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CHAPTER VII

AGRICULTURE

In Koraput the soil is tilled at elevations ranging from 200 to 4,000 feet above sea level and, as would be expected, conditions and methods of cultivation vary widely at different altitudes. But in general agricultural practice is primitive and far more backward than in the plains of the adjacent districts of Vizagapatam and Ganjam. There is very little artificial irrigation, manure is little used, implements are of a crude type and the livestock is extremely poor. On the other hand the rainfall is generally plentiful. In the Rayaghada subdivision the best cultivation is found in the Vamsadhara valley above Gunupur, and in the Nagavali valley near Kalyana Singapur, both of which are good rice-growing areas. On higher lands in the Rayaghada and Bissamkatak taluks good tobacco is grown. In the Jeypore and Nowrangpur taluks plenty of rice is grown and the valley of the Indravati, which separates these two taluks, is the principal granary of the district. The land on the 3,000-foot plateau is undulating and unsuitable for wet cultivation. Rice is there only grown in terraced stream beds, and dry crops such as *mandya* and *olisa* (niger seed) are cultivated on the higher ground. In the Malkanagiri taluk cultivation is only carried on in the sketchiest manner, the most typical forms being the *podu* cultivation of the wild tribes in the hills in the east of the taluk and the rather casual growing of rice in swampy clearings in the forest in the plain lands.

GENERAL
CONDITIONS

Artificial methods of irrigation are for the most part non-existent in the district. The only regular irrigation works are two masonry dams which have been built by the Jeypore estate within the last half-dozen years, one on the Sokota *nala* in the Bissamkatak taluk and the other on the Champikota *gedda* in the Rayaghada taluk. The former irrigates 280 acres and the latter about 1,000 acres. Both dams afford a supply of water during the hot weather, making it possible to grow a second rice crop and to give sugarcane the watering which it requires during the dry season. On the Koraput plateau rice is grown in the stream beds, which the raiyats terrace out, cutting the banks further back every year. Some of these stretches of rice cultivation, which are known as *jhollas*, are as much as two miles in length and only 80 to 100 yards in width.

IRRIGATION

Tanks are not numerous. Large embankments holding up wide sheets of water known as *sagars* exist at Jeypore, Malkanagiri and a few other places. These tanks, which owe their existence to the enterprise of former rulers of the country, are intended primarily for drinking purposes, but they are also sometimes tapped for irrigation. Smaller four-sided tanks,

excavated in low-lying land, are known as *mundas* or *bandhs*. Most of these have been built by charitable persons to commemorate their piety, and they are intended only for drinking or bathing.

According to the agricultural returns an area of 12,475 acres is irrigated by private canals, 11,405 acres by tanks and 950 acres by wells.

PRINCIPAL
CROPS

The following table gives the normal acreage of the principal crops grown in the district. The figures are only rough estimates, compiled by Taluk Officers from their own observation. There is, of course, no survey and no cultivation accounts are kept by the officials of the Jeypore estate.

Crop		Normal acreage
Foodgrains	Rice	757,000
	Wheat	2,000
	Milleta	53,000
	Ragi or mandya	192,000
	Others including pulses..	120,000
	Total ..	1,124,000
Oil-seeds	Sesamum or gingelly	15,800
	Rape and mustard	8,000
	Castor	11,500
	Groundnuts	2,000
	Others (chiefly niger)	80,000
	Total ..	117,300
Other crops	Sugarcane	11,000
	Cotton	2,000
	Tobacco	23,000
	Fodder crops	10,000
	Fruit and vegetables	17,000
	Miscellaneous crops	85,000
Total ..	148,000	

Total area cropped—About 1,400,000 acres

Rice

Samples of three hundred varieties of paddy have been collected from the five taluks of the Koraput subdivision for classification at the Rice Research Station in Jeypore. Of the early varieties, which are grown chiefly in the hills, the commonest are those known as *dongar dhan*, *mate dhan*, *bata dhan* and *belu dhan*. *Karandi*, *ratan-chudi*, *baldighati*, *lodhiyare*, *bhatagunda* and *kanakchudi* are the favourite medium varieties, while *gadakhunta*, *bayahunda*, *moncha* and *konai* are the chief late strains, which are sown in the low-lying lands and valleys.

Rice fields as a rule receive no manure. Transplantation takes place in less than ten per cent of rice lands and elsewhere the seed is sown broadcast. In either case the seed rate is high, as much as 50 or 60 lb. of seed being used to the acre. The standard yield per acre is 835 lb.

There are three systems of rice cultivation: (i) the dry system, on high-lying or *dongara* lands, (ii) the partially wet system, on medium lands, and (iii) the wet system, on low lands. Under the dry system the lands are ploughed five or six times when the summer showers set in and are brought to a fine tilth. The seed is broadcast after the break of the south-west monsoon. They are covered up by ploughing or by a levelling board or a brush harrow. The crop is grown either pure or as a mixture crop. It ripens and is harvested earlier than the other rice crops. The partially wet system is adopted where rainfall and irrigation facilities are not sufficient to permit of cultivation by the wet system. The land is tilled and puddled after the first showers and water is allowed to stand in it for some time. Then seeds which have been previously moistened are broadcast and after a few hours the water is let out of the field. The young plants are able to survive dry conditions for some weeks until satisfactory rains fall and the fields are swamped.

The wet system is adopted on low-lying lands in those parts of the district where the rainfall is abundant. Lands are never ploughed in the dry state. But when the monsoon begins the fields are ploughed, flooded and again ploughed and puddled. Before sowing, the water is let out of the fields. The seeds are soaked in warm water for a day and sown broadcast the next day. When transplantation is the practice the seeds are first sown in a nursery which has received a basal dressing of cattle manure. After thirty or forty days they are pulled up and planted out in the fields in bunches about six inches apart. Once sowing or transplantation has taken place the wet fields usually receive no attention, except for regulation of the supply of water, until the harvest. The crop is not weeded. Under this system later strains of paddy are cultivated, the period of growth being about six months, as against three months under the dry system.

On the *dongara* lands harvesting begins in September, while on the low-lying fields it begins about the middle of November and is completed by the middle of December.

Ploughing for dry crops is begun during the summer showers which usually fall in April and May. If these fail, ploughing has to be deferred till the onset of the south-west monsoon and the raiyats consider that a full crop cannot be expected. When the monsoon rains start, sowings of *sama* (*panicum miliare*), *cholam* or *johar* (*sorghum vulgare*) and *ragi* or *mandya* (*eleusine coracana*) take place. In August or early September, when the first violence of the monsoon is spent, the raiyats sow the oil-seed niger or *guizotia abyssinica*, which with

Dry crops

its yellow flowers becomes such a conspicuous feature of the Koraput plateau in November. This is sown either as a pure crop or as a hedging round *mandya* and *sama* or sometimes as a mixture with the two latter crops. Other oil-seeds such as gingelly and castor are grown on a smaller scale.

Pulses, of which the commonest are redgram (*cajanus indicus*) and horsegram (*dolichos biflorus*) are sown in September and October, when the monsoon has nearly finished.

Turmeric

Turmeric is cultivated by the Kondhs of the Narayana-patnam Agency and the area round Lakshmi-pur in the Koraput taluk. It is a two years crop. Pieces of sprouting rhizomes are planted in the month of May and covered with straw or with salor siali leaves. The plants grown up and wither in the following January or February, but are allowed to remain in the soil. They again sprout and wither the following year, after which the crop is ready and the rhizomes are due up in the spring.

Other dry crops worth mentioning are wheat, grown in small quantities near Kotapad and in the Pottangi taluk, and mustard or *soresa*, which is grown on rich soils as a cold weather crop.

Garden crops

After the close of the monsoon the excellent garden cultivation in villages inhabited by people of the Mali caste becomes a feature of the landscape. These people grow onions, chillies, sweet potatoes, brinjals, beans and other vegetables, including European varieties, with great skill and industry. But this type of cultivation is rarely practised by the hill tribes or Hindus of other castes.

Tobacco

Tobacco is an important crop, especially in the Rayaghada subdivision, where it is largely grown for export to the neighbouring States. The local tobacco is of good quality and is highly esteemed as far afield as Raipur. Before sowing, the fields are heavily manured by penning cattle or sheep within them and are then ploughed about half a dozen times and brought to a fine tilth. Seeds are sown in a nursery in October and November and the young seedlings are protected against the sun till they are a fortnight old. After about a month they are transplanted to the main field, which has meanwhile been thoroughly tilled and weeded. After transplantation the crop is weeded and hoed twice or thrice before the harvest, which takes place in March and April. The majority of raiyats cure the leaves before selling them. This is done by hanging them for twenty to twenty-five days and then heaping them in layers in a dark room or a pit in the ground for about a fortnight, after which they are ready for sale.

Sugarcane

Sugarcane has been grown on a small scale for many years, but recently its cultivation has been extended in the Rayaghada subdivision since the opening of a power-driven mill at Rayaghada. Improved varieties have only been introduced recently in a few villages near Rayaghada and Bissamkatak. In the Jeypore and Nowrangpur taluks the crop is planted in March and harvested in the following January. In the Rayaghada subdivision, where the rainfall is less plentiful, planting takes place in June and July and is harvested in January and February. The ratoon is allowed to grow for a year. The ryots mill their canes only after November or December as the canes are not ripe before that time.

When the cane is not sent to the Rayaghada factory for milling it is pressed in the villages in locally made mills, which are usually of wood. Cane-crushing is a nocturnal operation and the creak of the mills is a familiar sound during the winter nights.

Special mention must be made of the type of cultivation which is locally known by the name *podu*. This is the shifting cultivation that is carried on by jungle tribes all over India. From February onwards the hillmen begin to fell patches of jungle on the hillsides and set the felled timber alight as soon as it is dry. The land is thus cleared for cultivation and the ashes remain to fertilize the soil. As soon as the summer showers set in, the land is made ready for cultivation by simply stirring the soil with hand hoes. Seeds of dry crops such as *johar*, *mandya* and *olisa* are scattered at the top of the cleared space and are washed down the hill slopes by the monsoon rains. Thanks to the fertilizing effect of wood ash the yield of crops sown on felled hill slopes is frequently very good. The practice of *podu* cultivation varies in detail in accordance with the nature and extent of the forest land available, but it is an invariable rule that land thus cleared is abandoned after two or at most three successive years of cultivation, by which time the virtue of the soil has been exhausted. Where possible, a hillman will always choose to clear a hill slope for this sort of cultivation rather than a portion of plain land. A further account of *podu* cultivation and the attempts that have been made to keep it under control will be found on page 104 in the chapter on 'Forests'.

Agricultural implements are of a crude kind. The plough is usually made in four parts—the body, the hilt and the shaft, which are of wood, and the share, which is of iron. Other implements in common use are the levelling board, the soil scraper, the harrow or *danti*, with five, seven or nine tines and the common sickle. For hillside cultivation ploughs are not used, but the soil is prepared for sowing by hand mattocks (*kodikis*) and forks. The kinds of wood most favoured for making agricultural implements are *sahaj* (*aerminalia tomentos*), *dhamana* (*grewia tili aefolia*) and *tangani* (*xylia dolabriformis*).

It is only within the last year or two that the Department of Agriculture has broken ground in the Koraput district. It is as yet early to assess the value of the beginnings made or to forecast the direction in which its future efforts will be turned. A rice research station, financed by the Imperial Council of Agricultural Research, with the aid of a contribution from the Maharaja of Jeypore, was started at Jeypore in 1937. A farm for demonstration and research, especially in fruit culture, has been opened by the Orissa Government at Pottangi. Mention may also be made of the coffee plantations maintained by the Maharaja at Nandapur and at Mohulbhatta, five miles from Jeypore, which have had some success and may lead to an extension of coffee cultivation in the district.

The agricultural season begins with the summer showers and thunder-storms of April and May. As can be seen from the

figures on page 20 most parts of the district received an average of between 4 and 5 inches of rain in these two months. It is seldom that the raiyat is altogether disappointed in his expectations of rain in this season. With the onset of the monsoon in the middle of June the main period of activity begins and continues till the middle of December, by which time the paddy, the staple dry cereals and the chief industrial crops, namely the oil-seeds, niger and gingelly, are off the ground. The four months, December to March, are as a rule practically rainless and there is little agricultural activity during this period. This is the time for cultivation of vegetables, tobacco, pulses and wheat. By the middle of March practically every crop has been harvested. Nature enforces on the raiyat a whole month's holiday during the month of Chaitra until the showers of Baishakh call him back to his plough. Tradition rules that this month should be a time of feasting, hunting and love-making and the manner of its celebration has been described on page 88.

NATURAL
CALAMITIES

Koraput is within the region of cyclonic disturbances in the Bay of Bengal and is fairly frequently visited by heavy falls of rain giving rise to floods in one or more of its five principal rivers. The Vamsadhara is the most frequent offender in this respect. This river often overflows its banks in the valley above Gunupur. The Indravati also is liable to spread itself into a vast lake in the flat plain to the north of Kotapad. The Kolab and the Machkund, with their steeper run-off, are capable of a fury that is wilder but of shorter duration. In October 1931, when 21 inches of rain fell in a day at Pottangi, both these rivers rose to unprecedented heights. Measurements at the Bagara waterfalls showed that the discharge of the Kolab near the site for the proposed hydro-electric dam reached the figure of 800,000 cubic feet per second. The Machkund rose 40 feet above its summer level at Kondakamberu and swept away the travellers' bungalow, which had been built on a height presumed to be safe from all floods. Villagers living on the banks of these rivers can tell of similar excesses in the past, of which the worst was in 1914. Nevertheless the damage to crops and to life resulting from these floods has always been small, because the two rivers flow through sparsely-populated country, where there is little cultivation. The floods in the Indravati and Vamsadhara have rarely caused any serious distress among the cultivators in their basins.

Since the district was taken under administration by the British no famine has ever occurred. In the year 1919 there was danger of scarcity when famine conditions prevailed in the plains of Vizagapatam and only a light crop was raised in the Agency. The hill raiyats were tempted by the high prices in the plains to dispose of their own produce, without realizing that this was likely to result in a shortage at home. When the danger was realized export of rice to the plains was prohibited and the Maharaja of Jeypore helped to tide over the critical period by releasing for sale large accumulations of paddy in his granaries.

At the last cattle census the numbers of domestic animals CATTLE enumerated in the district were as follows:—

Bulls	...	...	...	10,016
Bullocks	...	...	...	138,076
Cows and calves	...	...	...	244,323
Buffaloes	...	...	...	96,816
Goats	...	...	...	62,946
Sheep	...	...	...	39,500

There is little to be said about these, as they are almost all of the poorest quality, no attempt being made to breed scientifically or to give the animals nourishing food. The local cattle are inferior both for draught and milch purposes to those of the neighbouring plains of Vizagapatam district. The great majority of the carts which pass up and down the Salur-Jeypore Road in such numbers are drawn by bullocks bred in the plains.

A veterinary dispensary was opened at Jeypore in 1929. In 1937 the average number of animals treated there each day was 39. There is one touring veterinary surgeon for each of the subdivisions. Rinderpest is the commonest disease. This makes its appearance almost every year.

