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INVESTMENT ON FARM AND CAPITAL FORMATION IN AGRICULTURE IN BIHAR

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Economic growth in any country or region is measured in terms of the increases in income per head which is generated by the interaction of the factors like resources, capital, labour, changes in technology, etc. The study of the economic growth is related to the movement of population, income and investment. The scope of the present study is limited only in estimating the overall investment and capital formation in agriculture proper in Bihar. The exhaustive data of private investment in agriculture are not available through any realistic survey for the State of Bihar. Attempts have however been made from time to time by different authors to obtain the gross estimate of investment in the First and Second Plan periods. Recently, Lall and others have given the estimates of investment in the First and Second Plan periods.

The investment in the agricultural sector and capital formation will have to be studied in the background of the agro-economic status of cultivators. Out of the total population of 46.46 millions in the State, nearly 92 per cent live in the rural sector and 86 per cent of the population completely depend on agriculture for their main source of livelihood. According to the All-India Agricultural Labour Enquiry Report of 1956-57, the pattern of distribution of agricultural households is 61.22 per cent possessing land and 38.78 per cent without land. Thus the scope of investment in agriculture through private investment will be limited to the three-fifths of total agricultural labour households possessing land. The remaining two-fifths of total agricultural labour households will not directly contribute to capital formation.

It may be noted that nearly 78.2 per cent of total owned holdings are of sizes less than 5 acres having nearly 34.6 per cent of total cultivated area. These holdings which are below the average farm size can hardly be expected to produce higher output to generate sufficient fund for investment. The remaining farm holdings with more than 5 acres in size (21.8 per cent) possess nearly 65.4 per cent of total cultivated area and offer scope for making savings after meeting the labour and material charges. These may be expected to contribute to capital formation.

The agricultural sector is the most disorganised one and the information on current farm practices and holdings according to sizes and regions are not available in detail. But reliable and exhaustive data for the public sector investment in agriculture proper are available. During the First Plan, the total outlay on agriculture and community development was Rs. 16.04 crores or an average annual outlay of Rs. 3.21 crores during the quinquennium. During the Second Plan, the total outlay in this sector was estimated to be Rs. 54.87 crores or an average annual outlay of Rs. 10.97 crores during the quinquennium. The

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N.B. : The following publications are made use of in the preparation of this paper : (i) Five-Year Plans for Bihar; (ii) Report on the Estimation of State Income of Bihar; (iii) "Bihar Agriculture in Two Plans : Study of Growth," R. B. Lall and T. K. Roy, ***Agricultural Situation in India***, Vol. XVII, No. 7, October, 1962.

total outlay during the Third Plan is anticipated to be Rs. 82.49 crores which means an average annual outlay of Rs. 16.50 crores during the period. But the outlay in any plan includes also the salary and other such expenditure along with the current expenditure on developments. Valid information for working out the investment component of this total outlay is lacking. However, during the Second Five-Year Plan, the investment component of total outlay in agricultural development was approximately estimated to be 60 per cent of the total outlay. On the basis of this yardstick, the public sector investment components are estimated to be Rs. 9.65 crores, Rs. 32.90 crores and Rs. 49.49 crores during the First, Second and Third Plan periods respectively. The average annual investments in the public sector during these three Plan periods, thus work out to Rs. 1.93 crores, Rs. 6.58 crores and Rs. 9.90 crores respectively.

Because of the paucity of reliable data either at the Government or at other levels relating to the investment in agriculture by private sector, it is difficult to evolve a straight-forward method of estimation. However, while discussing the investment pattern during the Second and Third Plan periods, the Reserve Bank of India estimated that investments in agriculture and community development for the country as whole during the Second Plan were Rs. 160 crores in the public sector and Rs. 675 crores in the private sector. This means that the investment of the private sector is a little more than four times that of the public sector. This yardstick of the ratio of public and private sector investment may also be applied for Bihar and on this basis the public sector investment in the Second Plan may be taken as one-fourth of that of the private sector. The private investment works out to Rs. 131.60 crores approximately during the Second Plan.

The average gross area sown in Bihar was 248 lakh acres during the First Plan and 251 lakh acres during the Second Plan period and is expected to be 275 lakh acres during the Third Plan period. The private sector investment per acre works out to Rs. 10.5 only during the Second Plan period. There is a heavy dependence of the population on the cultivated area of the State, being nearly 2.5 per acre. The strain that the agricultural sector has to bear is tremendous. In this background, it is quite probable that the private sector investment might be low, being only Rs. 10.5 during the Second Plan period. However, this figure may be used to work out the total private sector investment in agriculture during First and Third Plans, in absence of any other valid data on the per acre private sector investment. The pattern of investment may be assumed to remain, more or less, same over a decade or so. The monetary changes in the price level are also taken into account. The general rise in the price level during the Second Plan period is approximately 30 per cent over the First Plan period and that during the Third Plan it is anticipated to be 25 per cent more over the Second Plan period without taking into account the sudden rises in the price level in recent days.

On this basis, the average per acre investments during the First and Third Plan periods work out to Rs. 8.1 and Rs. 13.1 respectively. Thus the annual rate of investment during the First, Second and Third Plan periods works out to Rs. 20.09 crores, Rs. 26.32 crores and Rs. 36 crores respectively. The total investment in the private sector in agriculture during the three Plan quinquennia is estimated to be nearly Rs. 100.45 crores, Rs. 131.60 crores and Rs. 180 crores respectively at constant prices.

It is now possible to frame an idea about the overall investment both in public and private sectors. The total investment in the First Plan works out to Rs. 110.10 crores or Rs. 22.02 crores per annum during the First Plan quinquennium. Similarly, the total investment during the Second and Third Plan periods works out to Rs. 164.50 crores and Rs. 229.49 crores, and the average annual investment being Rs. 32.90 crores and Rs. 45.50 crores respectively.

The average annual investment during the First and Second Plans is nearly 7 per cent of total gross value of output in agriculture. Data regarding savings and capital formation through private investment in agriculture are completely lacking. The capital formation created or expected to be created in the different Plan periods through execution of such programmes like land reclamation and soil conservation, construction of farm buildings, roads and fencing, distribution of agricultural implements, utilisation of irrigation water, etc., may be estimated at the public sector. The investments for the private sector are not available. As the major proportion of farmers in Bihar have holdings below the average size, there is hardly any marginal surplus of farm receipts left for further investment towards capital formation after payment of labour charges including family labour for the maintenance of the farmers at the subsistence level, at least after incurring minimum material input costs. We have assumed here that the capital formation through investment at the private sectors is not appreciable. The investment of the public sector under different items during the three Plan periods is shown in Table I.

TABLE I—DISTRIBUTION OF CAPITAL FORMATION IN DIFFERENT PLAN PERIODS

(in lakh rupees)

Items	First Plan	Second Plan	Third Plan
1. Land reclamation and soil conservation	15.0	153.0	150.0
2. Farm buildings, roads and fencing and agricultural implements and equipments	33.5	416.0	680.6
3. Irrigation (major and minor)	1218.0	2336.0	4198.0
Total	1266.5	2905.0	5028.6
Average Annual	253.3	581.0	1005.7

It will be seen from Table I that the percentage contribution towards capital formation through irrigation is very large. The average annual capital formation is Rs. 2.54 crores, Rs. 5.81 crores and Rs. 10.06 crores respectively during the First, Second and Third Plan quinquennia. An estimate of capital formation for the year 1953-54 was worked out by the National Council of Applied Economic Research in the Techno-Economic Survey of Bihar. The average estimated figures of capital formation during the First Plan and that given in Techno-Economic Survey are more or less of the same order. The proportion of annual capital formation was only 1.0 per cent of the total gross income from agricultural sector in 1955-56 and 1.6 per cent during 1960-61.

The per capita income for Bihar is lower than that of other States. It has been estimated as Rs. 156 in 1955-56 and Rs. 189 in 1960-61 at 1948-49 prices, the corresponding per capita income for all-India being Rs. 268

and Rs. 293 respectively. The annual gross value of output per acre from agriculture proper is also very low and works out to Rs. 109 in 1950-51, Rs. 138 in 1955-56 and Rs. 162 in 1960-61 at constant prices. Thus the overall investments per acre constitute 7 per cent of the gross value of output per acre at the end of the First Plan and 7.4 per cent at the end of the Second Plan. During the Third Plan also it is expected that the proportion between the investment per acre and the estimated gross value of the output per acre will be more or less same. The rate of investment per acre appears to be too low to increase the rate of productivity in agriculture. Again the proportion between capital formation and investment in agriculture in the three Plan periods works out to 11.5 per cent, 17.6 per cent and 21.9 per cent respectively. Unless the savings through private investment in the rural sector is increased considerably, any addition of investment in public sector alone will hardly be able to increase the output considerably. All the possible fields of investments in agriculture either at the public sector or at the private sector and the harmonious utilisation of labour and material resources need to be fully explored during the Fourth and successive Plans so that the agricultural sector can contribute significantly to the national income of the country and meet the demand for agricultural commodities both for increased internal consumption due to higher rate of growth of population and for higher exports.

PACE AND PATTERN OF CAPITAL FORMATION ON FARMS*

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In India, the rate of industrial growth will largely depend on the quantum of surpluses made available by agriculture, which by far is the most important industry of the country. Before 'agriculture' could do so, it has itself to make a great leap forward. The pace and pattern of capital formation in agriculture therefore holds the key not only to agricultural but also industrial growth.

EXTENT, PACE AND PATTERN OF CAPITAL FORMATION

The value of capital stock held at two points of time (1950-51—1962-63), at constant prices, was calculated for a sample of 30 farms located in Block Swar in the Rampur district in Uttar Pradesh, belonging to different size-groups of holdings.[1] The total value of stock held in January-February,

* The paper is based on a study conducted by the author and Mr. M. L. Sudan, now in the Department of Economics, National Academy of Administration, Mussoorie, on behalf of the National Institute of Community Development.

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1. The selected farms were grouped under four size-groups, *viz.*, small (less than 5 acres) medium (5-10 acres), big (10-20 acres) and large (above 20 acres) and the number of farms taken from each size-group of holding was roughly in proportion to their total number in the population. More representation was, however, given to the bigger farms which have made visible forms of capital formation but were too small in number to come into the sample otherwise. In presenting aggregates, the magnitude was deflated to the extent we over-weighted such farms. The sample of farms selected for study was fairly representative of the village and the district where these were located. The enquiry was conducted personally by the author and one of his associates by the survey method.