CHAPTER V
AGRICULTURE

GENERAL CONDITIONS

AGRICULTURAL conditions differ greatly in the east and west of the district. To the east the thanas of Indas and Kotalpur, and the north of the Sonamukhi thana, are a continuation of the wide-spread alluvial flats of the Burdwan and Hooghly districts, and are composed of rich recent alluvium. The rest of the district is, for the most part, undulating or hilly, and the soil is mainly an infertile laterite, found in a succession of rolling with uplands intervening hollows, along which the drainage runs off to join the larger streams. Large tracts are still covered with hill, rock or jungle, or consist of arid upland ridges; and the lower slopes of these uplands and the depressions between them are practically the only lands on which a wet rice crop is grown.

The crops, as a rule, depend almost entirely on the monsoon rains, and though the quantity of rainfall is generally sufficient, crops are liable to fail more or less when it is unseasonable or badly distributed, the greatest damage being caused by a failure of the rains in September and October, when a good supply of water is needed to mature the ripening rice crop. An ample and well-distributed rainfall is especially necessary, because the country is undulating and the soil porous, thus helping rapid drainage and percolation, and because there are but few large works for the storage of rain water.

RAINFALL

The distribution of rainfall most favourable to the aman or winter rice, which is the staple crop, is when premonitory showers fall in May or early in June. The rain in the latter half of June and in July should be heavy, and then should come an interval of comparatively fine weather, so as to permit of weeding operations being successfully carried on. The September rains should also be heavy, shading off into fine weather with showers in October. On the sufficiency of the rainfall in September more than in any other month, depends the character of the outturn of this crop. For the aus or bhadoi rice, showers in March and the ante monsoon showers of April are very necessary for the preparation of the land. From April onwards rain is required at frequent intervals, but should not be copious or continuous. Autumn rice is generally sown in May or earlier, and consequently heavy rain at this time and in the month following is injurious to the sowing and successful germination of that crop. Scattered showers with intervals of sunshine, on the other hand, are very beneficial. The climatic conditions most suitable to the cultivation of the rabi or cold weather crops are when the monsoon rains cease early in October, after thoroughly moistening the ground, and are followed by a few showers during the remainder of that month and the first half of November. A little rain in December and also in January is requisite to enable the crops to attain their full growth.

IRRIGATION

Artificial irrigation is necessary in all parts of the district except in the east. The natural configuration of the country, which-has an undulating surface intersected by numerous rivers and streams, renders the reservation of water easy enough by simply throwing embankments across the drainage lines or across small nullahs. These embankments, which are called bandhs, are made at levels higher than the fields to be irrigated, and their main use is to prevent the monsoon rain draining away rapidly and to supply water to the crops in the lands below by slow percolation. There is ample room for the extension of this system. Irrigation from wells is also carried on in the upland area to a small extent, and from tanks in the alluvial flats to the east. Canal irrigation is entirely unknown, and would be impossible except perhaps in thanas Indas and Kotalpur and in the north of the Sonamukhi thana; elsewhere, the surface is broken up by low ridges, valleys and hills, which make any system of canal irrigation impracticable.

About a century ago the Bishnupur Raj made a simple but effective system of irrigation channels, called the Subhankari daura or khal, in the northern portion of the Sonamukhi thana to counteract the natural liability of that area to drought. The system consisted of several main and branch

channels, fed by the monsoon, which irrigated about 80 square miles; but unfortunately many of the channels have long since silted up. In the famine of 1897 the daura was partially re-excavated, and the channel deepened, by taking earth from it for making road embankments. Several important tanks and bandhs were also constructed in the Gangajalghati thana, viz., a dam was built across the Jeolajor at the ninth mile of the Gangajalghati-Saltora road; the Kusthal bandh, Charuri tank, and Vaishnava bandh were excavated at Saltora; and much was done to improve the sacred Siva Ganga tank at the foot of the Biharinath hill, and also the Krishnapur and Uddhabpur bandhs. Other minor sources of irrigation are the Jamuna and Krishna bandhs, two artificial lakes at Bishnupur, which supply water to a fairly large area in the vicinity of the town.

The most important schemes proposed for the improvement of irrigation are the re-excavation of the Subhankari khal, the erection of a dam across the Harinmari khal in the Bishnupur subdivision, the re-excavation of the Mathgoda bandh, the repair of the Syamsundarpur bandh, and the construction of a weir across the Birai river. The re-excavation of the Subhankari khal has been condemned from an engineering point of view. The re-excavation of the Mathgoda bandh has been taken up, under the supervision of the District Engineer, from a fund raised by private subscriptions aided by a District Board grant. The Syamsundarpur bandh formerly belonged to an indigo concern, but is now owned by a zamindar in embarrassed circumstances. It is estimated that the repair of the bandh would cost about Rs. 3,000, and that, if repaired, it would irrigate a considerable area.

Special attention has lately been drawn to the Birai river scheme. This scheme provides for the irrigation of about 20 square miles from a weir constructed across the Birai about 7 miles above its confluence with the Dhalkisor. In the year 1901, the late Mr. Maconchy, Superintending Engineer, made a preliminary enquiry to ascertain if a canal from the Birai river could be recommended as a protective work. He found that the catchment area was about 70 square miles, and the conclusions he came to, which were accepted by Government, were that (1) the catchment of the stream is so small that in a season of drought the supply of water would either fail altogether or would be so small as to be of very little use; and (2) that there was no prospect whatever of the canal being remunerative to Government. The scheme was therefore regarded as impracticable. It was estimated that a detailed survey would cost Rs. 4,600.

Recently efforts have been made locally to have this project taken up, and the following reply has been given (in March 1908) in the Legislative Council to a question on the subject: "There is no justification for an expenditure of this amount from the general revenues on work which would be of no practical use. It will, however, be arranged to have observations made of the flow of water in the stream to ascertain definitely what area could be irrigated at a time of drought. On the present information it would appear that a channel made by the land-owners themselves, similar to the pains of which there are so many in the Gaya district, would be more suitable than a Government canal."

SOILS

The soil in the Indas and Kotalpur thanas and in the north of the Sonamukhi thana is composed of recent alluvium, and is loamy and clayey. Elsewhere, it consists, for the most part, of sandy loam or a lateritic gravel. Generally speaking, the soil of the high lands (danga) is poor, but some varieties of early rice, as well as maize and rabi crops, are grown there. The soil of the low lands and valleys is generally fertile, as it is enriched by the detritus washed down from the higher levels. It is commonly divided into two classes—(I) sali, which is restricted to the cultivation of rice, and (2) suna, in which various kinds of crops are grown, such as sugarcane, oil-seeds, superior varieties of rice, and in the richest soils, tobacco, pan and vegetables. There is this further distinction that sali lands are allowed to lie fallow every third or fourth year, while the suna soil is never permitted to remain uncultivated.

The cultivators themselves recognize a number of minor distinctions according to the composition and quality of the land. The different classes of land thus recognized are as follows. Sali land is divided into seven classes, viz., sali jol, or low marshy rice land; sSli kanali or low rice land bordering on river banks or marshes, or lying between high lands; sali math or large flat plains growing aman or winter rice; sali

karpa, or low marshy lands also growing aman rice; Sali matial, or marshy land with a black soil, used for winter rice; and sali garanji, or sloping rice land.

Suna land again is divided into four varieties, viz., nij suna, or land growing aus or autumn rice, with a second or winter crop of pulses or oil-seeds; suna karpa, or suna lands of the first quality growing the finer qualities of rice, sugarcane, cotton, peas, mustard, etc.; suna ikshu, or suna land particularly suited for sugarcane cultivation, but also growing rice of good quality, cotton, pulses, etc.; suna do karpa, or land growing two superior crops in the year.

There are five classes of danga or high land, viz., je danga or high dry land growing pulses, hemp and oil-seeds; til danga or high dry land producing til; kalai danga, or high dry land on which the pulse called biri kalai is grown; sarisha danga, or high dry land producing sarisha or mustard; and masuri danga, or high dry land producing masuri kalai, another kind of pulse.

Other varieties are je karpa, or cotton land; bastu, or land upon which the homestead is built; udbastu, or land surrounding the homestead; bansbera, or bamboo land; pan-baraj, or betel enclosures; and bagat, or orchard land, on which fruit trees, such as mango, guava, jack, etc., arc grown.

PRINCIPAL CROPS

The following table shows the normal acreage of the crops of the district and their percentage on the normal net cropped area.

Name of crop.	Normal acreage.	Percentage on normal net cropped area.	Name of crop.	Normal acreage.	Percentage on normal net cropped area.
Winter rice	... 507.000	84	Summer rice	809	...
Sugarcane	... 15.000	3	Wheat	... 5,550	1
			Barley	3.300	1
Total agriani crops	522.000	87	Grain	... 6,500	1
			Other rabi ce-		
Autumn rice	... 21,900	4	reals and pulses	9.000	2
Jowar	800		Other rabi food crops	3.500	1
Bajra	... 1.100				
Marua	... 1500	1	Linseed	1.000	...
Indian corn	8.400	1	Rape and mustard	7.400	1
Other bhadoi cereals			Til (rabi)	2.7000	...
and pulses	2.000		Other oil-seeds	8.000	1
			Tobacco	1 .500	
Til (bhadoi)	3,300	1	Late cotton	2,000	
Other bhadoi non-			Other rabi non-		
food crops	1.200		food crops	1.000	2
Total bhadoi crops	42.200	7	Total rabi crops	63,200	10
Twice cropped area	30.000	5	Orchards and gar-		
Forest	... 88.000	15	den produce	8,000	1

The above statistics will show that the staple crop of the district is rice, of which there are two main classes, viz., aman or winter rice, and aus or autumn rice. Aman rice, which predominates to the exclusion of other crops, is sown in April or May, transplanted in July or August, and reaped about December. No less than 21 principal varieties are grown. The aus or autumn rice is sown broadcast on the fields in May, and reaped in September; it is of two varieties, viz, aus proper and kelash.

For an aman rice crop the soil requires to be ploughed four times before the sowing of the seed. The first ploughing takes place early in February or March, and the three following ones between that time and August, according as the season is wet or dry. The process of sowing, weeding and reaping is the same here as in other parts of Bengal. A small ridge or embankment is raised round each plot or field after the ground is considered sufficiently ploughed; the cultivator then lets in water from the tank, reservoir, or dammed-up water-course from which he obtains his water-supply. This water is allowed to stand some time, to assist in decomposing the stubble or roots of the previous year, and to incorporate them, and the

manure they form, more closely with the soil. The ground then receives its final ploughing, after which it is harrowed and levelled, and the seed is sown. About two months after the sowing, the young plants are transplanted into other plots, at regular intervals apart. While the plant is still young, the earth is gently loosened round the roots by hand, or sometimes more roughly by the plough. The crop is kept carefully weeded; and when nearly ripe, a bamboo is laid horizontally on the ground and drawn over the plants, thus laying them down regularly in one direction. The crop is reaped in December and January, and bound up in small bundles. It is subsequently either beaten out on a board by men or trodden out by cattle. Such of the stubble as may not be required for other purposes is left on the ground to rot and renovate the land.

SUGARCANE

The only other important aghani crop is sugarcane, which is sown in April or May and cut in the following February or March. The fields are ploughed and manured in either of the first two months, and when the ground is sufficiently prepared, the cane cuttings are dibbled in. They are kept well irrigated during the dry months, the ground being weeded as occasion requires, and the canes are ready for cutting in the following February or March.

BHADOI CROPS

The normal area of bhadoi crops is 42,200 acres or 7 per cent of the net cropped area, and of this area no less than 21,900 acres or 4 per cent are occupied by aus or autumn rice. Of other crops, the most importants are maize, marua (Eleusine Coracana) and til or gingelly.

RABI CROPS

Rabi crops account for 63,200 acres or 10 per cent of the normal net cropped area. Among these wheat, rape, mustard and other oil-seeds are most important. Other miscellaneous crops include arhar, peas and gram, all of which are grown on dry soil.

OTHER CROPS

Another important crop is pan, which is sown in the month of June or July, the leaves being picked at all seasons of the year after the plant is 12 months old. Indigo was formerly grown on a large scale, but the cultivation has now disappeared entirety. Even when it was grown, it was found that the soil was not well adapted for it, the produce being less and the plant of a smaller size than that grown in other districts.

EXTENSION OF CULTIVATION

Statistics showing how great the extension of cultivation has been are not available, but it is known that the cultivation of rice has increased considerably within the last half century by the reclamation of extensive jungle tracts. This process is still going on, especially round the villages of the Santals, who are the natural enemies of jungle. It is the custom to sow the newly cultivated lands for two or three years after reclamation with inferior crops, as they are not at first capable of producing the superior sorts. By this means the lands gradually increase in fertility, and become fit for better kinds of grain.

IMPROVEMENT OF METHODS

Until recent years but little was done to improve the quality of the crops grown, to introduce new crops, or to substitute superior cereals for inferior kinds. The advantages of rotation, however, are understood, and crops are commonly rotated on all lands growing sugarcane and other exhaustive crops. A common method of rotation is as follows. After cutting a crop of sugarcane in February or March, the plough is passed through the field, and a crop of til seed is sown, which is cut and garnered in May or June. The soil is then well ploughed, and in June or July is sown with aus or autumn rice, which is reaped in September or October. After the rice crop is off the ground, the field is again ploughed twice, and a crop of mustard (often mixed with peas) is sown. These crops ripen and are cut in January or February, when the field is again well manured and ploughed, so as to be ready for another crop of sugarcane, which is planted about April. In some parts cotton alternates with sugarcane after the

mustard is cleared off the ground. Practically the only manure used is the black mud scraped from the bottom of tanks, which with ashes and stubble is used for the rice fields, but cow-dung is sometimes added for suna lands growing more valuable crops.

AGRICULTURAL ASSOCIATION

It is hoped that an improvement in the quality of the crops and the methods of cultivation will follow the establishment of the Bankura District Agricultural Association. This Association was started in September 1905, as a branch of the Burdwan Divisional Agricultural Association, and the number of members has now risen to sixteen. It has shown considerable activity since its establishment. A seed supply branch has been opened, and a large quantity of selected seeds, manures and improved implements have been distributed to members and agriculturists in the district, in some cases free, and in other cases at cost price. The Association has also published and distributed leaflets in Bengali dealing with improved methods of cultivation, and has succeeded in introducing the cultivation of long stapled cotton, of special crops like groundnut, and of valuable crops like potatoes, and also the system of green manuring, which hitherto was practically unknown in the district. Some of the members have also undertaken demonstration work as a means of diffusing agricultural knowledge among the cultivators of their neighbourhood, and others have availed themselves of the provisions of the Land Improvement Loans Act to improve the means of irrigation in their estates. The Association has held an agricultural and industrial exhibition each year since its establishment, in order to stimulate the agriculture and industries of the district, and has also constructed at Bankura a building containing a meeting room, a seed store, and a library, in which agricultural books and papers are kept for the use of the public.

CATTLE

The breeds of cattle, ponies, sheep and goats in this district are described as being of the poorest kind, the animals being generally weak, stunted and small. There is ample pasturage in the west of the district, where there are large areas under jungle, but not in the east, and especially in thanas Indas and Kotalpur. In the latter tract the extension of cultivation of late years has converted the pasture grounds lying on the outskirts of the villages into paddy fields, and consequently there is considerable difficulty in feeding the cattle, when the crops are on the fields.