V : AGRICULTURAL PRODUCTION IN BIHAR

Section 1: THE CONDITIONS OF GROWTH OF POPULATION AND CULTIVATED AREA FIGURES

"The regions immediately governed by the Presidency of Fort William, comprehend the whole subas of Bengal and Bihar are part of the adjoining subas of Ilahabad, Orissa and Berar, and some tracts of country which had maintained their independence even in the most flourishing period of the Moghul Empire. But these are inferior both in extent and value to the province of Bengal." ¹

This was the opinion of H.T. Colebrook, one of the keenest British revenue administrators to work in Bihar which was a part of the Bengal Suba in this period. He found the climate and physical situation of the larger part of the area to be ideally suited for a particularly luxuriant kind of cultivation. Rice which grew well in the areas which were inundated grew particularly well in all the southern districts. In the higher lands it was replaced by wheat and barley. Mulberry was cultivated in distinct areas while sugar and indigo were to be found more commonly.

In peasant parlance, the seasons prevalent over the year in Bengal could be subdivided into six, each containing two months. The spring and dry seasons occupied four

months, during which the heat progressively increased until it became almost intolerable. In Bihar a parching wind from the west prevailed during a large part of the hot season.

This was succeeded by the rainy season which commenced nearly at the same time throughout the whole province. During the first two months, according to the usual course of seasons, the rain was heavy and continual. The total rainfall in a day at this time could be up to five inches. The rivers which were swollen by now, overflowed and entire areas were flooded, which floods occasionally turned into a calamity.

This was followed by the cold season when the inundation gradually drained away or evaporated.

The general soil of Bengal was clay with a considerable proportion of silicious sand, fertilised by various salts and decayed substances. In the first flat country sand formed everywhere the basis of this stratum of productive earth. This was due to the fact of frequent flooding which covered the sand with productive soil and clay.

"If the variable proportions of clay and sand, and the circumstances of frequent alternations in the channels
of rivers be considered great inequality of soil may be expected."

Soil and climatic conditions determined the degree of fertility of the soil and its productivity. Variations in this were to be found all over the different districts. In Shahabad district, most of the low-land area was fit for cultivation with the river Ganga depositing a fine rich mould which made it highly productive. This soil stretched towards the area of the river Son parts of which were lightly covered with sand. This sandy soil constituted the greater part of the country, except near the mouth of the river where the soil was richer. This sandy soil could be divided into two kinds. One was quite free, consisting of fine sand mixed with a loose mould and was known as Bala, Ush, Ushar and Reher. The other was made up of a very tenacious clay intermixed with a great deal of coarse sand. Both soils when kept moist were highly productive but irrigation was absolutely essential in these parts. The clay lands in this area were regarded as the most productive, growing wheat, barley, and all the winter crops without irrigation.

In Patna district, more or less similar soil and climactic conditions prevailed. The soil was chiefly alluvial, and the areas along the banks of the Ganga was 

2. *op. cit.*
extremely fertile producing "the finest crops of all descriptions". The general line of drainage was from west to east, and this made retention of moisture in the soil for the dry months difficult, and necessitated the resort to a particular kind of irrigation system, dependent on storage lakes and long canals serving several villages.

Bhagalpur district formed a continuation of the great alluvial plain of Tirhut. It was abundantly supplied with river communications, and a large part was flooded every year, and was usually well irrigated. The north eastern pergunnahs formed, one of the most fertile portions of the sub-Tarai rice tract and supported the great grain mart at Nathpur.

In Purnea, the soil was not so productive as those of the last mentioned districts. The clay soil known as Kabal or matiyal formed only a small proportion of the cultivable area, and in the greater parts, the mixed soil called chorasiya prevailed. The area was dominated by the rivers Ganga, Kcsi, Mahananda, and a host of others and the course of these rivers influenced the economy and society of the district crucially. The inundated land occupied about 45 per cent of the whole

3. Hunter, op. cit. p.18
4. This has been discussed in detail in a later chapter.
and where the soil was good, was productive. In the interior and in the northern parts, the lowest lands were the richest, and winter rice could be grown, and a good crop raised without much effort. On those lands which were occasionally flooded a greater variety of crops were reared, including transplanted fine rice.

A somewhat reliable estimate of the population of Bengal could only be arrived at with the first census of 1872. But prior to that estimates of population were reached by various individuals using a number of methods to arrive at their conclusions. The relative validity of these estimates vary but a general idea can be derived there from the situation under early British Rule, fluctuations in the population, level of output etc.

"The inhabitants of Bengal are certainly numerous in proportion to the village and manufacturers which employ their industry". This was the impression of Colebrook and it appears to be a rather exaggerated one.

According to him, earlier calculation had placed the total population of the province at eleven million.

5. Buchanan, op. cit.
6. op. cit.
An enquiry was conducted in 1789 by calling upon the Collectors of districts for their opinions on the population of their respective jurisdictions. On the basis of this the total for Bengal and Bihar was computed at twenty two millions.

Colebrook placed the population for both provinces at twentyfour millions in 1804. He did this on the basis of an official enquiry in Purnea district where 80,914 persons holding leases and 22,324 artificers paying ground rent were found in 2,784 villages, or 2531 square miles. Allowing five members to a family this would give more than 203 to a square mile. For Bengal and Bihar, on this basis, it would give a population of 30,291,057.

This measurement was held to be largely true by Colebrook except for the fact of those sections of the population "which do not pay rent, nor contribute directly to the revenue." Due to these limitations an average of 200 to the square mile could be held to be true of the districts which were well peopled.

Colebrook stated very definitely that the population had hitherto been underrated, and that undoubtedly it was adequate to undertake greater village and more numerous and extensive manufactures. The limitations on their output were not due to lack of labour but lack of market.
This type of reasoning was inspired by the classical economists, notably Adam Smith, who in his monumental work said:

"a certain sanctity to the self-interested pursuit of gain, by showing that such activity was productive of benefit to society at large by demonstrating that the enterprise of individuals was capable, when left free of regulation of carrying the standard of well being to heights hitherto impossible".

Smith attempted to show that within the framework of a basically agrarian economy, the growth of foreign trade would stimulate manufacture which in its turn would create conditions for agricultural growth. All these changes would result in structural changes in society, by the substitution of a cash nexus for a service nexus and the gradual domination of the market.

In the given context of Bengal such a line of reasoning scarcely applied. According to various other contemporary estimates, the Man/Land ratio was extremely favourable. Therefore increase in production and output was not in this case, merely a function of expanding market but availability of labour.

It would be essential at this point to form an idea of the actual population in our period, factors affecting it, and its level of output.

The famine of 1769-70 had caused mortality and havoc throughout Bengal. In Bihar the districts of Bhagalpur and Purnia seem to have suffered particularly. The proceedings of the Provincial Council of Murshidabad shown that in April 1770, Bhagalpur was in a bad condition. Mr. Harwood the supervisor referring specially to Bhagalpur reported that "the zamindars are ruined, the lands not having yielded half of the produce for the last twelve months".

In Purnia the mortality was excessively high. Desertion was also common, and lands fell out of cultivation. In Havely Purnia 1000 villages were turned into waste.

Buchanan estimated the population of Bhagalpur district by estimating the number of people required to cultivate the extent of land occupied in every division and then comparing the proportions between the agricultural population and the other classes of society.

On this basis he records:

"Notwithstanding these circumstances (lack of disease etc.,) and an uninterrupted peace for number of years, with a large extent of very fertile territory unoccupied, it would appear from the reports of the natives, that the population is in some places on the diminution, and scarcely anywhere is advancing with that rapidity which might be expected."8

8. op. cit.
Buchanan noted a few causes which may have affected population growth, premature marriages, prevalence of diseases. He was not convinced that either of these had a significant role to play in population decline in Bhagalpur district. What appears to be more relevant in this case would be to see how far the so-called changes introduced by colonial rule which had any significance vis-à-vis the population growth rate, had begun to operate in this period. Both Kingsley Davis⁹ and G. Myrdal¹⁰ regard colonial rule as a significant intervention into the pattern of growth of South Asian economies. In India British Rule created the conditions for a greater population growth rate by imposing a powerful centralised rule in place of decentralisation and anarchy. Peace by itself put an end to the decimation of population caused by war. There was a gradual improvement in the quality of medical attention available resulting in reduction of infant mortality and raising of life expectancy, improved transport prevented food famines and starvation deaths. Here it must be pointed out these factors could be regarded as having an effect on the growth rate only at a stage later than our period when the English East India Company was merely acting as an agent for the

⁹. Kingsley Davis, *The Population of India and Pakistan*
advancement of foreign merchant capital into the country. Its days of military subjugation prior to economic and political domination were on and continued right, down to the second half of the nineteenth century. Consciousness and activity on other fronts such as improved transport, health, education etc. really came later as the British settled down to a peaceful long-term exploitation. In any case, in Bengal and Bihar the fact that a local dynasty had grown and established itself and its authority takes away from the picture of pre-British anarchy drawn by Davis.

In Purnia district Buchanan estimated the population by the area cultivated by each plough. On the basis of this he allowed 15 to 19 Calcutta bighas of cultivated lands for every family of five cultivators, including children and women. The agricultural population reckoned at the total population he estimated at 62,500. Buchanan carried the impression that the people of Purnia were characterised by great listlessness and want of energy. He also found the population to be diminishing. This was due to a number of causes - the custom of early marriage which kept up the infant and female mortality rates high, the prevalence of fever, etc. This was largely related to the ecology of Purnia, presence of large turbulent rivers such as the Kosi and Mahananda.

which periodically flooded the areas concerned and created enormous sanitation and other problems. Large areas of Purnia remained unfavourable for settlement and cultivation right up to the present century when immigration into the district took place from various areas.

"The population is sparse comparison to the area, land is easily available and the rent incidence is low.... The flow of immigration appears to have increased during the census of 1911. The immigrant came mainly from Bhagalpur, Monghyr, Santhal Parganas and Malda. The male immigrants were more numerous than the female ones, which showed that the main intention was not matrimony but occupation of land at a low rental."\textsuperscript{12}

The districts of Bihar which were more densely populated were Saran, Patna-Gaya. Of Saran the Collector reported that the district was "generally in a high state of cultivation."\textsuperscript{13}

Of Bihar Patna, Buchanan wrote: "Most parts of the district are as fully occupied as possible."\textsuperscript{14}

In the areas where both, population and extent of cultivated area were extremely low, the period up to the second half of the nineteenth century and even later witnessed growth in population and area under cultivation. Champaran, one of the most backward areas of Bihar underwent considerable growth. The area assessed by Todar Mal

\begin{footnotesize}
\begin{enumerate}
\item[13.] P.C. Raychaudhuri, (ed.), \textit{Sarkar Saran and Muzaffarour old records}, Patna, Date N.A.
\item[14.] \textit{op. cit.}
\end{enumerate}
\end{footnotesize}
in 1582 was only 155 sq. miles. In 1790 an area of 1,041 sq. miles had been assessed. From 1793 to 1845 when the revenue survey was done, the progress in cultivation was very rapid. In 1879 it was estimated that 67 per cent of the area of the district had come under cultivation. By 1907 these figures had reached 70 per cent.

For Darbhanga district the earliest recorded estimates of population was made at the time of the Permanent Settlement in 1793 and was based upon enquiries made during the preceding years for revenue paying lands and revenue free lands separately. The result for the whole district of Tirhut including the district of Darbhanga and Muzaffarpur showed a total of 1,844,310 persons. In 1802 the Collector estimated the population of the district at two million. In 1872 it was estimated at 2,136,898 persons. 15

About the extent of cultivation in Tirhut district, it seems to have suffered considerably at the famine of 1770. In 1783 the Collector submitted a proposal that cultivators should be attracted from the dominions of the Vizier of Oudh to reclaim the unpeopled wastes of his district. Contemporary reports continued to accentuate deterioration from earlier standards of cultivation in terms of area.

"In 1796 Pargana Pachhi was described as the abode of dreadful beasts of pray while the adjoining parganas of Alapur now one of the richest parts of the district, was the haunt of wild elephants whose depredations prevented all improvements."

Pargana Bharwara where 78 per cent of the land was under cultivation by the beginning of the twentieth century, contained large stretches of waste land and in 1802 it was reported that nothing could be seen here but uncultivated plains with here and there a few bighas under the plough.

By 1824 there had been a remarkable transformation:

"In Tirhut proper the waste land at the time of the settlement, it is believed considerably exceeded that under cultivation. All these Parganas are now considerably advanced in cultivation."

By 1940 the cultivated area had increased to three-fifths of the total, and in 1850, it was three-fourths. In 1875 it amounted to 79% of the total. Cultivation nearly doubled itself within a century, but the greater part of the increase took place in the first half of the nineteenth century.

The question which arises out of this is: what was responsible for the positive trends which asserted themselves already in our period. Given the fact of considerable diminution of population as a result of the famine of 1769-70, which of course varied from area to area.

16. op. cit.
area in Bihar, what must be kept in mind is the lack of availability of labour for the reclamation of wastelands, lands which had fallen out of cultivation due to death or desertion. The situation of substantial areas lying waste continued even in the first quarter of the nineteenth century. Over large parts of Purnia, Behar, Tirhut, and Champaran wastelands needed reclamation. Various incentives were sought to be given by landholders to peasants willing to take up cultivation. The Collectors reported that there were various types of reclamation leases prevalent particularly in these parts. As discussed later, in Purnia there were the kumkaust, kumdupra, and Halhagali pottahs which allowed the peasant to take up as much land as he could cultivate at low rates of rent. Here these tenures were taken up by the dominant peasantry who were over the period able to mobilise the labour necessary for cultivation. This came principally from two sources. The famine of 1769-70 had caused considerable amount of desertion by ryots who lacked the capital necessary for taking up cultivation again. The period after the famine witnessed the growth of peasant bandits, groups made up of peasantry who had lost the economic base of their existence. In such a situation, capital was required by them to resume cultivation. This was provided by the dominant peasantry, who had also suffered as a result of the famine, but who had greater
reserves in terms of their control over grain exports from the village, and greater capacity to withstand the effects of famine. Once the famine was over, they were again willing to extend credit to peasants for resumption of cultivation.

By the end of the eighteenth century already the natural growth process of population had reasserted itself (although population was always prone to hazards). The Collector noted that physical coercion was used by the dominant peasantry to get the labour required to cultivate the lands they had taken up. The credit mechanism was being used by them to keep a body of peasants in thraldom, and to make them cultivate as attached labour.

In Tirhut and Champaran, district leases were granted for the cultivation of lands lying waste.

"The Kheel pottah or waste land brought into cultivation and which is distinct in its grant, when relating to bhanlee lands, if called a teekooor pottah the government's share is established at one third, the ryotts' at two thirds. If under the name of Punchdoo pottah the government then receive two fifths, the 'Ryotts' three fifths.

"When the lands are of a better sort being adjacent to the Dhee (high land) and capable of yielding a more valuable kind of grain than such comprehended in the Bhaulee, a fixed assessment of money is taken at underneath rates - the first year 8 annas the second 12 annas, the third 18 annas. If the land is rather inferior the first year 4 annas, the second 8 annas, the third 12 annas and then it becomes mocurrerry or permanent in the latter year's condition".

18. BOR Progs. 22nd June 1787 No. 77.
It seems that there was a reclamation process going on in our period in these areas and these leases were taken up either by the dominant peasantry, mu<fc.addams and ieth-ryots who could supply the necessary capital and mobilise labour. It is difficult in this context to estimate how much of the labour was supplied by low caste peasants settled in the village upon whose labour the dominant peasantry had a claim, and how much was provided by migration of peasantry from neighbouring areas.

Nonetheless it may be concluded here that while the entire province had suffered a process of decimation as a result of the famine, and temporary disorders continued, yet there was a positive trend in our period, and this was directly linked to (a) increase in the availability of labour (b) the role of the affluent peasantry in providing the capital necessary for the reclamation process. While zamindars and government did provide some assistance in the form of tuccavy, yet the supply was not plentiful by an means. The zamindars were in a depressed condition throughout the province and in most places had suspended the tuccavy payment. Government only provided such assistance occasionally. The village level dominant peasants were the most constant and readily available source of credit.
Section 2: AGRICULTURAL SITUATION IN OUR PERIOD

Throughout our period agriculture continued to be exposed to natural hazards. Contemporary reports frequently refer to losses of crops or over-abundance which brought prices down. In Purnia this was a continuing phenomenon. The Collector frequently complained that due to overabundance of the harvest, prices were extremely low and peasants could hardly meet their obligations. Floods and droughts destroyed crops and also exposed the agrarian economy to difficulty. In 1788 it was reported that substantial parts of the Dhurampur Ra were still lying vacant.

But a process of recovery was on simultaneously. In 1804 the Collector reported that the drought would not be so prejudicial to the harvest in this district as might have been expected. He attributed it to the gradual reduction of wastelands which had been deserted due to the mortality of 1769-70.

Agriculture in the Purnia area was also rendered insecure in the eighteenth by the attacks on villages of peasant marauders, the Fakirs. By the end of our period this problem had been reduced.

Tirhut district which had suffered in 1769-70 also exhibited positive trends by the beginning of the

19. BOR Progs. 27th September 1804 No. 8
nineteenth century. In 1795 the Collector reported
that 

pergunnah Allapur was a fine area, but it was
hardly cultivated. The problem was of labour supply.
The presence of the Nepal terai encouraged the peasants
to desert whenever oppressed. The Collector said that
cultivation was carried on in isolated spots surrounded
by wastelands. But by the end of our period it was in
an improving condition, and Tirhut which was described
in 1795 as a perfect waste compared to Hajipur had by
the 1870s turned into a heavily populated area with a
population density of 691 per square mile. It was
closely cultivated with sugarcane, opium, indigo.

Bhagalpur district had suffered from the famine of
1769-70. During the fifteen years following there were
frequent references to droughts, and scarcity. In 1775
September the Collector reported to the Governor General
in Council that "as the drought still continues the
approaching harvest affords a very bad prospect through­
out my districts but particularly in those margannas
where the chief cultivation is the early grain. The
late crops were good, but grain has for some time past
sold at an advanced price, from the unfavourable

20. BOR progs. 19th May 1795, No. 46.
21. BOR Progs. 7th August 1795, Letter from Collector
Tirhut dated 17th July 1795.
22. op. cit.
appearance of the next harvest."^23

In May 1779 a severe drought was reported "as there is no appearance of a change in the weather it is with much concern I am under necessity of representing to the Honourable Board that the severe drought which we have experienced in this part of the country for some time past has alarmed the landholders in general to so great a degree. The country is certainly in a most alarming situation. The lands which ought to have been cultivated two months or six weeks ago are still lying waste for want of rain as a result of which little or nothing is expected from the bhada harvest."^24

Lack of irrigation and lack of required population to take up cultivation seem to have been the main reasons for poor cultivation. In 1795 the Collector reported that the revenue suffered due to the uncommon cheapness of grain, and agriculture was poor due to the thin population of the district.\(^{25}\)

A remarkable account of the distress caused by lack of rains comes from the Collector in 1803.\(^{25}\) The

\(^{24}\) op. cit.
\(^{25}\) BOR Progs. 24th July 1795 No. 8.
\(^{26}\) BOR Progs. 23rd September 1803, No. 1.
Collector was replying to the Board's queries regarding the impact of the extraordinary drought prevailing in the district:

"I am sorry to inform your apprehensions are but too justly founded, the Bhadon harvest is likely to yield little more than half of the usual produce and unless we should be blessed with rain in a few days the Poose rice harvest will be near totally lost, and the Rubbee must also considerably suffer from the ground being so hard and parched in many places that it cannot plowed."

"If any applications should be made for advances for any of the purposes mentioned, I shall immediately comply with them. There is less water now in the Bhaugulpur Nullah than there usually is in the beginning of November and it continues to fall rapidly."

The Collector felt that the landholders would be exposed to balances, since they could neither obtain any credit. He forbade all sales in such circumstances, because in his opinion the only class that would gain would be of the "opulent mukaddans" who would be at great pains to dispossess the zamindars.

But later in the nineteenth century the situation changed considerably. Irrigation was widespread specially in South Bhagalpur, where it was reported to be common and absolutely necessary specially for the rice, wheat and sugarcane crops. A description of the irrigation system comes to us.
"Irrigation is effected by small artificial channels leading off from a head of water collected by means of a dam known as a dhar bandh in one of the hill streams and by wells. Rice land is generally irrigated at Rs. 2 per bigha. Sugarcane is irrigated in the cold weather from wells. They are simply circular pits three feet in diameter and twelve or fourteen feet deep and they cost a rupee to sink. To irrigate sugarcane land from a well costs about Rs. 74 per acre. The irrigation channels are made and repaired entirely by the holders of the land who appoint petty officers to distribute the water.27

It was further pointed out that the water was supplied to the rice fields during the dry spells which are interspersed with the monsoon, and in Kartick (October). The cost of digging dams had been estimated by Buchanan at 4s.6d. for 100 gaz28 by one wide and one deep. The costs had not gone up much by the mid nineteenth century. Small dams were dug by cultivators in the canals to allow the water to enter his fields, and once the water was in, the dams were broken and the water flowed into the next cultivator's land.

Two things become clear. By the end of our period here a process of recovery is visible. Chiefly responsible for this was a growing population and more irrigation. In this area irrigation was carried out by the landholders as well as by peasants. The latter maintained the dhar bandhs everywhere while peasants dug wells. The secular trend must have been helped by the rising prices of

27. op. cit.
28. One gaz - 33½ inches.
agricultural produce, more settled conditions compared to the late eighteenth century, and increased incomes of landholders and the affluent peasantry.

Shahabad suffered in the late eighteenth century through the decline of irrigation works without which cultivation was extremely difficult. In the period 1787 onwards the Collectors frequently referred to the neglect of irrigation works leading to desertion by the ryots. The Collectors attributed this decline to the prevalence of the farming system and the depressed condition of the zamindars. In 1793 the Collector reported to the Board that certain parts of the district were rendered waste and the ryots required to be given cultivation advances, tucarry and gilandaze or money for embankments and irrigation works were needed.

In 1803 the district suffered extensively due to drought. The Kharif harvest had been completely destroyed and it was doubtful if even the rabi could be at all sown.29

The Collector pointed out that the southern parts of the district were a complete waste and could only be restored by liberal measures and a moderate land rent.30

29. BOR Progs. 27th September 1803, No. 7.
30. BOR Progs. 23rd September 1803 No. 25.
Buchanan found that the neglect of the landholders in repairing reservoirs had resulted in reducing the extent cultivated and reducing the produce.

He estimated that out of a total area of 4,087 square miles 2294 square miles were cultivated. In 1870 the Collector estimated that out of a total of 4403 square miles, 2755 were cultivated, 521 square miles were cultivable, 149 square miles were inundated (under tanks, reservoirs etc.) and 978 square miles were incapable of cultivation. Both the area under cultivation as well as the area covered by tanks etc. had increased. Irrigation based on the ahir pain system was found to be extensively practised. Here again the major factors responsible for the secular trends would be settled conditions spread of irrigation, higher agricultural prices, increasing population etc.
Section 3: TECHNOLOGICAL BASIS OF AGRICULTURE

Irrigation was essential to cultivation in particular parts of Bihar, the main areas being Shahabad, the Patna-Gaya region, and Saran district. The factors responsible for this dependence, as well as the particular kinds of irrigation methods followed were sometimes common and sometimes special from area to area. In the Patna-Gaya region, apart from uncertainties of the season, the particular slope of the land being from west to east made the retention of moisture in the soil difficult and necessitated an elaborate system of water storage and water sharing for agriculture to be carried on in the drier parts of the year. Irrigation was also absolutely necessary for the lighter variety of soils. The system here was of the ahar-pain. These were the reservoirs and the water canals. Many of the irrigation canals were rather long spanning several villages, and conveyed huge amounts of water in the dry season. The expense of both making and repairing the canals and reservoirs was entirely borne by the zamindars who also appointed persons to regulate the allocation of water. During the height of the floods, these canals and reservoirs merely allowed the water to flow on the fields through sluices, which were made out of a hollow taur tree, the end of

31. This is discussed in detail in a later Chapter. A notable commentary on this system exists in G.A. Grierson, Notes on Gaya District, London 1893.
which was filled with clay to confine the water. In the
drier periods, the water was raised in small quantities
by a bucket (chaur) suspended by ropes, while larger
amounts of water were handled by either canoe like con-
trivance made out of a hollowed tree trunk, or a pot
raised by a lever.

The ahars varied in size, and were constructed
specially for rice cultivation by the proprietors of the
villages. The cost of construction varied according to
size from Rs. 500 to Rs. 25. When water was required, the
bank was cut, and water distributed over the fields.

The financing, maintenance and organisation of
irrigation in the ahar pain system which was a system of
large scale irrigation was carried out by the landlords,
who employed people to dig the canals, and reservoirs.
Such people were known as beldars and were paid by the
landlords out of the rent, but often the peasantry were
called upon to labour in the construction of these
irrigation works without any significant remuneration.
This was begar or unpaid labour which they were liable
to perform within the traditional situation. The
peasants also had to pay for the use of the water, at
the rate of eight annas for a standard bigha, only the
persons whose fields lay in the village where the ahar
was situated having it free. The peasantry in these
areas were dependent on the landlords for proper main-
tenance. When maintenance was not forthcoming, cultivation tended to fall. Such irrigation helped to bring the rice crop to maturity, and also allowed the raising of a winter crop of wheat barley etc.

The responsibility of financing the maintenance and even of farming the canals and reservoirs were given out by landlords to rent farmers in cases where they resorted to rent farming as a method of estate management. In the traditional context, such engagements were usually made with the substantial peasants, the jeth-raiyats and mahtos who had an entrenched position in the local area as controllers of land and labour. They had a vested interest in the maintenance of a level of cultivation and therefore tended to have a more positive role with regard to irrigation etc. compared to a class of people who took on rent farming in the post Permanent Settlement period. In the 19th a change seems to have occurred in the institution of Thikadari. There were some individuals who had lent money to the landlords to pay their revenues or defray their costs of maintenance, and had taken over the management of their estates as security. Here the mode of management was different to the traditional elements. Some of the new elements seem to have been trading elements, with links with banking houses which lent cash to the zamindars and then took over control of
the estates. There is interesting evidence of these elements entry into rural society as controllers in a new way. In the urban centres in these districts, such as Patna, Gaya, Daudnagar, there were "proper banking houses" (kothiwals) who had links with other various centres of commerce and government such as Calcutta, Benaras, Mushidabad. Some had agents at Madras and Bombay in the south, with Lucknow and Dacca, and also with Nepal. All these houses had "extensive credit", and along with another category of persons connected with trade, the surrafs or money chargers lent money to the zamindars, and also paid the revenue, "which operation is now their chief support." 32

These elements were in the short run not interested in investments in the estate which resulted in neglect of the traditional large irrigation works, which adversely affected agriculture. Buchanan found that in the Patna-Gaya area wherever the zamindars had smaller holdings they were more attentive to the need for maintaining irrigation. But wherever the zamindar had resorted to farming out to his creditors, irrigation tended to fall, and so did the level of cultivation. This was the case with the large properties of the Rajas of Gihaur. In other parts, he estimated the 3/11ths to 7/11ths of the cultivated area had fallen out of cultivation due to such

32. Buchanan op. cit.
neglect. Various other causes had also led to this situation, such as periodic droughts, and decimation of the working population, spells of low prices, but the effects were compounded by an irrigation system dependent on the zamindars capacity. When their condition was depressed irrigation declined due to their lack of capacity to invest, or obtain credit to invest in irrigation.

In Shahabad area, Buchanan found that the ahar pain system could be extremely useful in increasing productivity by rendering the basis of cultivation more secure. But here compared to Patna and Gaya regions, the system had been much less put to use. Where such reservoirs and canals did exist, they had been dug by the zamindars for purposes of spiritual gain or temporal fame, and had been forthwith neglected. Another factor which prevented the proper utilisation of the existing canals, and construction of new ones, were the disputes which existed between the landlords after the Batwarrah law of 1814, regarding partitions of joint estates, where the owners refused to cooperate even on such issues as irrigation works. The result of such neglect was that cultivation had deteriorated. Areas where the reservoirs were in a tolerable state of repair, two crops were easily grown, wherever the former were missing or neglected, the output was much less.
In this area also, there was the traditional system of farming out of the rents on bigger estates, most of the farmers being the old hereditary chiefs of villages or wealthy tenants. After 1793, there was evidence also of granting rent collection and management leases to the creditors of the zamindars who were similar to those operating in Patna-Gaya. But no distinct change seems to have occurred in the situation of irrigation under the two agencies for estate management. The canals and reservoirs seem to have been widely neglected even under the management of the mahatos and jeth ryots. This may be attributed to a variety of reasons: Shahabad was a drier area compared to Patna and Gaya districts and agriculture and trade were not as developed. Population was less concentrated here than in these other regions and the economic condition of even the "wealthy tenants or ashrafs" seems to have been generally depressed. There was a great deal of irrigation from this district mainly into the army, and the recruits came from the gentry, "a great degree of poverty renders them willing to enlist." The level of the surplus being generally low in Shahabad at the beginning of the nineteenth century, even the better-off tenantry probably lacked the capacity to look after irrigation requirements.

33. Buchanan, op. cit.
Wells were another source of irrigation which was widely used, but these were obviously on a much smaller scale than the system just discussed. Here too, the wells were of two types, and this made possible a distinction between dependance on a superior agency such as the landlord or his agents, and the peasant's own effort. Wells were used in Shahabad and Patna-Gaya regions and very extensively in Saran district. In the former two areas, wells were of two kinds - Indaras which were lined with brick and kuyas were not. The former were usually made, by the zamindars, and the latter by the cultivators. Well water was used to irrigate winter crops, vegetables and sugarcane. The landlords assisted the Koeri cultivators who grew vegetables, sugarcane and other valuable crops by digging the brick lined wells. The cost of these varied from Rs. 100 to Rs. 150 and in almost all villages; there were from one to three of them. The lands near the village could be cultivated from the wells and vegetable gardens, and land occupied by sugarcane or wheat paid a higher rent than others, Rs. 4 - Rs. 7 a customary, bigah whereas rice paid from ₹. 2 - Rs. 5. Landlords in Patna Gaya area could also obtain a money rent from the areas watered by wells where cash crops

34. Buchanan, op. cit.
were grown, whereas the whole system of large scale irrigation was meant not for cash cropping as for ensuring the rice crop and these areas paid a produce rent, which was also meant to keep the zamindar conscious of the need to maintain irrigation works.

In these districts also, the peasantry often did construct *kutcha* wells or temporary wells. Such wells cost between Rs. 5 and Rs. 10.\(^{35}\) Generally such wells were used to irrigate vegetable patches. In Gaya district such wells were most commonly found in the sandy tract between the Son and Punpun rivers, "where the country may be said to be perforated by them."\(^{36}\) The cost varied according to the distance of the water from the surface. The construction and organisation of irrigation from such wells seems to have been undertaken by the peasants working together.

In Saran district well irrigation seems to have been the commonest method used. Here too *kutcha* wells were a result of peasant effort and were used to cultivate barley, sugarcane, tobacco, potatoes, and vegetables. Well irrigation was also used in Tirnut and Champaran areas.

\(^{35}\) Hunter, *op. cit.*

\(^{36}\) *op. cit.*
In areas like Purnia, irrigation was more or less superfluous, due to the amount of moisture in the soil being more than enough for cultivation. The inundated land occupied about forty-five percent of the whole. On the remainder, the water continued to stand for about two or three months. In Bhagalpur district irrigation was not much practised in the northern parts of the district, but was absolutely necessary in the south. This was due to the slope of the district which made moisture retention extremely difficult. Here too irrigation was organised on a large, and a small scale basis. The former consisted of dams constructed to store water from the hill streams and from these char bandhs irrigation channels would lead the water into the fields. The construction and maintenance of these was done entirely by the proprietors of the land who appointed persons to see to the distribution of the water. This water was mainly used to water the rice fields during spells of dry weather and in the month of October. Wells are constructed by the cultivators themselves mainly to irrigate the sugarcane crop. Such wells cost about Rs. 1 to sink and consisted of merely circular pits three feet in diameter and twelve to fourteen feet deep. Water was raised by an earthen pot suspended from a bamboo lever. The cost of irrigating a sugarcane crop from a well averaged at about Rs. 7 ½ per acre.
In Tirhut district the main source of irrigation was wells. It was simple and within the cultivator's capacity to undertake its construction:

"An erect pole (khamba) is stuck in the ground and a bamboo (dhenki) balanced on it, with a bucket (dul) at one end, and a weight of mud, dried in the sun at the other. The water is then raised by leverage. In other cases a leathern bucket is suspended by a rope passing over a pulley, and attached to two oxen, which run down an incline, and pull the bucket when full. A well costs about Rs. 3, and would irrigate nine bighas. In the case of water raised from a hole, the usual plan is to have the ektha (karin) open at one end, suspended from a bamboo stand. The man pushes the closed end into the hole full of water, then raises it so that the water runs out at the other end, and is guided to where it is wanted. The cost is very small. Another method is for two men to stand, one on each side of a hole full of water, and scoop the water up with a bucket made of needs." 37

Apart from irrigation, another aspect of the technological basis of cultivation which would affect the peasant's capacity to secure the basis of his cultivation as also to undertake any increase in it, would be the kind of implements used, and the power needed to operate such implements, whether human or animal, and the cultivator's capacity to tap such sources of power.

The main implement of agriculture was of course the plough, consisting of four parts - the hal proper or a triangular piece of wood into which the iron (phar) which

cut the soil was fixed; to this was fitted the wooden handle (*lagha) which directed the plough, and the pole (*hari) which fitted into the centre of the yoke (*juath). The yoke rested on the animal's neck in front of the rump and was kept in place by pieces of leather which passed around the neck. 38

The plough was operated by draught cattle, and it would be pertinent to see the productivity per plough, and the resources in plough stock which were available to different classes of cultivators for production. In Purnia district in the eastern parts two cattle were required for each plough, the cattle being of an inferior quality, and would cultivate about five acres. Where the soil was very light, or near the rivers where a lot was sown without ploughing, a pair of oxen would serve for a farm that contained more than five acres of land under crop. The greater part of the animal stocks were owned by the high caste tenants, as well as the tradesmen who combined agriculture with trading and money lending, and the poorer cultivators belonging to the peasant castes hardly had access to adequate stocks for cultivation, and had either to borrow a part of their stock at a high rate of interest. Buchanan seeing their condition of poor quality land holdings, little or no animal resources, enormous changes on borrowing, wondered how they managed to live despite

paying heavy rents. The possible answer to this lay in the united efforts of such peasants to help cultivate each other's lands.

In Shahabad district, four cattle were considered requisite for one plough and the higher castes, and the cultivators combining agriculture and trade having a virtual monopoly of animal stock, "many poor men who can produce only two beasts unite in one plough; and many more are reduced to the miserable share of what one plough can cultivate, and very often are not able to procure the full stock, but use three cattle, one of which in turn works the whole day."

In Patna and Gaya areas the more or less the same situation prevailed. (Annexure gives a breakdown of plough cattle owned by different classes of cultivators in Patna Gaya regions).

39. op. cit.
40. op. cit. p. 338.
In studying the cropping pattern and changes in it, we will take up six main crops and try to derive certain conclusions about the developments in Bihar's agriculture over the period.

The most important foodcrop over all the Bihar districts was rice, of varying kinds. In Purnia district the summer rice known as Bhadai was a very important crop. It was usually sown on high land.

Rice formed the staple crop in most of the Bihar districts, differing mainly the variety cultivated. In Patna district, the kartik or early rice, and the aghani or winter rice were the two main kinds. The winter rice crop was dependent on irrigation from the ahar pain system and consisted largely of varieties of fine rice.

At the end of the nineteenth century, three fourths of the cultivated area was sown with rice. Buchanan stated the area under rice to be less than half the cultivated area. The Collector in 1870 felt that Buchanan had under-estimated the rice growing area, as no extension seems to have taken place in the rice area, nor no improvement in quality.
In Gaya district the two crops of rice grown, were the **bhadai** and the **kharif** the latter being the more important, and being reaped around December. Rice was one of the principal articles of export to other districts.

Buchanan found rice to be the principal crop in Shahabad district except on the low banks of the Ganges, although the neglect of irrigation had resulted in reducing the area as well as the produce. He estimated that half the district was cultivated with rice.

In Purnea the summer rice or **bhadai** was important. The winter rice crop known as **Agnani** or **Hengwat** was sown between mid-july and mid-August. The coarser kinds were broadcast on the lowest lands. The crop was harvested around November. This crop was significant, for Purnea district. The principal agency financing the cultivation of rice seems to have been "chiefly merchants of various kinds who make advances for their produce, silk, indigo, grain and butter." The main reasons for borrowing seem to have been rent payment, and subsistence and when the harvest came, the grain had to be surrendered to Beopars and Paikars who supplied the outside merchants with their cargo for export.

41. Buchanan, *op. cit.*, p.349
In Patna and Gaya districts the rice crop meant for sale was generally financed by the better off cultivators who were also traders (Grihastha beparis) who made large profits on the crop as they lent money and seed to very poor cultivators at high rates of interest and collected both principal and interest at the time of the harvest. These grihastha beparis sold the grain five or six months after the harvest to mahajans or goldars, bigger merchants dealing wholesale in grain and other articles. These merchants were located in trade centres of the district and had links with the markets of Calcutta to which they sent large amounts of grain for sale.

In Shahabad also the main persons financing the rice meant for sale were the mahajans dealing in advances of money or grain to poor cultivators, being repaid entirely in grain at harvest. Their rates of interest were extremely high and the peasantry borrowed from them either to say the rent:

"about a third of the whole rent of the district is said to be paid by means of money borrowed from them."44

or "to support the necessitous."45

These mahajans sold the grain to bigger wholesale merchants known as Basenoga Mahajans who had capitals ranging from 500-1,00,000 rupees. They exported grain to other parts of Bihar as well as to Calcutta.

42. It is difficult to say which part of the rice surrendered at harvest was really for sale, and what proportion was the result of coercion, or distress sale.
43. op. cit.
44. Ibid, p.430
45. Ibid.
Oil Seeds were widely cultivated in Gaya area and were a valuable article of export. These were generally cultivated by the Koeri cultivators and depended on irrigation which was carried out from wells dug by the cultivators. Mustard was the most remunerative and was cultivated on good land near the village. The profits from this in a good year exceeded that of rice or wheat. Oilseeds gave an average profits of Rs.15 a bigha in a good year, rice gave Rs.10 and wheat, Rs.8-8. But it was a precarious crop being liable to insects. The rentals on such lands also tended to be high, between Re.1 and Rs.5 per bigha. The cultivator would on an average have a profit of about Rs.10 per bigha sown.

In Purnea region oilseeds "may be considered as the staple article of cultivation." These were an article of export, and the cultivators of the peasant castes, the Koeris specially grew them as a winter crop along with turmeric, ginger, etc. The oilseeds cultivation does not seem to have been financed by any special group, and the seeds were sold directly by the producers to the telis or oilmen, who seem to have been in the control of the bigger oil merchants who made advances to them and collected the oil wholesale which they then exported to Murshidabad and Calcutta.

46. Buchanan, op. cit., p.357.
Sugarcane was widely cultivated over several parts of Bihar. In Patna Gaya regions in the early nineteenth century, it occupied about 20,000 bighas. It was a valuable crop, with a large domestic market, but also was an expensive and difficult crop to raise. The crop had to be grown on good high land, easily irrigateable. Generally land near the village was selected and the crop was carefully watered from wells. It took eighteen months to mature. No system of advances seems to have operated in this region and the juice was made over by the growers directly to the manufacturers of different varieties of sugar.

During our period the agrarian economy of Bihar begun to be brought into contact with world market forces. This was in the context of the East India Company's Investment in Bengal. The Investment of the Company signified the trade of the Company in commodities from India which had a ready market in Europe and America. Over the period the pattern of this Indian Investment changed from an accent on Indian manufactured goods to primary commodities which were essential either as just trading items like opium, and those which formed the staple of a manufacturing process, like indigo used to manufacture dyes. Both were grown in Bihar, one directly sponsored by government as financier and auctioneer and the other by a conglomerate of business interests.
concluding ex-India hands and entrepreneurs from Great Britain who either became planters themselves or formed the "agency houses" which financed the cultivation. Poppy cultivation did exist in Bihar at the beginning of the eighteenth century as was commented upon by Hamilton in 1727 "Patna produces also so much opium that serves all the countries in India with that commodity." 47

With the advent of British political control, a new type of restricted system of cultivation was inaugurated. This system was new in so far as the controlled nature of it was not in tune with the peasant's requirements nor with the fluctuations of the country market. It was rather controlled to suit the requirement of a tri-cornered trade which grew between India, China and Great Britain. At this stage of its development the British economy was unable to supply any commodity which had a particular market in China, whereas Chinese teas and silks enjoyed a wide demand in the western world. In such a situation the one commodity that could be used to bypass the trade problems was opium which, grown under controlled socio-economic conditions in India under the aegis of the East India Company was auctioned by it to private traders plying between Calcutta and London, found a ready and constantly expanding market in China.

Opium thus became a valuable lynch-pin in the Company's trade pattern and hence new features crept into its production organisation. The peasant family remained the unit of production but with a difference. Cultivation was financed not as before by merchants whose advances had a certain flexibility but by a foreign trading concern exercising monopoly control over the market. The fact that this trading concern also exercised state power was extremely important from the peasants' point of view.

The new situation was characterised by an enormous expansion of cultivation. In Shehabad district opium was grown in the early nineteenth century on about 6,850 bighas producing about 45,983 sers. In 1875 it was estimated at 35,281 opium bighas or 22,050 acres. The total out-turn was 7,554 maunds or 302,160 sers. In Patna district the area under opium by the late nineteenth century amounted to about 37,701 opium bighas or 23,563 acres. The out-turn amounted to about Rs.7,248 maunds.

In Saran district opium was by far the most valuable crop grown. In 1773 the monopoly for providing opium in Saran was granted to one Mir Mannir, who had been employed

48. op. cit.
49. op. cit.
by the Patna Board on that business, and was best ac-
quainted with the mode of managing it. He was to answer
for any outstanding balances and was to deliver the
opium at Rs.320 per maund. In 1785 it was resolved to
lease the contract to the highest bidder, and this
system was carried on for four years. On the conclusion
of this period Government determined to reserve to itself
the appointment of men to superintend the collection.
The cultivation of the opium poppy kept increasing in
the following years, according to the needs of trade.
In 1797-8 the advances made amounted to Rs.112,050; in
1798-99 Rs.267,100; in 1799-80 Rs.267,300; 1800-1801
Rs.228,127. In the years 1797-1798 the area under
opium in Bihar was only 46,000 bighas. In the sixties
of the next century it rose to above 6% lacks of
bighas. \textsuperscript{50} Poppy was cultivated more or less exclusively
by the peasant caste called \textit{koeri}. This phenomenon
was noted by Buchanan in his travels in South Bihar.
This expansion took place under monopoly controlled
conditions, though a monopoly over its cultivation and
trade had been exercised by native merchants.

Prior to period of real competition from Malwa opium
the Company's policy seems to have been on the whole anti-
expansionist. Cultivation, in order to be restricted to
the best lands in was prohibited in Purnea, Monghyr and

\textsuperscript{50} Quoted in B. Chowdhury, \textit{Growth of Commercial Agri-
culture} in Bengal, 1757-1900, Vol.1, Calcutta 1964.
Bhagalpore. Even in a period of rising prices such a policy could be followed due to the fact of the virtual monopoly of Bengal opium on the China market.

The opium cultivators were mainly of the Koeri or gardener caste, and they received advances from the agent in proportion to the extent cultivated. The advances were generally made around November and these were interest free. This formed a source of attraction for the peasantry, particularly as these advances came in useful in the post harvest period (The aghani rice crop was reaped around November). The opium crop commenced around December. As Buchanan remarked, "Both poor and rich are perfectly satisfied to receive the advances, which shows that the business has been conducted on liberal terms." 57

While the advances were lucrative for the peasantry being interest free, and also coming at a lean period, there were certain issues linked up with the cultivation of the opium poppy in the given framework that may have worked to make it less attractive an option. Firstly, opium occupied the best lands, and required a great deal of labour and skill in its cultivation. The soil had to be carefully prepared, and the plants required irrigation a number of times depending upon the nature of the season. Prospects of loss were great, the plant being liable to injury from various causes.

51. Buchanan, op. cit.
The particular production organisation for opium also had certain new features which did not exist with other crops in general, except indigo. The Company decided the amount of the drug needed for trade purposes from year to year, on the basis of trade fluctuations, and therefore the acreage devoted to opium also tended to fluctuate according to this factor. This placed the cultivators in a peculiar position, as they got used to the interest free advances, and then these suddenly tended to be withdrawn. This left them without resources. Another result of sudden curtailment of opium orders would mean reduction of income for many cultivators who had been growing it for the Company. Then again there was the question of prices paid by the opium agents for their produce. These were low compared to the enormous profits reaped by the Company in its trade.

In the first quarter of the nineteenth century, demand for opium was increasing and so were prices, which even after steadying continued to be on the higher side. In this situation of increasing demand "due to the spread of the opium consuming habit", and restricted supply of opium from Bengal, the Malwa opium began to gain ground. There was competition also from opium grown illicitly in Bengal itself and opium from Turkey. Malwa opium was the toughest rival due to superior quality and expanding production under free conditions. The British government attempted from the time of the
Marquis of Hastings to force a restrictive system in central India and Rajputan. But the system was economically ruinous and politically unsuccessful, and had to be abandoned. From 1828 onwards the drive was towards expansion of cultivation and higher prices.

Prices paid to the cultivators tended to be extremely low under the contract system. That peasants found it unremunerative to cultivate opium was proved, by the fact that wherever an option presented itself, poppy was abandoned. In 1807 it declined considerably "in and about Patna, Phoolwarry, in the vicinity of the cantonements at Dinapore and also in and about Arrah due to great growth of potatoes within the last 4 years."\(^{52}\)

The unremunerative price was the basis of all these problems. Mr. Fleming and Mr. D'Oyly calculated the poor returns for an expensive crop like poppy under Company controlled production. The profit per begah was calculated at Rs.2-4.\(^{53}\) Rents on poppy lands were very high.

In this situation of forced cultivation of an unprofitable crop, the State Entrepreneur needed strict legal measures to support its structure of repression. The government gave advances for a fixed area of land to be cultivated. These advances were welcomed by the

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peasants as they came in the lean post-harvest period and also, they were interest free. But in return for these advances, the entire crop had to be handed over the Company's agents. Various laws made it obligatory for the peasant to pay back advances at exorbitant rates unless cultivation was done, to bear responsibility for the entire crop being handed over; he was also made liable to fines and imprisonment.

Figures for area under cultivation during the period 1806-1818, 1819 show hardly any change. This could be explained by the fact that though cultivation was definitely not very remunerative, it was continued as the special area of occupation by the Koeri cultivators known for their agricultural skills.

The whole question of prices becomes particularly relevant when it is considered that zamindars did not like their tenants to cultivate opium as it reduced their power over them. The Company's agent often made the advances to the peasants not directly but by mediating between the zamindar and the peasant by paying the particular rent instalment due after the winter harvest. This mediation of an outside authority tended to reduce the zamindar's hold and they attempted to tax the peasantry for it by imposing high rates of rent on the opium crop. In Patna and Gaya areas the rents for such lands
were being drastically increased from Rs.5 per bigha to Rs.14-Rs.15 per bigha. This would make it unprofitable for the cultivator to grow opium.

Certain peasant groups participated in the production of the opium. These were generally the Koeri cultivators who were traditionally vegetable gardeners apart from growing the usual crops of rice etc. They constituted part of the strata of the well-off peasantry in the Patna Gaya region, and were credited with possessing capital which they engaged in credit activities in the village. Elsewhere they are not so well off.

Apart from the Koeri cultivators another set of persons was linked up with the supervision of the cultivation and the collection of the crude opium. These were the Indian agents employed by the opium agents at outstations. The agents seemed to have relied on members of the upper caste peasantry, the jeth raiyats to carry out these functions. Sometimes the opium agent's deputy would be the mahato or village headman. Such agents were known as gumashtas, and they enjoyed tremendous powers on the cultivators. Advances were made through them to a representative of the cultivators known as a lambardar who afterwards distributed it to them. After the agreements were concluded, the gumashta of each koti had to measure the lands in his jurisdiction to see that the security offered by the lambardar was valid, and that no cultivator who was in
arrears was given an advance. Buchanan pointed out:

"The native agents have it in their power to do a great deal of mischief and therefore it is highly expedient that the European agent should frequently visit the country to hear complaints and that he should be authorised to give summary redress."54

The drug had to be surrendered by the cultivator to the Indian agents posted at the village and a lot of abuses were practised. The drug had to be tested for quality, and it depended entirely on the former to reject or accept the produce. This was especially iniquitous as the cultivators was prohibited from selling elsewhere, and a rejection meant a complete or partial loss.

Source of control on the opium cultivators by opium officials was the ban on selling to any other agency, in order that the Company's quotas be met. Such "smuggling" was punished by fines and imprisonment. Defaulters were also liable to prosecution.

All these facts point to the emergence of a new kind of production organisation where while the cultivation itself was still based on the peasant family, the autonomy of decision making was taken away in terms of constant supervision of the cultivation process, the forced sale to one monopoly purchaser, imposition of punishments on defaulting and "smuggling", and the forced abandonment of cultivation when required by the Company's interests. On the basis of these facts it

54. op. cit., p. 522
can be concluded that the cultivation of opium as a commercial crop was in reality a sort of "forced commercialisation", in which a certain section of the Bihar peasantry was brought into contact with the export markets mainly by an artificial incentive, the interest-free advances which were strategically timed. But once the cultivator accepted the advance and consented to grow the poppy plant his autonomy ended.

A similar case was that of indigo. Indigo is an important commercial crop in Bengal dating from the eighties of the eighteenth century. The demand for indigo as a superior dye was rising and its supply from traditional sources was declining due to competition from coffee which was found to be a more remunerative crop in Jamaica and other areas of the West Indies.

India was to be the new source of world indigo supply due to the cheap labour readily available as also the English East India Company's political control here. Indigo was able to consolidate its position in the India-England trade due to the decline of traditional commodities of trade. Bengal indigo was promoted against others and liberal assistance to the planters became the established policy of government. But government assistance could not alone fulfill the requirements. After 1813-14, the opening of the India trade saw the transfer of capital
to India by private traders. Their organisations, the Agency Houses, had been financing the Indigo cultivation from the early nineteenth century. It was a long association till about 1840. The fortunes of Indigo passed through many vicissitudes, mainly due to the planters lack of knowledge of fluctuations in demand. Various other trade factors caused periodic transfers of capital, leading to bankruptcy of many houses and Indigo concerns.

After the collapse of the Agency Houses,

"A new type of business organisation, generally known as the managing agency system emerged. The important structural change was the disassociation of commercial agency from banking." 55

In Bihar indigo was significant in Purnea, and Tirhut, and Champaran areas over different periods of time. In the late eighteenth and early nineteenth century indigo factories had already made their appearance in Tirhut. When the Government in 1788 called for a list of non official Europeans in Tirhut, twelve names were returned, 10 of which were those of indigo planters. In 1793 nine factories were established and were at work: Daudpur, Sarya and Dhuli worked by Mr. William Orley Hunter, Athar by Mr. Gentil, Kantai and Motipur by Mr. Nowell, Duria by Mr. Finch, Bhawannah by Messrs. Rich and Schuman, and Shahpur by Mr. Purves. Ten years later the number of factories nearly doubled - Mahamadpur, Balsor and Pipraghat, Dalsinsanai, Titwarpur, Tewara, 55. op. cit., p.392
Kamtaul, Chitwara, Pupri and Shahpur Lindi. The total amount of lands held by the factories in the district amounted to 581 bighas on a mukarrari basis. With the decline of sugar much of the capital invested in it was transferred to Indigo. Indigo was organised for production on two kinds of patterns - The *ryotwar* or *assamewar*, and *neez* or *zirat*. Under the first the peasant received a small advance, and cultivated on his own land at his own risk. The latter was cultivation by the peasant as a hired hand on the planter's land. In our period the first predominated. In Purnea area, the *neez* or *zerat* system hardly operated in our period. The usual system was to make an interest free advance to the farmers prior to the beginning of cultivation. The seed was furnished by the Indigo planter to the cultivator for a price. The crop after it was matured was taken to the factory at the planter's expense, unless it was near the factory.

The greater part of the crop was grown on land which produced a winter crop of pulse or rapeseed, and occupied the place of a crop of rice or millet which were it not for the Indigo would be sown on the same ground. The crop was usually sown in February and when the season was favourable, was reaped before the lands were inundated by the monsoon-fed rivers.
Although the peasant produced the Indigo for sale to the factory under the assamewar system without losing his land, the prices paid in Bihar were lower than in parts of Bengal. It was thought to be "totally inadequate to induce the farmers to cultivate the plants." Buchanan demonstrated this by comparing the profits of Indigo to those on summer rice, which was the crop supplanted by Indigo. The average produce of the former was worth about Rs.2, double the value of Indigo:

"Still, however, the rice is no doubt a more profitable cultivation; and in fact, the farmers (except on the poor sandy land that will not produce rice) are exceedingly backward to undertake or continue the cultivation; and many of the landlords discourage their tenantry from engaging in it, by every means in their power."57

This account shows that even under the assamewar system, the crop was unprofitable for the peasantry. The system also had in-built tendencies of oppression. Faced with the unwillingness of the cultivators, and the resistance of the zamindars to the crop which exhausted the soil, the planters had to resort to other means of coercion on the cultivators. They gave various incentives to the richer peasants - they would encourage them to undertake the thikadari of large tracts of land, whereby these peasants turned thikadars acquired a new tense of power and coercive capacity as the official agents of the zamindar to force the cultivators to grow indigo. "This is a still more delicate plan, bordering on oppression", remarked Buchanan. Such were the beginnings of the system

56. op. cit., p.392
57. op. cit., p.393
whereby later on, planters in Bihar entered into the given structure of land control mainly as thikadars with near absolute powers over the tenantry. The basis of this entry into thikadari was the credit advanced by the planters to the zamindars. In our period such transactions were still indirect the planter merely becoming the security of the mostajiers or thikadars who paid the zamindar the in order to gain the farms. Later, by the end of the nineteenth century such credit relations had become direct and were much more widespread, thereby allowing the planters to lease land directly from the zamindar as farmers, and then force the ryots to grow Indigo.

"Indigo factories often take leases of villages from maliks. In such cases the ryots are required to grow Indigo".  

This can be seen in detailed studies of the histories of the principal estates in the Indigo growing areas, where along with substantial tenants, the Indigo planters emerged as a significant component of the thikadars who actually controlled land, labour, and its produce.

Since most big zamindars were perpetually in need of money, the planters were able to extend loans to them

58. Hunter, op. cit., p.111
59. For a study of conditions in Sarkar Champaran, a principal area for Indigo, see Mishra, op. cit.
and obtain a thikadari tenure in return. This gave them all the powers attaching to zamindari and they could enforce the system whereby "if a ryot once received an advance he could very seldom or never clear himself and thus becomes little better than a bond-slave to the factory."

Towards the sixties of the 19th century the raiyati cultivation gave away to neez cultivation in the north Bihar districts. This implied systematic eviction of peasants and use of their labour at sub-market prices. This system was enforced by one of the most powerful combinations ever possible which the peasant had to face: the landlord-planter combine.

The anomalous Indigo-system based on coercion and force drove the peasants to resistance on a number of occasions but it continued up to the early years of the 20th century when competition from artificial dyes reduced its popularity.

In concluding this chapter it would be interesting to examine in passing the credit agencies linked with traditional peasant cultivation and their difference with the credit agencies linked to the new cultivation. In the case of rice, sugar, oilseeds and other usual articles of cultivation, the general run of the peasantry were

60. op. cit.
dependant on advances which were normally made by grain-merchants, rich peasants, and professional money-lenders at a high interest rate. Those who made the advances were concerned with receiving the produce either at low rates, or as debt-repayment and were therefore, interested in exercising surveillance on the crop, so as to prevent pilferage. But this did not mean any control over the production process itself.

The new credit agencies, the Company's government and the Indigo factories both played a different role. The earlier credit agencies were interested in usury. A certain fluidity existed in the relations between the peasants and the moneylenders. In the new set up the advances were just means of gaining control over the production process in such a way that the peasant though technically free operated as a bond slave, from whom all autonomy regarding agricultural decisions was taken away. The peasant came to be linked with the world market, which only affected him adversely. In times of good trading he hardly participated in the profits. When the crash came he suddenly was deprived of the advances to which he had got used, was asked to reduce cultivation, and see the standing crop rot.