

IS DIVERSIFICATION ENOUGH? LESSONS FROM THE AGRARIAN PAST OF BIHAR

Rakesh Ranjan^{*}

ABSTRACT

The lack of sustained growth in agricultural output and deepening of paddy-wheat cultivation cycle over many decades have given impetus to policy prescription towards crop diversification in Bihar. The recent rise in area under fruits and vegetables as well as sugarcane has encouraged those who are observing the state's prospects closely. This essay asks for abundant caution while acknowledging the need and benefits of crop diversification. It explores the colonial agrarian history of Bihar to find similar trends towards crop diversification that did not bring any improvement in the economic conditions of the cultivators involved. The past pattern suggests that the nature of land, labour, credit and produce market was such that it exploited Bihar peasantry to the benefits of those who controlled these crucial inputs as well as channels of international trade. This has important lessons for the policy makers when the path of crop diversification is taken. If the government is serious about increasing crop diversity to boost agricultural growth and incomes of cultivators, then the choice of the cultivators has to be tilted by institutional means.

Keywords: Crop Diversification, Colonial Trade, Agricultural Income, Bihar.

^{*} Assistant Professor, Department of Economics, Shri Ram College of Commerce, University of Delhi, India. Email: rakesh.ranjan@srcc.du.ac.in

INTRODUCTION: GROWTH OF CROP PRODUCTION IN BIHAR AND THE NEED FOR CROP DIVERSIFICATION

The agricultural growth pattern of Bihar has shown some interesting aspects. It has renewed interest of the scholars to have a relook into the potential for realizing the much awaited faster growth of agrarian economy. The importance of the latter cannot be overemphasized given the extremely poor industrial base and the vast yet mostly poorly remunerated services sector in the state. Achieving higher growth rates invariably, in such circumstances, require speeding up of growth in agricultural incomes. One way of achieving it could have been through area expansion. Though there exists some potential for an increase in gross cropped area in some regions of the state, even if any increase in net sown area is impossible. This will largely depend on extension in irrigation coverage as well as drainage facilities. Flood control in the north Gangetic plains will have a key bearing on this potential. However this potential has to be offset against a future decline in net sown area as growing demand for land for non-agricultural usage will reduce land for cultivation. As Bihar is one of the least urbanized state in India, this prospects for substantial decline in net sown area is very real. The current proportion of urban population at just 11.3 per cent of total population according to the 2011 census, and it is likely to rise substantially in the coming decades. Extremely poor performance of the state on the flood control front is likely to impact any effort to increase overall gross cropped area in the state. The data on land use shows that not only net sown area, but even total cropped area has declined despite some increase in cropping intensity (Ranjan, 2020). This structural scenario of stagnant or declining gross cropped area is unlikely to change over time.

Keeping this in mind, the future increases in agricultural incomes could only come through three ways. One, through substantially raising crop yields. Second, through price support ensuring adequate return for the cultivators given the declining trends in farm input subsidies. Third, through diversification in cropping pattern. The growth pattern over the last five decades demonstrates two important aspects. One, although the yield increments over many decades have been there, they are

characterized by a very high degree of year-to-year variation, are just moderate and much below the average achieved by the better performing states. In some cases, they are close to half the level achieved by the best performing state.² This weakness of the state also offers a potential to be tapped in the medium run itself if the yield could be raised substantially. How this could be done is not the question that the author intends to discuss at present.³ Second, over the decades, the cropping pattern has either remained food grain centric or this pattern has even deepened with time. In fact, it would be more appropriate to call it cereal centric with paddy-wheat cycle dominating the crop cultivation practice in the state.

This scenario is likely to give strength to policy suggestions aimed at increasing diversification of the farm economy in general, but of crop cultivation in particular. There is no doubt that the deepening of the “monoculture” in crop cultivation has robbed the state of potential benefits in many ways, arising out of a more diversified crop basket. Stagnation, or very small increments, in farm prices received by the cultivators in relation to costs that have increased substantially in the last two decades, further testifies to the fact that increasing diversification must be attempted at without much delay. Moreover, whatever little price support that was available for the cultivators had gone away after repeal of the Agricultural Produce Market Committee Act in the state in 2006. Contrary to the claims, it has not increased the number of agricultural *mandis*, agricultural market penetration remains poor, and government procurement remaining abysmally small. This has had its adverse impact on farmers' income realization in the state (Kumar 2021).

² If we take the yield levels in the year 2017-18 for comparison between Bihar and the best performing state for the respective crops, then Punjab in case of rice stands at 4366 kilograms per hectare whereas Bihar could obtain roughly half of it at 2447 kilograms per hectare. In case of wheat too Punjab's yield is at 5077 as against Bihar's 2905 kilograms per hectare. For Maize, Andhra Pradesh produced 6912 as against Bihar's 3476 kilograms per hectare (Source: Directorate of Economics and Statistics, Dept. of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture, Govt. of India)

³ A brief discussion of the issue is presented by the author in Ranjan (2020).

Given the current policy status regarding price support, combined with the overwhelming paddy-wheat crop cycle, there is a greater likelihood of scholars emphasizing crop diversification, and wherever situation permits, cultivators themselves aiming at it. A welcome change in this respect is a roughly five percentage point increase in area under fruits and vegetables between 1990-91 and 2015-16 and more than doubling of the area under sugarcane from about 1.5 per cent to more than 3 per cent during the same period.⁴ But there are reasons to be cautious while acknowledging the possible advantages of crop diversification. It is usually expected that crop diversification invariably takes a direction in which “more remunerative” crops are substituted for traditional crops. One cannot fail to admit that the characteristics of being more remunerative itself is mediated through social institutions including, but not limited to, markets. The complex functioning of markets and its appended institutions could very well have contrary outcomes than expected. Institutional arrangements governing availability and usage of land, labour, and credit will certainly impact the overall income accruing to cultivators. Further, not only the nature of markets of these crucial inputs, but of the produce market itself will also have a bearing on incomes of cultivators.

It will therefore, be enlightening to see the future prospects coming with crop diversification in the light of similar episodes from the past. Bihar, being part of the main crop producing region of the sub-continent, has seen changes in cropping pattern in the past too. It will not be the first attempt to change the cropping pattern in the state, if government decides to take some steps in this direction. The history of the nineteenth century Bihar has very useful lessons for any discerning observer. Not only land was transferred to new crops that started appearing significantly in its crop basket, there was an all-round effort to increase penetration of such crops into hitherto relatively isolated territories. Jute, Indigo and Opium during the colonial period are illustrative of this trend. A closer look at this pattern of growing crop diversification will guard us from the pitfalls of an over-simplified narrative

⁴ Source: Directorate of Economics and Statistics, Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture, Government of India.

surrounding it. While admitting that crop diversification is not only beneficial, but it is required urgently in the state of Bihar today, one should also look at the conditions under which this diversification takes place. Whether it is likely to be associated with growing farm income of cultivators - is a question that cannot be taken for granted. The present paper is an attempt to understand this complexity through historical exploration and consequently, conditions for sustained realization of greater value by the cultivators are also suggested.

In the next section a brief historical account of colonial Bihar's agrarian structure, particularly the land tenure system, is presented. In the third section of the paper specific experience of crop diversification is looked at. The fourth section notes down post-colonial developments and institutional changes that are relevant to the issue at hand. This helps us understand the possible similarities and contrasts the present situation with the colonial period. Finally, the constraints towards a sustained movement towards crop diversification and conditions under which it could be beneficial for the actual cultivators is discussed. Relevant policy framework has to take into account these constraints and conditions for any meaningful change in that direction.

THE COLONIAL CONTEXT: LAND REVENUE SETTLEMENT SYSTEMS

Bihar as part of the Gangetic basin has been agriculturally productive since ancient times. The history of the region in the last two and a half thousands of years shows that it has witnessed rise and fall of great empires. The backbone of all such political dispensations of the ancient and medieval era has been agricultural prosperity and trade. Coming close to the recent times, the region also experienced significant growth in trade during the Mughal period. But with the Battle of Plassey in 1757 and Battle of Buxar in 1764 the region fell in the hands of the British East India Company which very quickly built upon this victory to colonize other parts of the country. The pattern of economic development, or rather lack of it, afterwards demonstrate a peculiar transformation. One source of this transformation lies in an attempt by the

British to establish a stable and secure source of revenue that became and remained the largest source of revenue for the colonial government. The motivation for this was not purely economic and there were political factors too, mainly of maintaining the political subjugation. These political and economic factors eventually ensured that agrarian society of the whole country got transformed in a manner that suited the system of surplus extraction to the benefit of the British Empire.

This process however, has both, elements of continuity and elements of change from the past. We cannot fully comprehend the transformation by overemphasizing either elements of continuity at the cost of elements of change, or vice versa. The variations in the system of land revenue collection instituted in different parts of the country testify to the fact that the process was neither smooth nor static. Different historians have discussed and debated the reasons behind these variations and have come to different conclusions. But there is a consensus that historical specificities of different regions and British interests (primarily to maximize land revenue without causing much social political unrest) together shaped the evolution of land revenue system of colonial India.⁵ Three different forms of land revenue assessment and collection came to exist in colonial India. The eastern India (Bengal presidency, of which Bihar was a part) was largely under the system of *Permanent Settlement*, Southern and western India under Madras and Bombay presidency settled under *Ryotwari system*, and north western part came under *Mahalwari system*. United province adopted a modified settlement on the lines of Permanent settlement, a *Temporary settlement* where amount of land revenue could be modified after a certain period (though not frequently, often after many decades) in contrast with the Permanent settlement.

These systems of land revenue collection were not only more systematic than the erstwhile kingdoms ever had, but were instrumental in bringing in entirely new dimensions to agrarian life of Indian populace. First, with definite quantitative

⁵ There is a rich collection of writings on this topic. Some notable are Kumar (1982), Tomlinson (1998) and Habib (2014). A recent addition is a notable text book on economic history of India by Banerjee-Dube (2014).

measures of land and output, the land revenue administration tried to take control of the process of revenue transfer in a way that was far more comprehensive than anything in the past. Second, with fixing responsibilities of collection and payment of land revenue on definite bodies, individuals (in case of Permanent settlement and Ryotwari system) or communities (in case of Mahalwari system) it brought in the most significant change in the land relations of the country. Land now largely became a marketable commodity. Failure to pay the revenue resulted in auctioning of landed *property*, making it transferable between private entities. This had a far reaching impact of dismantling old communitarian ties, between the peasants and non-resident members of upper classes of nobility (different types of lords or overlords), and also between the members of village community. Third, the monetization of land revenue ushered in a *generalized* process of commercialization of agrarian life that was hitherto unseen.

The combined impact of all these changes shaped the future evolution of agrarian India. Bihar, as a part of Bengal presidency, was tremendously influenced by these structural shifts. The system of Permanent settlement ultimately evolved in a system of uncontrolled proliferation of intermediaries between the land revenue administration and the actual tiller of the land. This vastly augmented the rent burden for the lot of actual tillers without benefitting the agrarian system in terms of productive investment. At the bottom it rid the peasantry of any means to productively invest in cultivation, and at the top, it rid the surplus appropriating classes of any incentive to invest in productive uses. This also meant that the expanded network of market exchanges came without channeling surplus into productive agrarian accumulation.

The initial objective of land revenue maximization fulfilled the mercantile interests of the East India Company by providing a sizeable financial surplus to be invested in mercantile operations across the globe, including the slave trade. But with gradual political shift in the home country of the Empire, with the growing influence of the industrial capitalists on matters of state policy regarding colonies and foreign trade, the dynamics of surplus appropriation in India also underwent a structural shift. This

added a completely new dimension to the evolution of Indian economy. With mercantile interests giving way to the industrial interests in the home country, the colonial government in India deliberately pushed trade and tariff policies that eventually destroyed the flourishing handicraft industry of India. Bihar was not untouched from this dynamics. Bagchi (1976) has recounted the extent of loss of handicraft production emanating from Gangetic plains of Bihar.

It is in this context of twin deprivation during the colonial rule - of investible resources in agriculture, and of native industry - that we have to locate the historical backwardness of contemporary Bihar. The new agrarian system, far more comprehensively integrated in the network of world commerce, instead of bringing increased prosperity, divested agriculture of investible resources. The fixity of land revenue could not bring economic incentive to the cultivators as it did in some other country cases, for example Japan in its early phase of economic growth during the Meiji period. There the new land tax system was accompanied with state's decisive role in promoting new scientific methods and investment. In contrast, the *zamindari* system allowed and intensified rack-renting with proliferation of intermediaries extracting and living off land rent. There was no control over this proliferation and the colonial government left the control of land rent entirely in the hands of the parasitic class of *zamindars*. In fact, the situation in Bihar was somewhat similar to the late Meiji, Taisho or Showa period, starting from years just before the First World War, when the agrarian situation in Japan also turned parasitic. The landlords during this period, instead of relying on productivity growth for their income, started relying on their privileges and exercised their pressure to manipulate the government's policies aiming at increasing their incomes- not through productivity growth, but through continuously pushing rice prices up. This has resulted in a prolonged agrarian stagnation in Japan during this period that continued till 1945 (Hayami 1975). Similar elements of parasitic control and disposition of agrarian surplus continued through the entire colonial period in Bihar. A potential that could have been created with the fixing of land revenue was completely destroyed by letting feudal/semi-feudal relations dominate the agrarian life. A large agricultural surplus was extracted by the social elite and disposed of in the most unproductive ways.

Given the *permanent* nature of land revenue settlement, the colonial government couldn't care less about it. It is not the case though that the old landlordism either remained intact. There are considerable evidence to suggest that the entry of *new elites* in the folds of the *zamindars*. Chaudhuri (1982a) meticulously notes down examples from Bihar showing the pattern of new landholding estates. But these were not to change the misfortune of Bihar peasantry as the basic structural features of land ownership and control remained intact.

CROP DIVERSIFICATION IN COLONIAL BIHAR AND CONDITIONS OF CULTIVATORS

Despite the retention of old agrarian relations, Bihar also entered the vast network of colonial trade and commerce. The penetration of commerce into everyday life of Bihar peasantry became increasingly deeper and stronger. This was reflected in the most powerful way by increasing importance of new cash crops. Unlike the north western part where growing commercialization was also through the main food grain crop wheat, Bihar's agrarian landscape was thoroughly transformed by growing mercantilist interests embodied in these new cash crops.

The nineteenth century witnessed increasing substitution of cash crops for traditional food grains. Indigo, jute and mesta, hemp, opium, etc. started appearing in the production basket of the state of Bihar in proportions that were never seen before. In normal circumstances, such developments would be seen as a reflection of a healthy trend of agricultural diversification with growing industrialization. But during the nineteenth and early twentieth century, the primary stimulus for this “diversification” came from channels of colonial trade and commerce. Demand for jute came largely from burgeoning trade volumes of the British manufacturing (and later of continental Europe and the United States) and her dominance over colonial trade. The benefits of increasing demand for jute however, was not accruing to the peasants involved in the cultivation of the crop. It was largely appropriated by the landlords, or moneylenders, and often both. The trade being completely controlled by the British capital did not help much. In fact, the surplus thus generated and

appropriated in jute cultivation often was transferred to mercantile activities to seek further expansion of this colonial cropping pattern given the importance of jute merchants in the network.⁶ British domination of jute industry and trade in India also deepened the dependence of this network on British capital and the surplus was drawn towards the latter.

In case of indigo cultivation, the role of British capital was far more direct and its consequences far more devastating, both ecologically and economically, for Bihar peasantry. East India Company officials directly took control of its cultivation, often forcing the cultivators to switch to indigo plantation substituting for food crops. This was a direct result of a growing need to fulfil the demand of rapidly expanding dyeing industry in Britain- an industry whose fortunes were closely related with the cotton textile industry of Manchester. The abject conditions of indigo cultivators was reflected in many *indigo revolts* that dotted the Eastern Indian agrarian landscape during this period. There is a rich literature exploring the roots of such vast agrarian unrest. Ghildiyal (2010) recounts this episode with a critical eye over the “dominant political economy perspective” and seeks to bring in the “moral economy perspective” to the foreground.

Bihar was one of the important region for opium cultivation during the eighteenth and nineteenth century.⁷ The underlying dynamics of opium cultivation was determined largely through two factors: determination of area under opium cultivation and prices by the government, and integration of opium cultivation in the infamous “triangular trade pattern” involving India, China and Britain, though illicit domestic trading of opium did modify the above dynamics to some extent. In this triangular relation, Britain sought to finance her trade deficit vis-a-vis China (mainly on account of import of tea from China) by using trade surplus of India vis-a-vis

⁶ Sethia, T. (1996). The Rise of the Jute Manufacturing Industry in Colonial India: A Global Perspective. *Journal of World History*, 7(1), 71-99.

⁷ The later part of the nineteenth century witnessed Malwa region in the North-western India emerging as the competitor to Eastern region including Bihar.

China (opium was the most important commodity causing this trade surplus). Strict government control over opium cultivation and trade was thus necessitated from this peculiar arrangement in the British balance of payments. Cash advances made to opium growers by the government incentivized it to a certain extent. This was also different from the case of indigo where the degree of coercion to enforce its cultivation was far greater, though coercion was not entirely absent from opium cultivation. The government exercised control over output mainly through prices at which it purchased opium from the growers. The control over its trade was through a government monopoly.⁸

These are some of the illustrative examples of how despite growing commercialization of Bihar agriculture, despite diversification of agricultural output, it still lacked either the necessary economic resources to invest back in agriculture, or any incentive to do the same. This is not to say that Bihar agriculture remained stagnant in absolute sense. Chaudhury (1982b) notes that there are some evidence of agricultural expansion after the first two decades of Permanent Settlement. But this expansion was modest, mostly arising out of area expansion, and did not involve any improvement in the economic condition of the actual cultivators.

The expansion of commercial agriculture did not create a favourable environment for sustained productivity growth. Bhattacharya (1982) and Chaudhury (1982b) both record emergence and expansion of cash crops in Bihar from the beginning of the nineteenth century. But both conclude that integration of Bihar agriculture in the worldwide network of trade in agricultural commodities and complete domination and control of trade by the British capital effectively divested local agriculturists of any surplus for productive accumulation. Bhattacharya (1982) further notes down that Indian capital could survive mostly in the mercantile channels that too as a strictly subordinated entity. He cites some evidence to suggest that destruction of traditional industry also ensured that the agrarian surplus was diverted to mercantile

⁸ The importance of this item can be gauged from the fact that the colonial government took every effort to maximize its exports to China, despite it was a banned item for trade in China.

and other non-productive domain. The extent of this could be gauged from the following observation made by him:

“The decline of export industries in the first half of the nineteenth century restricted opportunities further. Indian capital was perforce confined mainly to internal trade and unorganized banking, servicing petty commodity production in agriculture and artisanal industry.

...It has been pointed out that according to Buchanan-Hamilton's 1809-13 survey in Patna-Gaya, Bhagalpur, Purnea and Shahabad the percentage of industrial to total population, at a conservative estimate, would be about 18.6; the corresponding figure for that region in 1901, after adjustments to establish comparability of census data was 8.5 per cent... The biggest component in this decline in proportion of population dependent on secondary industry, was the number of people dependent on cotton spinning and weaving; the proportion of that population to total industrial population fell from 62.3 per cent in 1809-13, to 15.1 per cent in 1901.”⁹

Overall it appears that the pattern of revenue settlement under the British rule had a lasting impact on the emerging dynamics of Bihar agriculture. The revenue was extracted ruthlessly even in the backdrop of crop failures and famines. It also led to growth of intermediaries intensifying the rent burden on peasantry. Even the penetration and expansion of commercial cropping did not have a positive impact of productivity growth. The surplus with the peasantry was, at best meagre. The largest part of profit in the commercial system ended up in hands of the merchants and the colonial government. This had left the peasants under continued duress.

The fortunes, or rather misfortunes, of Bihar agriculture during the colonial rule was tied with the vagaries of the international trade on the one hand, and revenue demand

⁹ The estimates of this decline are quoted from Bagchi (1976).

by the colonial government on the other. Even when the revenue demand declined by the late nineteenth and twentieth century in real terms, the wretchedness of Bihar peasantry remained intact. The ups and downs of the international trade- itself a result of instability of the capitalist world order in general, but of British industries in particular- reflected in the instability of prices of commercial crops as well as price of land. Rental extraction remained a favoured and frequently deployed method to rob peasantry of any potential gains arising from favourable movement of prices. There are numerous evidence to show that the landlords switched between sharecropping, fixed produce rent and fixed cash rent as would benefit them when prices fluctuated sharply.¹⁰

Bihar, as a result, inherited a ravaged agriculture from the colonial rule. By the late colonial period agricultural infrastructure in the state witnessed further neglect and decline. On the eve of independence Bihar presented a picture of stagnating agrarian economy, a mass of impoverished peasantry, a rural elite not interested in productive investment, rent and usuary as their preferred method of extracting surplus, and a shattered agricultural infrastructure. A vacillating and rural elite dominated political leadership was an added challenge to turn the wheel towards sustained prosperity.¹¹ This clearly demonstrates that a mere incorporation in the circuit of international trade, consequent commercialization and crop diversity towards cash crops did not bring any agrarian prosperity except for a section of landlords and moneylenders located in rural Bihar as well as traders. A lot of increased wealth filled the coffers of large traders with direct or indirect links with British capital. In many cases, particularly of indigo, cultivation of cash crops went hand in hand with increased pauperization and heightened insecurity of survival. It is necessary therefore, to not assume a direct link between crop diversification and agrarian prosperity.

¹⁰ Chaudhury (1982b).

¹¹ Jannuzi (1974) meticulously notes the reluctant nature of political leadership to reform the agrarian structure. The delayed abolition of *zamindari* and almost absent nature of other elements of land reforms robbed Bihar agriculture of any real opportunity to take lead in the modernization and productivity growth.

POST-COLONIAL AGRICULTURAL DEVELOPMENT

It is true that agrarian transformations that took place in many other states of the country after independence, have by and large remained absent in case of Bihar. But the agrarian scenario cannot be said to be stagnant. While a discussion regarding its agricultural growth is not attempted here¹², a brief exploration of the structural dimension, focusing on land and credit, is in order to fully understand the conditions under which crop diversity could deliver sustainable income growth of the cultivators.

The failure of the state governments to initiate and carry out land reforms in the state is well established.¹³ It is ironical that Bihar being the pioneer state in bringing out land reform legislation failed miserably in its implementation, except for abolition of intermediaries in land revenue collection (*zamindars*). This does not mean that the agrarian structure remained unaltered in the post-colonial period. The failure of the state in transforming agrarian structure through non-violent legislative ways has led the frustrated peasantry to organize itself to claim land.¹⁴ Skipping a detailed account of how did this transformation take place, the author intends to spell out the present picture regarding land distribution briefly through the secondary sources, primarily through National Sample Survey (NSS) data.

The data from the latest 70th round of sample survey (January 2013-December 2013) show that large land holders have virtually vanished from the agrarian landscape. Table 1 shows that less than 6 per cent of households own more than one hectare of land. Their combined share in total area owned has declined drastically from about

¹² The same is presented in Ranjan (2020).

¹³ There is a long list of authors highlighting the abject failure of the state on this front. Jannuzi (1974) is one of the earliest and established work. Though later large volumes were produced to establish an all-round failure of the state on this count. While authors like Bharti (1988) and Chaudhry (1988) give localized accounts of this failure, Yugandhar and Iyer (Eds.) (1993) contain useful and comprehensive discussion on the issue.

¹⁴ Das (1982) is a collection of essays dissecting the dynamics of agrarian movements in Bihar.

82 per cent in 1970-71 to less than 45 per cent in 2013. The overall decline in the share in area owned during this period is true for all individual size classes above marginal holding class.

Table 1: Percentage distribution of households and area owned by size-class of ownership holding in Bihar

Year	Landless		Marginal		Small		Semi-medium		Medium		Large	
	Households	area	Households	area	Households	area	Households	area	Households	area	Households	area
2013	5.33	0.02	89.02	55.06	3.87	21.28	1.46	15.24	0.31	7.92	0.01	0.48
2003			89.40	42.07	7.10	25.29	2.70	18.53	0.70	9.56	0.10	4.63
1992			80.56	28.58	11.10	23.84	6.00	24.45	2.14	18.68	0.20	4.44
1982			76.55	23.96	12.42	22.91	7.79	27.02	2.82	20.22	0.31	5.90
1971-72			71.71	18.20	15.11	23.43	9.15	28.07	3.66	23.63	0.37	6.67

Source: NSS Report No. 571: Household Ownership and Operational Holdings in India, page 56.

In absence of any program of land redistribution by the state, this decline in the share of larger size classes of holdings appears to be a result of demographic factor primarily. Though the importance of land struggles could not be overlooked in reducing the incidence of landlordism.¹⁵ Old fashioned feudal land holdings appear to be either completely broken down or on the verge of disappearing. This should not however, be taken as proof of absence of social and economic control by the rural elite exercised through land. The dynamics of control however, has changed. The role of caste, local governments and capital (often mercantile and usurious variety) have a more pronounced role in exercising its control.

The surplus extraction by way of rent is still significant, but cannot come close to what existed during the colonial period. The incidence of tenancy has declined from the British period, but still remains very high as reflected in the latest NSS survey in

¹⁵ Das (1982).

2013. Leased-in area as a percentage of total area owned was about 31 per cent which is roughly three times of the all-India average.¹⁶ 84 per cent of the total area leased-out¹⁷ and 35 per cent of total leased-in operated area was under sharecropping contract.¹⁸ Persistence of sharecropping indicates the backward character of farming practices and institutions. High incidence of tenancy coupled with much smaller size of the holdings definitely creates heightened problem for the tenants. Whereas the overall rent burden itself could be very high, the problem gets aggravated because of tiny size of holdings. This aspect itself could be sufficient to leave the tenant cultivators without any surplus. They might just be barely surviving with their marginal holdings.

Table 2: Percentage of tenant operational holdings and of leased-in area operated under different size classes

	Marginal	Small	Semi-medium	Medium	Large	All
Operational holdings	28.2	31.3	15.6	5.0	44.6	28.0
Area operated	28.33	26.93	11.98	19.63	31.11	24.98
Source: NSS Report No. 571: Household Ownership and Operational Holdings in India, pages 63 and 65.						

Table 2 interestingly suggests occurrence of “reverse tenancy”. Relatively large percentage of tenant operational holdings of bigger size (the largest being the most pronounced) as well as large percentage of leased-in area operated by them, therefore, do indicate that at least this segment is resorting to cultivation for profit. However, this class of cultivators (if we take large and medium landholdings) are very small in numbers (0.7 per cent of all operational holdings) and operate just 9 per cent of total area operated.¹⁹ Potential benefits associated with this feature in case of Bihar tends to be limited by virtue of distribution of land operated and owned.

¹⁶ NSS Report No. 571: Household Ownership and Operational Holdings in India, page 59.

¹⁷ *Op. cit.*, page 60.

¹⁸ *Op. cit.*, page 66.

¹⁹ *Op. cit.*, page 61.

The problem of expropriation of surplus produced by cultivators through rental charges per household in case of Bihar appear to be disproportionately large because of the tiny size of landholdings. The average size of marginal holdings in Bihar is just 0.25 hectare and overall average for all size classes it is 0.39 hectare.²⁰ Even when the fixed rent in money terms per hectare happens to be lower in Bihar than in states like Punjab²¹, it does not put the former in any advantageous position because of lower yields and small size of landholdings. Disappearance of feudal landlordism in the state could not bring much improvement as a different structural feature turned out to be a formidable obstacle: tiny landholdings with a larger number of parcels per holding, reflecting subsistence nature of these holdings. Further, tenancy remains overwhelmingly unrecorded and unsecure making such leasing-in cultivators “tenants-at-will”. Such tenants will not have any incentive to invest in either land improvement, or any other investment whose return could only be fetched in the long run.

Though there is no direct data on prevalence of usurious moneylending, it is widely expected that with real and expanding penetration of formal credit institutions, usurious moneylending would decline or disappear. But any claims of its disappearance would certainly be far-fetched today as credit availability, particularly for the smaller segment of cultivators, remains fairly difficult. Their access to formal credit is also obstructed by lack of land records as well as tenancy records in case they happen to be tenants. Given the significant degree of tenancy and a recent trends of growing instance of tenancy in the state as reflected between the 48th round and 70th round of NSS, the problem of credit for tenants-at-will cultivators will only be greater, as overwhelming majority of tenancies in the state remain unrecorded. This coupled with the fact that they are largely marginal land operators only add to their incapacity to borrow from formal institutional sources. Thus lack of collateral, extremely poor state of land records, lack of information coupled with bureaucratic

²⁰ *Agricultural Census 2015-16.*

²¹ Author's personal interviews with cultivators in these two states confirmed this.

hurdles and corruption leaves these small operators at the mercy of the informal credit markets. Field interviews have shown that interest rate in the informal credit market could vary between 24 to 60 per cent per annum.

Table 3: Percentage distribution of indebted agricultural households by size classes of land possessed and overall percentage of indebted agricultural households

	Marginal	Small	Semi-medium	Medium	Large	All
Bihar	86.7	10	2.6	0.7	0	42.5
All India	63.6	18.4	12	5.4	0.6	51.9
Source: <i>Agricultural Statistics at a Glance 2019</i> , Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India, pp.-251.						

Table 3 shows that the overall incidence of indebtedness is greater for India as a whole than for Bihar. But the percentage distribution of indebted agricultural households reflects a different picture. In case of India as a whole there is noticeable percentage of indebted households that belong to larger size classes of land possessed (more than 1 hectare of land). This is likely to be a result of borrowing from formal institutions at lower interest rates.²² In case of Bihar, the overwhelming majority of indebted households are marginal land owners. It is also more likely that their source of indebtedness is informal credit market, often usurious. Their loans may also likely to be of unproductive nature (consumption loans, or loans taken on account of certain contingencies- illness, death, marriage, etc.).

Possibilities of crop diversity has to be looked in the present context of Bihar agriculture showing the specific structural features of distribution of landholdings, incidence and characteristics of tenancy, and presence of a vast network of informal credit institutions. If the potential that comes with a more diverse crop basket has to be realized, particularly for the overwhelming majority of tiny land operators, then

²² This is not to say that this segment does not resort to borrowing from informal market. In fact such borrowing may be significant. The only claim here is that in relation to small land operators, their access to formal credit institutions is relatively easier and hence are more likely to borrow from the latter.

some additional conditions should be fulfilled. A brief discussion of these is presented in the next section.

AIMING AT INCREASING CROP DIVERSITY TODAY: CONSTRAINTS AND REMEDIES

Looking at the future prospects of raising agricultural income in Bihar, one cannot possibly deny the urgent need to increase crop diversity. After considering the historical experience of increasing cultivation of cash crops in the state during the colonial period and changes and continuities during the post-colonial period, it is necessary to look at what will really be needed to make cultivators economically prosperous who undertake this risk of moving away from conventional crops providing some food and economic security to a large majority of them. There are some factors that are necessary to facilitate expanding production of cash crops. They may roughly be classified under two categories. First, the factors that may be necessary to facilitate production of these crops with significant yield improvements over time. These are availability of high quality (time reliable, controllable and adequate) irrigation and drainage facilities, seeds-fertilizer-pesticides, and farm implements including machinery. Second, the factors that pose institutional constraints over these. These include storage facilities for agricultural produce; timely availability of adequate amount of credit to meet high production costs; more efficient, cultivators friendly and trustworthy system of crop insurance; high quality transportation facilities (reliable, with temperature control equipment to ferry perishable commodities, better road connectivity); and most importantly easier and reliable market access with price support.²³ Further land distribution and timely availability of labour must be added to the list.

Of these irrigation, drainage and appropriate fertilizer availability is notoriously inadequate in the state. Despite Bihar being one of the high fertilizer consuming

²³ The price support to widen the cover of non-conventional crops may be necessary at least in the initial phases of transition to a much diversified crop basket.

states (in case of N-P-K fertilizer)²⁴, there remains a serious problem of *appropriate* use of fertilizer as well as its timely availability. Over-application of Urea and under-application of others has been a persistent problem in the state. Fertilizer traders often are found to be taking advantage of spike in demand during the sowing season and raising prices above mandated by the government.²⁵ Prices of other material inputs like seeds and pesticides have also grown very sharply which has been noted by scholars as well as by the Commission for Agricultural Costs and Prices (CACAP).

The growing importance of shallow tube wells in irrigation has further compounded the problem of rising costs of production. Use of electricity in irrigation (which happen to be subsidized in most of the states) is meagre. In the year 2017-18, electricity consumption for agricultural purpose was a mere 2.5 per cent of total electricity sold in the state.²⁶ The dilapidated state of canal irrigation and decline of other traditional sources of irrigation (particularly of *ahar-pyne* system) have left the overwhelming majority of cultivators depending on costly tube well irrigation. Rising diesel prices have left majority of cultivators reeling under increased monetary burden. After deregulation of petroleum prices in the country in the year 2010, retail price of diesel has risen by about 120 per cent till date. This would seriously impact the incomes of the cultivators in the state.

Other infrastructural constraints put expansion of cash cropping in jeopardy too. A reliable and supportive ecosystem of non-conventional cash crops would require either good quality storage facilities or similar transportation network, or most likely, both. Bihar is dismally poor in this respect. Relative poverty of the state in the area of reliable storage capacity can be gauged from the fact that its share in total storage

²⁴ *Agricultural Statistics at a Glance 2019*, Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India, page 210-211.

²⁵ Recent field visit by the author in the western part of the state has confirmed this tendency. Local newspapers have widely reported such instances and noticed distress among cultivators.

²⁶ *Agricultural Statistics at a Glance 2019*, Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India, page 221.

capacity in the country stands at a mere 2.58 per cent as on end March 2019 whereas its share in the gross value added in agriculture is about 4 per cent. The state also has close to 4 per cent of total cropped area of the country. It suggests that storage capacity in the state per unit of cultivated area is very low compared to other states. It also suggests that a smaller amount of value of agricultural output passes through storage facilities in the state. The record of the state is particularly poor when it comes to the creation of new storage capacity. Of all the capacity sanctioned in the country, Bihar's share has hovered around just 0.75 per cent in the last many years.²⁷ This shows that the state is likely to remain as one of the poorest in terms of storage capacity. Similarly, the state also lacks good quality transportation network. Though the state is well connected with country's rail network (all regions of the state have train connectivity), the road connectivity of villages from the nearest train stations is poor for most of the districts leaving them where they cannot rely on rail network. Even the rail network does not have facilities where they can handle bulk carriages of perishable commodities without much delay. Given the geo-climatic conditions in the state, it is expected that it has growth potential in the fruits and vegetables category. It has already demonstrated its growth in the recent decades. But it is likely that it will remain limited because of such infrastructural bottlenecks.

Private investment in these areas of infrastructural development is not forthcoming. Therefore the way ahead is provision for public investment. In the states where some private investment has happened in storage facilities, farmers have experienced very high costs as well as some loss of control over their decision to sell their produce if the storage providers are corporate entities that have interests in agricultural trade.²⁸ If established, these patterns will be very similar to what was experienced during the colonial period.

²⁷ *Agricultural Statistics at a Glance 2019*, Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare, Government of India, pp. 174-176

²⁸ Recent farmers' agitation in the country, led by Punjab farmers, has brought this out. Author's field interviews have also found evidence of this experience in Punjab.

The income of the cultivators, if they choose to go for cash cropping, would depend on costs and prices. Important element of costs are costs of seed, fertilizer, irrigation (primarily diesel), transportation, storage on the one hand; and rent of leased-in land, cost of labour and interests on credit on the other. Whether the peasants will benefit from crop diversity will depend on their position in the market network of these crucial inputs. From the past experience it appears that without some kind of price support, they are likely to be either reluctant to move decisively in the direction of cash cropping, or alternatively, they may still get incorporated into this network but without much of economic advantages.

Two important characteristics of rural economy are likely to lead Bihar in a situation mentioned above. One is the landholding pattern where 90 per cent of the cultivators are marginal cultivators. Their relative position in the network of input markets as well as output market is likely to be of subordinated nature. Given that agricultural trade is characterized by imperfect markets, to say the least, they are likely to be dependent on prices *fixed* by monopsonistic buyers. Their desperation to sell in absence of their capacity to store, their dependence on purchased transportation, and immediate need to realize produced value to continue meeting the cash demand of cultivation make them *dependent* on their large buyers. The alternative is to sell independently in the local markets. But the size of the latter limits any significant and sustained growth. Further crop specialization will be adversely affected if cropping is limited by dependence on local markets. The collapse of cooperative agricultural movement has stopped any alternative to this situation to emerge.²⁹ The specific landholding pattern of the state needs special attention as any free market arrangement will leave them without any security to their land tenure and income.

²⁹ It is never suggested that it was strong and vibrant in the past. The experience of Bihar regarding cooperative structures is that it was dominated by the rural elite, marred by corruption and never had the trust of cultivators of small size. It thrived on bureaucratic largesse for whatever period it existed and with gradual liberalization, it has disappeared for all practical purposes. With deregulation of agricultural marketing in the year 2006, they are found to be struggling for their relevance.

Second, despite being one of the surplus labour state in the country, the supply of labour for cropping related activities in rural areas is of much concern for the cultivators. Large scale out migration of labour from the state and absorption in non-farm employment in the unorganized sector, however low paying them may be, has left the cultivators with remaining labour force that is uncertain in its availability.³⁰ Further increasing real wages in the last few years have also increased their costs of hiring.³¹ Again this situation has to be judged in the context of an overwhelmingly marginal character of the peasantry in the state. In fact, a good majority of these marginal landholders are also themselves laboring households, either in the rural economy or in the local non-farm economy. It is unlikely that control over real wages will be a viable or even desirable policy option given that the prevailing wage rates are still less than the minimum stipulated in most of the places. How to still make cash cropping remunerative is the question that the policy makers should be looking at.

In this context it would be important to look at the challenges involved in moving towards cash cropping. The biggest of these would be how to incentivize this transition in cropping pattern for millions of marginal cultivators. A good majority of these marginal cultivators are themselves wage workers, often leasing-in land to produce necessary food grains for survival. Given their insecure position in terms of basic food grain requirements, they try avoiding depending on the market for food grains, and try to produce it instead on a meagre land holding (owned or leased-in).³² The policy maker's choice of cash cropping over conventional food grains will also be a *decision* of the marginal cultivators to move towards risk bearing cash cropping against sticking with more secure food grain production. It is a *choice* between leaving security of own grown food grain for potential profit and remaining conservative with a secure supply of basic means of survival. If the government is

³⁰ All cultivators interviewed by the author in the state's three districts have very forcefully testified to the problem of labour scarcity for agricultural purpose.

³¹ Rural employment generation scheme (MGNREGS) has been the butt of the attack in the recent decades for the rise in real wages.

³² This is because of high degree of unemployment, open or hidden, and resulting precariousness of wage income to cover all expenses related to survival including food.

serious about increasing crop diversity to boost agricultural growth and incomes of cultivators, then the choice has to be tilted by institutional means. Given the structural features of the agrarian economy of Bihar today, it is unlikely that the cultivators will move towards risk bearing cash cropping on their own.

Given these structural features it is likely that some kind price support will remain necessary, at least in the initial phases of a sustained transition towards crop diversity. As mentioned above, deregulation of agricultural produce marketing in the year 2006 has not led to any desirable result. Absence of publically funded infrastructure and the likely time consumed in developing the same over the coming years will necessitate price support. Poor formal credit and insurance cover also will add to this necessity. In absence of price support it is likely that the expansion of cash cropping in the state is likely to be limited at best. Further, whatever expansion that may be likely to come through under the presently given conditions, is expected to further the economic condition of the large players in the trade network related to agricultural input and output markets rather than that of actual cultivators. In absence of large scale public investment and creation of transparent and accountable institutions governing market transactions that are not biased against the actual cultivators,³³ the future prospects of them, if involved in cash cropping, is not likely to be very different from their colonial ancestors. Only the players and their relative strength might be different this time. The future potential of the state in reaping the benefits of crop diversity depends therefore, very crucially, on the state's willingness to put necessary efforts and capital to create a different context than what prevailed in the nineteenth century Bihar.

³³ Present arrangements of contract farming is an example of how the *fine prints* of the contract could be heavilt biased against the cultivators vis-à-vis corporate entities.

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