being an important jute growing area in Orissa as well as in India, has got lots of potentialities to improve its jute acreage and quality. It has at the same time all economical advantages for a jute Mill and a paper Mill. The problems that are here are those of organisation and know-how. This can be safely overcome by sincere efforts of the popular Government to educate people and by the local people to learn them with interest. If we try to avoid the issue by blaming the narrowness of market, then our reasonings will be self deceiving,

WEATHER UNCERTAINTY OF AGRICULTURE IN ORISSA

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Orissa is a land of plenty so also a land of poverty. This fact still remains true after 28 years of independence and 25 years of national planning. The state per capita income of Rs. 250 at constant price (Rs. 467) in 1970 has the fourteenth rank and about 64 % of the population live below the poverty line. This is because 60% of the State income depends on agriculture and it is greatly affected by droughts and floods which frequently prevail in the State.

The last 1971 census has shown that the population of Orissa will continue to be predominantly rural, i. e. 91.59% of the population live in rural areas. This large population purely depends on agricultural sector which is not in a position to take such heavy load. It is not possible for the State economy nor the Indian economy to divert about 50% of the rural population to some non-agricultural enterprise. Thus, Orissa's economy is going to remain basically agricultural for a long time to come.

Further, the 1971 census shows that 24.17 % of the total population is engaged in agricultural sector. This is 78% of the total working force. Table. I gives the proportion of agricultural workers (cultivators and agricultural labourers) to the total workers sex-wise.

TABLE 1

PROPORTION OF AGRICULTURAL WORKERS TO TOTAL WORKERS

Year	Male	Female	Total
1961	74.88	71.42	73.82
1971	76.23	93.67	78.00

This table shows that more female workers are coming to the agricultural sector as there is no other avenue for them in the rural areas.

Experience in the past has shown that Indian agriculture has by and large absorbed the rural labour force. But with what result ? Has this led to less productivity of labour ? Table 2 shows that

TABLE 2

DENSITY OF POPULATION, GROSS CROPPED AREA AND PRODUCTION PER AGRICULTURAL WORKERS

Year	Gross cropped Area (hectare)	Density of population per hectare of gross cropped area.	Gross cropped area per agricultural workers (hectare)	Production of cereals per agricultural workers (quintals)
196I	61,36,000	2.9	1.08	6.73
1971	72,33,000	3.0	1.36	8.74

with the increase of the gross cropped area the density of population per hectare is increasing, thereby more number of persons are depending on one hectare of land for the food requirement. The gross cropped area per agricultural worker has increased from 1.08 hectare in 1960-61 to 1.36 hectare in 1970-71. This is due to syphoning of rural labour force to urban and industrial areas. This shows that the productivity of labour force has increased as far as gross cropped area is concerned. The production of cereals per agricultural worker has also increased from 6.73 quintals in 1960-61 to 8.74 quintals in 1970-71. This clearly shows that the productivity of agricultural worker has increased over the decade mainly due to increase in area and more intensive agriculture.

Our Food Need

Even after so much of planning after independence, the country has not achieved self sufficiency in food even though some work has been initiated for qualitative transformation in the out-look and attitude of farming community through green revolution. This is because the growth rate in the food production (cereals) has not yet matched the growth rate of the population. Table-3 gives the per capita production and growth rates of important crops. The table shows that the growth rate of the cereal production was tremendous from 1950-51 to 1960-61 and over-took population growth. This was due to the effort of bringing

more land under cultivation during the first plan and the second plan period and using intensive method of cultivation to increase the average yield. The growth of cereal production of 21.7 % from 1960-61 to 1970-71 was overwhelmed by the population growth during that period which is more than 25 %. If the fallow land which is about 6,22,672 hectares (1970-71) is not undertaken to make it cultivable with intensive effort for more production then a time may come when the per capita production will be so low that during bad crop years the death due to starvation will be tremendous and uncontrollable.

TABLE 3

PER CAPITA PRODUCTION AND GROWTH RATES OF PRODUCTION OF IMPORTANT CROPS

Crops	1950-51	1960-61		1970-71	
	Production (quintals)	Production (quintals)	Growth rate of production	Production (quintals)	Growth rate of production
Cereals	1.37	2.17	89.8	2.11	21.7
Pulses	0.14	0.13	4.6	0.21	112.5
Oil seeds	0.04	0.04	34.1	0.10	197.5
Population growth rate			19.81		25.06

There has always been a feeling that Orissa is a surplus State as far as rice is concerned. This has been examined for the good crop year 1970-71. Table 4 gives the production, import and export of cereals and pulses in Orissa during 1970-71.

TABLE 4

PRODUCTION, IMPORT AND EXPORT OF CEREALS AND PULSES IN ORISSA, 1970-71

Item	Production (000, M. Tonnes)	Export (000, M. tonnes)	Import (000, M. tonnes)	Surplus (000, M. tonnes)
Rice	4341	279.08	32.46	246.62
Wheat	18	12.12	123.18	—111.06
Other cereals	278	3.28	0.40	2.88
Pulses	467	36.74	64.39	— 27.65

The Table shows that Orissa is surplus in rice production. Is this actually true ? The per capita production of rice for the year 1970-71 is 1.98 quintals. Rice being the staple food an adult will require 2.57 quintals of rice per year for maintenance at a minimum level. This has been calculated assuming that 0.5 kg of rice is required per day for an audult. Taking the population of 1970-71 into account (2 children below 14 years = 1 adult), the rice requirement for the State comes to 4445414 metric ton. Thus, actually there is a deficit of 104414 metric tons and taking the quantity exported from the state the total deficit comes to 351034 metric tons in a good agricultural years like 1970-71. Some of this deficit is met by importing 111060 metric tons of wheat from outside of the State. This shows that from the production point of view, the state is a deficit State. The question naturally arises, why so much surplus then ? This is because the per capita income in Orissa being Rs. 467/- in 1970, a consumer is not in a position to purchase rice for his daily requirement and hence this excess.

Effect of Drought and Flood

To study the effect of drought during 1965-66, '66-67 and '71-72 on food grain production, let us consider the table of growth rate of rice produced (Table –5). The table shows that there is a greater instability associated with increase in the rate of growth over the last 15 years. Such a tendency is just opposite of what is usually observed in many developed nations. The reason obviously lies in the qualitative aspect of growth, namely increased production arising from an extension in area rather than an enhanced production per unit area.

In the drought year 1965-66, there was 12 % decrease in rice production amounting to 442.6 thousand metric tons in quantitative term. The next year was also a drought year, but the rice production decreased only 1 % (actually 5 % in kharif) because of vigorous effort by the government for rice production in rabi season. Similarly during the drought year in 1972-73, the Kharif production remained unaltered. But due to a good rabi rice crop the total production was increased by 6.81 % over 1960-61 (actually there was 8.25 % decrease over 1970-71 production). Similarly, in the flood year 1971-72, the rice production was decreased by 2.92 % (which was a decrease of 16.61 % over 1970-71).

TABLE 5

GROWTH RATE OF RICE PRODUCTION IN ORISSA

Year	Total rice base 1960-61	Production base 1970-71
1961-62	—2.00	—
1962-63	—1.07	—
1963-64	15.53	—
1964-65	18.53	—
1965-66	—11.87	—
1966-67	—1.00	—
1967-68	0.71	—
1968-69	12.95	—
1969-70	13.94	—
1970-71	16.41	—
1971-72	—2.92	- 16.61
1972-73	6.81	— 8.25
1973-74	18.11	1.45

Such a decrease in a bad orop year is quite alarming and this is because of extension of area under cultivation in a good crop year due to the provision of large irrigational facilities. Dr. S. R. Sen has cautioned in 1967 that, "on account of the pressure of population, the production of food grains has been extended to submarginal lands which are unsuitable for food production either because of poor quality of the soil or lack of moisture and which should never have been put under food grain. As a result, whenever there is a drought there is large decline in food grain production." This statement seems to be true as we have more of less reached the end of the tether as far as the area available for productive cultivation is concerned.

Present Production Position

Table 6 gives the percentage growth of production of rice, average yield per hectare and area under crop both in Kharif and rabi seasons with 1970-71 as base. Compared to 1970-71, the total rice produced in the State is reduced by

TABLE 6

GROWTH OF PRODUCTION, AVERAGE YIELD, AREA UNDER RICE CULTIVATION

Year	Kharif			Rabi			Kharif + Rabi		
	Production	Av. yield	Area	Production	Av. yield	Area	Production	Av. yield	Area
1971-72	-13.75	-16.67	3.41	-45.22	-40.99	-7.48	-16.61	-19.32	2.99
1972-73	-4.58	-3.34	-1.00	-47.88	-50.00	4.35	-8.25	-8.21	-0.79
1973-74	7.07	1.11	5.39	-50.17	-46.73	-6.69	1.45	-3.43	4.93

16.61 % in 1971-72 and 8.25 % in 1972-73 as most of the districts were affected by flood in 1971 and drought in 1972. But during these years the growth of cultivable land for rice was 2.99 % and -0.79% over 1970-71. During 1973-74, the production was enhanced only by 1.45 % though the cultivable land for rice was increased by 4.93 %. Though 1973-74 was a good crop year slight increase in production is not at all encouraging as the average yield per hectare was 3.43 % lower than that in 1970-71.

It is very discouraging to see that the Rabi production and the average yield per hectare are still decreasing in spite of the popularity of Dalua paddy crop. The average yield per hectare was 2.44 metric ton in 1970-71 as against 1.30 metric ton per hectare in 1973-74. Why such alarming decrease in production and yield rate ? This may be due to addition of substandard land for rice cultivation in Rabi season mainly to increase the total production of individuals. Other reasons, which might be attributed to short supply of chemical fertilizers and pesticides to meet the growing need of the farmer and (or) unsatisfactory cropping plan.

To examine these consider the table (Table 7) giving the quantity of chemical fertilizers used per hectare for the four years considered above. The table clearly shows that with the increase of the plant nutrient used per hectare, the yield rate is decreasing which is contrary to the common belief. This is perhaps due to lack of proper crop rotation and lack of proper crop management plans. Therefore, a time has come to get maximum benefit from the unit of plant nutrient used. The agricultural scientist should try to evolve suitable crop rotation plans according to soil

types instead of commonly used plan of paddy followed by paddy on all types of soil with irrigation facilities.

TABLE 7

USE OF CHEMICAL FERTILIZERS

Year	N (kg/hectare)	$P_2 O_5$ (kg/hectare)	$K_2 O$ (kg/hectare)
1970-71	4.57	1.24	0.47
1971-72	8.18	1.83	0.88
1972-73	9.19	2.26	1.33
1973-74	9.35	2.57	1.61

Irrigation Potential by the End of 1973-74

Lot of work has been done since independence to increase the area under irrigation. During the plan periods several major and medium irrigation projects are completed in Orissa. The districts of Balasore, Cuttack, Puri, Sambalpur and Bolangir are greatly benefited by the major irrigation projects like Hirakud, Mahanadi Delta and Salandi. The districts of Ganjam and some parts of Puri are mainly under medium irrigation projects. Besides several minor irrigation project like lift irrigation and others have sprung up. So far 28 % of the cropped areas are irrigated. Out of these 14 % are under stable irrigation (due to major and medium irrigation projects) and 13.5 % are under less stable irrigation (minor and lift irrigation) till 1973-74. The Table 8 and 9 give district-wise distribution of stable, less stable, unstable area in 1973-74.

From Table 8, it will be seen that large proportion of cultivated area under Kharlf are depending on rain. As such during a drought year these areas become completely unproductive in both the seasons. Therefore, some effort should be undertaken to bring these areas at least under protective irrigation. But due emphasis has not been given to irrigation and flood control in the fifth plan period. The proposed outlay for the irrigation projects is 13.61 % of the total expenditure during the fifth plan as against 17.4% in the fourth plan period.

TABLE 8

DISTRIBUTION OF AREA ACCORDING TO STABILITY IN KHARIF 1973-74

District	Stable Area (000, hectare)	Less stable (000, hectare)	Unstable area (000, hectare)	Total area (000, hectare)
Balasore	63.63(15.11)	29.93(7.11)	327.44(77.78)	421
Bolangir	46.13(21.97)	32.52(15.98)	131.35(62.55)	210
Cuttack	191.44(32.62)	88.60(15.09)	306.96(52.29)	587
Dhenkanal	6.47(1.98)	40.53(12.39)	280.00(85.63)	327
Ganjam	77.33(21.13)	176.93(48.34)	111.74(30.53)	366
Kalahandi	6.48(2.38)	42.95(15.97)	222.57(81.83)	272
Keonjhar	—	14.15(6.02)	220.85(93.91)	235
Koraput	2.02(0.49)	39.94(9.67)	371.04(89.84)	413
Mayurbhanj	3.08(1.09)	33.93(10.01)	301.39(88.90)	339
Phulbani	19.87(22.58)	12.28(13.95)	55.85(63.47)	88
Puri	112.32(15.39)	56.36(7.72)	561.32(76.89)	730
Sambalpur	117.76(20.41)	34.71(6.02)	424.53(73.57)	577
Sundargarh	1.21(0.46)	15.32(5.78)	248.47(93.76)	265
Orissa	648.34(14.19)	618.15(13.53)	3303.51(72.28)	4570

(Figures in parentheses indicate percentages)

Table 9 shows that out of the total irrigated areas (both stable and less stable) available in the State during 1973-74, Rabi rice was grown only on 42.6 % of the area. Remaining 57.4 % of the irrigated land remained unused during the year. To meet the deficit in our rice requirement due to frequent abnormal weather in Kharif this 57 % of the unused irrigated land can be brought under rice cultivation during the Rabi season. To get maximum utilisation of the irrigation water suitable cropping pattern should be developed for these areas and more emphasis should be given to high yielding short duration varieties.

At present we have (i) large areas with assured irrigation facilities, (ii) more fertilizers and plant protection measures, (iii) non-season based quick yielding varieties, (iv) better techniques for crop management and method of moisture conservation, (v) agricultural credit through the nationalised Banks and lastly (vi) wide spread

TABLE 9

DISTRIBUTION OF AREA ACCORDING TO STABILITY IN RABI 1973-74

Districts	Stable Area (000, hectare)	Less stable area (000, hectare)	Total irrigated area (000, hectare)	Total cropped area Rabi Rice (000, hectare)	Additional irrigated area available (000, hectare)
Balasore	20.75	4.20	24.95	8.07 (32.34)	16.88 (67.66)
Bolangir	22.46	3.03	25.49	16.13 (63.28)	9.36 (37.72)
Cuttack	122.15	15.15	137.30	40.98 (29.85)	96.32 (70.15)
Dhenkanal	3.24	5.60	8.84	2.23 (25.23)	6.61 (74.77)
Ganjam	5.89	11.14	17,03	3.77 (22.14)	13.26 (77.86)
Kalahandi	0.81	4.42	5.23	0.50 (9.56)	4.73 (90.44)
Keonjhar	—	0.45	0.45	0.55 (122 22)	—0.10 (—22.22)
Koraput	1.29	8.11	9.40	3.32 (35.32)	6.08 (64.68)
Mayurbhanj	0.16	1.04	1.20	1.60 (133.33)	—0.40 (—33.33)
Phulbani	2.02	0.77	2.79	0.78 (27.96)	2.01 (72.04)
Puri	72.95	4.04	76.99	11.06 (14.36)	65.93 (85.63)
Sambalpur	67.38	2.81	70.19	73.93 (105.33)	—3.74 (— 5.33)
Sundargarh	0.40	3 56	3.96	0.60 (15.15)	3.36 (84.85)
Orissa	319.50	64.31	283.83	163.51 (42.60)	220.30 (57.40)

(Figures in parentheses indicate percentages)

communication media through various extension agencies, radio, television and demonstration in the cultivators' fields. These facilities must be fully utilised in a good year to produce more to store for the future. With the land reform and acquisition of holding right by a large number of small farmers our technology for small scale farming, cropping pattern for small farms, provision for input and services required by small farmers, creation of requisite credit and market facilities should be developed on an adequate scale to make it possible to have a mid season corrective programme in a year of weather uncertainty.

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