

Rationale of land use in the Indian Economy

Land is the chief source of employment¹ and income² in the Indian Economy and the situation is unlikely to undergo any significant change for several decades to come, despite the best of efforts to accentuate the process of industrial development. The fate of the Indian economy hangs on the nature of agricultural performance. Supply of food, industrial raw materials such as cotton, jute, oil-seeds, tobacco, sugar-cane etc., and the supply of certain important agricultural commodities to export³, to earn valuable foreign exchange are the key levers which exercise immense influence on the general tone of economic activity in India. Two people out of every three make a living out of agriculture roughly half the national income accrued from farming and allied activities and half of foreign trade is there in agricultural commodities. Besides, agro-based industries such as manufacturing of sugar, cotton and jute products, vegetable oils, tea, coffee etc., depend directly on the behaviour of agricultural production. It is, therefore, hardly possible to exaggerate the importance of land and the principal⁴ factor of production in the supply of agricultural commodities. The rationale of land-use in India, thus, assumes the highest significance. The health and welfare of the entire Indian economy turns on the nature of allocation of land between different rival products. The nature of land-use is determined partly by

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1. "Of the total population of 439.2 million in 1961, the working population was 188.4 million/about 43.0%. Agriculture provided employment to 135.6 million—72% of the working force". Farm Management in India, A study based on recent investigations—April 1966, Directorate of Economics and Statistics, Department of Agriculture. .Government of India.—Chapter I.
 2. In 1963-64 the contribution of agriculture to the national income at current prices was estimated at 47.1% as compared with 48.7% in 1960-61." Ibid as '1' above, page—4.
 3. "Agriculture accounts for over 50.0% of India's export-trade." Agricultural Development, problems and perspective, Department of Agriculture, Ministry of food and Agriculture, Government of India. Chapter I.
 4. This is not to ignore or minimise the importance of other factors such as Labour and various other inputs responsible for agricultural production but to high-light the role of land as a basic factor the scarcity of which is of a permanent nature.

natural geographical conditions and partly by the activities of the human agency. Growing pressure of population makes human agency an important factor to reckon with, in the analysis of land utilisation of India.

The total geographical area is classified into different categories on the basis of the nature of land utilisation as in the following table :—

Classification of area in India

(Area in '000' hectares)

	1950-51	1955-56	1960-61	1961-62	1962-63
1 Area under forest	40482 (14.2)	51343 (17.6)	55769 (18.7)	54542 (18.2)	55448 (18.5)
2 Area not available for cultivation	47517 (16.7)	48396 (16.6)	49997 (16.7)	50441 (16.9)	50308 (16.8)
3 Land put to non-agricultural uses	9358 (3.3)	13920 (4.8)	14329 (4.8)	14700 (5.0)	15065 (5.0)
4 Barren and uncultivable land	38159 (13.4)	34476 (11.8)	35608 (11.9)	35691 (11.9)	35243 (11.8)
5 Other uncultivated land exclusive of fallows	49446 (17.4)	38895 (13.3)	37353 (12.5)	37255 (12.5)	36687 (12.2)
6 Permanent pastures & other grazing lands	6675 (2.3)	11473 (3.9)	13900 (4.6)	14109 (4.7)	14027 (4.7)
7 Land under misc. tree crops and groves not included in net areas sown	19828 (7.0)	5885 (2.0)	4363 (1.5)	4505 (1.5)	4589 (1.5)
8 Cultivable waste	22943 (8.1)	21537 (7.4)	19090 (6.4)	18641 (6.3)	17971 (6.0)
9 Fallow land	281124 (9.9)	24127 (8.3)	22586 (7.6)	21655 (7.2)	21225 (7.1)
10 Fallow land other than current fallows	17445 (6.1)	12544 (4.3)	1404 (3.7)	10487 (3.5)	10263 (3.4)
11 Current fallows	10679 (3.8)	11583 (4.0)	11482 (3.9)	11168 (3.7)	10962 (3.7)
12 Net area sown	118746 (48.8)	129156 (44.2)	133157 (44.5)	135352 (45.2)	136244 (45.4)
13 Total reporting area	284315 (100.00)	291917 (100.00)	298862 (100.00)	299275 (100.00)	299912 (100.00)
14 Area for which no return exists	42438 (13.0)	34836 (10.7)	27891 (8.5)	27478 (8.4)	26841 (8.2)
15 Total geographical area	326753	326753	326753	326753	326753

Source : Agricultural Resources of India, p—34-35, Indian Agriculture in Brief. Directorate of Eco. & Statistics Govt. of India,

The total geographical area of India is estimated to be a little less than 327 million hectares of which 27 million hectares are not reported in the sense that information about the nature of the exact use of this area is lacking. The nature of utilisation of the remaining 300 million hectares is reported from time to time and the table above shows the classification of the reported area into various categories. In point of fact, the whole area of land could be classified only into two categories—(a) land which in some way or the other has been a source of wealth and income and (b) land which so far has remained 'barren' in the economic sense. Items '2', '4' and '5' fall into the latter category and together, they comprise 122,238 million hectares—40.8% of the total reported area. The rest of the area which comes to 177,674 million hectares—59.2% of the total reported area, should be making some contribution or the other to the national income. The area under forests, the land utilised for roadways, railways, buildings, play-grounds etc. (non-agricultural use), permanent pastures and grazing land, land under tree crops and groves and land which is reported to be fallow can be treated as a direct source of income to the nation. The so called fallow land is cultivated once in a way and it can be cultivated on a regular basis, given adequate supply of the complementary factors of production.

There is nothing like an over-all plan of land utilisation in the country. The pattern of utilisation revealed by the table is the outcome of mainly geographical reasons on the one hand and the crop-preference of individual farmers who own land and hence are free to exercise their own choice regarding the use of their own plots of land. Management of forests and the management of all land whose ownership does not specifically rest in private individuals falls within the sphere of activity of the State government that exercise jurisdiction over the area since agriculture is a state subject. The State governments have to decide their own forest policies or pasture-land policies or policies with regard to the use of public fallows and the private owners of land including the protected tenants decide what crops to grow. Now, the precise issue is "Do we see any thing like a rationale in the pattern of land-utilisation in India? Is land-utilisation done in accordance with the most urgent needs of the country?"

Two specific points need to be taken into account—(a) distribution of land for cultivation and non-cultivation purposes and (b) The nature of distribution of cultivated land over various types of crops—i. e., the cropping pattern.

In the year 1962-63, the net sown area came to a little more than 136 million hectares out of the total reported area of 300 million hectares—

45.4%. The total population of the country stood at 439.2 million and hence, per capita cultivated area came to a little more than 0.3 hectares. The number of agricultural workers 131 million.... 100 million cultivators and 31 million landless labourers. Per cultivator land cultivated stood at 1.36 hectares. With growing pressure of population, an ever expanding size of the labour-force and an exceedingly slow growth of employment opportunities in the known agricultural sector of the economy, more and more of people would be compelled to see a living out of land. There would thus be a growing rivalry between extension of cultivation and the demand for land for non-agricultural purposes. Ever since the commencement of our plans, the net sown area has gone up by nearly 17.5 million hectares and there is a visible decline in fallows. The demand for land for non-agricultural purposes as well has gone up from 9.3 million hectares to 15 million hectares. There has also been a growth in the area under forests because of the intensification of the campaign for afforestation. Afforestation is an urgent necessity not only because of the value of forest-products but also because of the necessity to devise ways and means to stop soil-erosion in heavy rainfall areas.

With the growth of pressure of population and rising demand for agricultural products particularly due to a high income-elasticity of demand for food, there would be a tendency to bring under cultivation even the sub-marginal areas and to intensify cultivation even beyond the limits of equality between marginal costs and marginal returns. Generally the input of the labour of members of the family, cultivating a certain area goes unaccounted for, and thus, submarginal lands also are utilised. Land scarcity being of a permanent nature, it is rather difficult to stop submarginal cultivation, unless there exist plenty of opportunities in the non-agricultural sector for the employment of labour. The general pattern of land-utilisation in India is determined by the excess supply of labour in the labour market, the lack of employment opportunities outside the agriculture and the need to seek a subsistence some how, even out of submarginal cultivation, capital scarcity makes intensification of cultivation a rather difficult task and thus, land and labour remain the principal factors in the struggle for existence, the general pattern of land utilisation is thus largely determined by the exigencies of the economy in terms

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5. Indian Agriculture in Brief, Directorate of Economics and Statistics, Govt. of India page 948.
 6. T. H. Schulz holds that farmers world over are guided by considerations of costs and returns—see *Crisis in World Agriculture* by Schulz T. H., Ann Arbor, The University of Michigan Press, 1964. The same opinion is voiced by Edith H. Whethaw in the *Economic background to Agricultural Policy* (Cambridge)

of growth of population, scarcity of capital and the universal inevitability of underutilisation of labour mainly due to want of complementary factors of production, especially due to shortage of enterprise.

II

Apart from the problem of land-utilisation in general, there is the more significant problem of allocation of land to various crops done by the land-owners of the cultivating tenants as the case may be. How do these people decide what particular crops to grow out of the immediate alternatives which are open to them, taking into account soil fertility, availability of water and other factors of production? Is there any thing like a rational choice? If so, what is the rationale? The choice of crops is influenced by a complex of considerations that weigh with the farmers. The nature of these considerations can, perhaps be inferred on the basis of the actual pattern of cropping in the Indian economy over a certain number of years representing the general trend. The table below gives the average cropping pattern for 1959-60 to 1961-62.

The average cropping pattern in India⁷ 1959-60 to 1961-62

<i>Crop</i>	<i>% to gross sown area</i>
Rice	22.16
Jowar	11.82
Bajra	7.29
Maize	2.85
Ragi	1.66
Wheat	8.65
Barley	2.16
Gram	6.34
Tur	1.59
Sugarcane	1.55
Cotton	4.97
Jute	0.44
Ground nut	4.30
Sesamum	1.11
Mustard	0.79
Linseed	0.89
Castor seed	0.34
Chillies	0.42
Potatoes	0.24
Tabacco	0.26
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Total for 20 crops	79.86
Other crops	20.14
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	100.00

7. Source : Farm Management in India, Ibid '1' Page—9.

The cropping pattern reveals a striking preference for food-crops which account for more than 75% of the total cropped area. Three-quarters of sown area is there under cereals and pulses. Among food-grains, millets occupy the pride of place with 23.65% of the total cropped area. The next place goes to rice which accounts for 22.16% of the area and, wheat and barley together account for 10.81% of the area. Pulses account for the rest of the area under food-crops. Even sugarcane and oil-seeds for edible oils should come under the category of food-crops. Fruits and vegetables do constitute food-crops. Cotton, jute, tobacco etc. are some of the non-food crops. It seems thus, that land utilisation in India is a gigantic country-wide effort to raise food crops and yet, our food-problem remains stubborn, stiff and staggering.

How to account for such a huge area—23.65% of the total cropped area being allocated to millets like Jowar, Bajra etc.? This is mainly due to the fact that the range of choice open to the farmers is extremely narrowed down over vast area by the undependability of rain-fall non availability of other sources of water supply. They are constrained to grow only such of the crops as can be grown with meagre supplies of water. Given a certain area of land to cultivate the nature of utilisation of land for raising particular crops is determined primarily by the availability of complementary factors of production. The cost of complementary factors is of decisive significance. All inputs other than labour are extremely inelastic in supply and the demand for them being almost unlimited, prices of non-labour factors touch the highest of peaks. The cost of tools and implements, fertilisers, irrigation equipment, insecticides, means of transportation etc. and the cost of raising of finance (interest rates for various kinds of loans) are so prohibitive that there is no possibility of a radical change in the cropping pattern, unless the cost-structure becomes favourable to the farmers. The supply of inputs other than land and labour must become more abundant than what they are, in case a change in the cropping pattern is to be brought about.

Any change in the existing pattern is meaningful only if it is a change for the better output-input ratios of alternative crops—opportunity cost ratios, in the existing situation are not likely to be better than what they are for millets. Diversion of land from one use to another would be justified only if the yield from the other crop is better either because of better physical productivity or because of better prices for alternative crops. These considerations do weigh with the farmers.

Apart from these considerations of costs and returns, farmers in general and small farmers in particular seem to be in favour of taking no uncertain chances with regard to food and fodder. They would raise

enough food for themselves and fodder for their animals as far as possible on their own farms. This is particularly true of small subsistence farmers who don't have much of a surplus to sell unless it be out of distress. Big farmers with spare land for non-food crops prefer to produce for the market and with them price considerations weigh much more than with the small farmers. Some small farmers who produce exclusively commercial crops do bother themselves about costs and returns. The conclusion is clear. Mass cultivation of millets is an index of a dire struggle for a difficult existence and in the present stage of development, it appears to be the most rational course to pursue.

We have to account, now for the area under rice and wheat. The area under rice is a little less than the area under millets and that under wheat and barley is about half the area under rice. Conditions of soil, climate and rainfall influence the choice of rice and wheat in the same way as in the case of preference for millets in the dry areas. The rationale of such a large area being allocated to rice and wheat would be there in the maximum farm-business-income out of these crops i. e., relatively better farm-business-income from all other competing alternatives. If wheat cotton and sugar-cane can be grown on more or less the same type of soil and in the same situation of supply of other factors, which of the three could possibly yield the maximum farm business income? Similarly, if rice and jute have to compete with each other because of the scarcity of cultivable land, which of the two would be more profitable? Economic efficiency would demand adoption of the most profitable of crops when we look at things from the individual cultivator's view-point.⁸

There is reason to believe that farmer's choice of crops is considerably influenced by the relative gain out of competing crops which can possibly be grown in a given set up. Recent changes in the area under some of the principal crops and the price-changes over the same period present a striking correlationship. The following table illustrates the nature of the correlationship.

Index numbers of area under crops in India:—⁹

Base : Agricultural year 1949-50 = 100

	1952-53	1956-57	1960-61	1961-62	% + over average 52-53-54-55
Food grains	103.2	112.5	114.6	116.7	1.10
Non-food grains	46.2	134.4	139.2	146.0	2.88

8. "From the stand-point of society, resources need to be allocated in such a way that, with proper consideration of transfer costs, marginal productivities of the resources should be equal between different technical units within a farm and between farms, industries, regions and overtime". Farm Management in India. A study based on recent investigations, April 1966, p—73.
9. Growth rates in Agriculture, Economic and Statistical Advisor, Ministry of Food and Agriculture. Govt. of India P-70, and P-202.

Index numbers of whole sale prices¹⁰

1952-53=100

Food-grains	100	96.2	98.8	99.8
Industrial raw materials of agricultural origin	100	116.8	158.5	134.7

It is most remarkable that the area under non-food grains (sugarcane, cotton, jute etc.) increased over the period more than twice as fast as the area under food grains and the explanation for this phenomenon seems to be in the index of prices. Rising prices of industrial raw material provided the necessary incentive for more of area under non-food crops. The biggest increase was there in the area under sugar-cane at the rate of 6.16% per annum and next comes ground-nut with a growth rate of 5.05% per year, followed by jute with 3.74%. Wheat, maize and gram show the highest rates of growth in terms of area from among the group of food grains with 3.07%, 2.88% and 2.47% increase in area every year."¹¹

The explanation for different rates of growth of area under different crops seems to be in differential costs and returns and it shows that the Indian farmers are governed by business considerations as much as the entrepreneurs in the non-agricultural sector of the economy. That, a huge area—as much as 75% of cultivated area, is still there under food-crops in spite of a possible big gain likely to accrue out of a diversion of land from food-crops to non-food crops can be perhaps, explained in terms of the preponderance of “small scale subsistence farming on the one hand and the rigidity in the supply of non-labour factors of production on the other. Nearly 63.0% of the operational holdings are less than 5 acres in size and nearly 82.0% less than 10 acres.¹² About other factors such as availability of finance, the cost of finance, availability of capital equipment, fertilisers, water etc. it is well known, how hard and rigid is the position in the Indian situation. Small-farmers with meagre resources are forced to grow food crops in spite of the relatively better returns out of other crops. It would not be unreasonable to presume that there would certainly be a diversion of most of inputs including land in favour of non-food crops if the differences in relative returns

10. Economic Survey, Govt. of India, 1965-66, Appendix, Statistical Table—5.1, Index Number of Wholesale Prices.

11. Ibid '9' P-202 and also, Report on Currency and Finance, R. B. I. 1967, Part-III, Statement.6, Area and production of 'Agricultural commodities.

12. Ibid '1' P-8.

continue to persist and it poses a big threat to the solution of our basic problem—namely 'FOOD'. Big farmers already concentrate on profitable lines of production and if the same tendency continues as is likely to, our food problem would always remain with us. How are we to induce our farmers to grow more of food, when the gain out of other crops is incomparably better? Zonal restrictions and controlled prices make the problem much worse by imposing further strangulation of the necessary economic incentive to grow food.

It is clear from the discussion done so far that there is no over-all rationale of land-use in India consciously and deliberately planned out, to achieve vividly foreseen ends. The pattern that has evolved out of historical circumstances is not altogether meaningless either, though it leaves a lot of room for dissatisfaction with the existing state of things. Want of care and thought can possibly do incalculable harm to the soil and convert blooming gardens into desperate deserts, dreary and dreadful to the future generations. It is high time, we appreciated the need for some sort of a control plan to organise the use of land in the best interest of the farmers and the rest of the economy. Central planning of land-management is an exceedingly difficult task and it is almost foredoomed to failure as is amply evidenced by the Russian and Chinese examples. Reliance on the manipulation of the market to provide the necessary incentives is inevitable. We have to depend on 'Planning by Inducement' and not on 'coercive planning' to achieve the necessary socio-economic objectives on a long-term basis. The market is all likely to be the main force influencing the patterns of land-use so far as private plots of land are concerned and hence the relative price-structure of various agricultural commodities is likely to exercise the profoundest influence on land-use planning on the micro-basis. Production for the market is likely to be a more and more important factor to reckon with, with the replacement of subsistence cereal-farming by farming for the market. The conclusion that emerged is that rationalising the relative price-structure of agricultural commodities is a necessary precondition to induce farmers to follow a certain pre-planned pattern of land-use. How to rationalise the relative price-structure is a big issue by itself and all that we can indicate here is the impact of the price-structure on the land-use planning. Land is bound to be diverted from the less paying to the more-paying crops with the advance of the exchange economy in place of the subsistence economy and there is, therefore, every possibility of absorption of resources including land by commercial crops. Consequently, food supply is likely to remain precarious adversely affecting the health and welfare of the people, especially, in the face of a growing population because food-crops pay less in comparison with the other crops.

Land-use planning with regard to land that belongs to public authorities has also to be organised to the best advantage and to determine what is really the best use, comprehensive studies have to be undertaken to find out the salient features of the present pattern and to suggest further improvements. There appears to be no effective sort of any plan at present in relation to the needs of the people. The 'Natural Resources' division of the Planning Commission can organise the necessary investigations to explore the present use and find out possibilities of rationalisation.

H. G. Kulkarni
