



CROPPING PATTERN IN TAMIL NADU AN ECONOMICS ANALYSIS

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ABSTRACT In a predominately agricultural economy, the overall rate of economic growth depends to a very large extent on the rate of growth in agriculture. The need of enhancing agricultural production is very great and very urgent at present. The present study has examined the cropping pattern of Tamil Nadu state with a view to improve the return per unit of cultivated area that the farmer receives. It was found that the per hectare return is low at present which is partly due to the relatively low prices prevailing in Tamil Nadu state compared to other states in India and partly because of the cropping pattern which has a large representation of crops that bring low returns compared to other crops.

KEYWORDS : Agricultural Economy, Cropping Pattern, Economics Analysis and Agricultural

1. Introduction

In a predominately agricultural economy, the overall rate of economic growth depends to a very large extent on the rate of growth in agriculture. The need of enhancing agricultural production is very great and very urgent at present. Agriculture being the core of the national plans effort and farmers participation in the developmental activities is of basic and pivotal importance and secondly, the past experience regarding their response to developmental stimuli being much below expectations; a study in their sector may be useful in many ways. It will help, on the one hand, in explaining the causes of the existing cropping pattern, in understanding the reasons for its rigidity and inflexibility and in appreciating the, whys and how's of farmers conservative outlook and their suspicious behavior and adopting agricultural innovations. On the other hand, it will be helpful in suggesting a way out, i.e., in formulating proper incentives for production and crop adjustments, for resource allocation, and thus for bringing about ultimately the desired production pattern and speedy execution of the various programmes for increasing agricultural production. In taking up improved farm practices, some of the farm resources become extremely limited. If these resources are not enhanced, then improved techniques may not turn out to be economical and effective in increasing farm production. These limited farm resources thus have to be increased in a selective manner so that capital formation in agriculture is not only accelerated but also rationalized in a manner that investments are made according to the marginal productivities of the resources. Production and farm incomes can thus be increased through better management of farm resources and rational farm investments. Generally speaking farmers use farm resources in proportion to their availability and not in ratios, which would optimize the production or minimize the cost at a given level of production. To quote a few examples, generally a farmer would apply a given quantity of fertilizer to a much larger acreage than the area for which it would form an optimum dose. Again attempt is generally made either to put whole of the available land under cash crops without allocating some land for food crops or in some cases too much land is kept fallow. Improved farm practices are not generally followed in entirety but below optimum in respect of some critical inputs. It is therefore, essential that the available limited farm resources should be optimally allocated among different farm enterprises so that the farm incomes are maximized. This can be achieved through production planning involving judicious allocation of limited farm resources among alternative farm enterprises. Many tools of farm management analysis are used to provide an answer to this problem but more refined techniques of Linear programming technique and Cobb-Douglas production function are used in this chapter as analytical tools to determine the potential increase in farm income. Before examining the locative efficiency and profitability of the select crops in select districts of Tamil Nadu, it is necessary to have the socio-economic characteristics of the study area, which is the field of this intensive study. This chapter is divided into three sections. The first section presents the economic and social characteristics of the sample

households cultivating select eight crops in select districts of Tamil Nadu. In forthcoming sections, maximization of profit through changes in cropping pattern and cost of production are discussed subsequently [1-6].

2. The Analysis of Land Utilization and Cropping Pattern

To view the research problem in its proper perspective, it is useful to have an agro economic profile of the study region. The agro-climatic factors like soil, topography, rainfall, temperature and irrigation have immense effect on the type of farming in any area. This is followed by a study of proper utilization of land for planning higher agricultural production. Acceptance of proper land utilization as basic importance opens to a vast field of enquiry since in the prevailing agricultural situation many types of maladjustments are found. This chapter is intended to focus major attention on one of these maladjustments in land use, particularly of the cultivated area. It studies the localization of crops from the viewpoint of the utilization of land resources. It examines as to how far have localization of crops been according to the suitability of physical factors, i.e., how far is the cultivated land being utilized for growing the right type of crops and on this basis, it is intended to explore the possibilities of enhancing the agricultural production in Tamil Nadu state and of putting the cultivated land to better use through crop adjustment. Tamil Nadu state is situated on the south-eastern side of the Indian peninsula. The total geographical area according to the village papers and the Surveyor General of India is 130058 Sq. Km. accounting for 3.95 percent in India's geographical area Tamil Nadu is the seventh largest state in terms of population and eleventh in terms of area in India. Its population is 62.41 million and the density of the population is about 478 persons per sq.km. The percentage of literates is 65.4. Rural population accounts for 56 percent of the state's population. This high concentration in the rural areas is in a way disadvantageous in that, it allows a smaller area per person for cultivation and a smaller per capita production of food grains. In short, the economy of the state continued to be predominantly rural with more than half of the population still living in village and depending on agriculture for their livelihood. At present, there are 30 districts in Tamil Nadu and these districts present varied topographical features ranging from coastal plains to high mountains [7-10].

The principal rivers of the state are the Palar, Pennaiyar, Cauvery, Vaigai and Tamaraparani. The rivers entirely depend on rainfall received in five to six months a year. The state gets 80 percent of the total rainfall during the year only from the south-west monsoon and north-east monsoon and the distribution of the rainfall affects the cropping pattern. The normal rainfall is 958.4mm per year but the actual rainfall in 2005-06 was 1304.1mm. With rainfall so fluctuating, agriculture in Tamil Nadu has become literally a gamble in the monsoons. Failure or late commencement of the rains, besides floods and damages to the crops, makes the rain-fed crops not properly attended to by the farmers. The ground water potential of Tamil Nadu has also been estimated at 20.20 million-acre feet (including ground

water storage) of which, the present extraction is of the order of 15.89 million acre feet. The study of the ground water is important for the purpose of water resource management in the state [8-13]. The state is not very good in artificial irrigation. The percentage of net area irrigated to the net area sown remained steady around 42.5 and the percentage of the gross area irrigated to the gross cropped area varied from 43.8 to 44.5. Major and minor irrigation programmes are implemented in the state to cover the net areas and also to stabilise irrigation through canals (27.4%), tanks (19.7%), wells (52.6%) and other sources (0.3%) in the existing irrigated lands. In the plains, the day temperature generally ranges from 29°C (January) to 38°C (May) and night temperature from 19°C to 27°C. In the hill regions the day temperature varies from 19°C to 24°C and night temperature from 8°C to 16°C. The soils of Tamilnadu fall broadly into four major groups namely Black soil (parts of the district of Kancheepuram, Cuddalore, Vellore, Tiruvannamalai, Salem, Dharmapuri, Madurai Dindigul, Ramanathapuram, Virudhunagar, Sivagangai, Tirunelveli and Thoothukudi), Alluvial soil (the districts of Kancheepuram, Cuddalore, Nagapattinam, Thanjavur, Ramanathapuram and Kaniyakumari), Laterite soil (parts of the district Nilgiris) and red soil (parts of the districts Kancheepuram, Cuddalore, Salem, Dharmapuri, Coimbatore, Tiruchirappalli, Thanjavur, Madurai, Dindigul, Ramanathapuram, Virudhunagar, Sivagangai, Tirunelveli, Thoothukudi and small patches in the districts of Coimbatore and the Nilgiris). The general land use of the Tamilnadu state has been categorized into net area sown (40.3%), forest (16.2%), barren and uncultivated land (3.9%), land put to non cultivated uses (16.4), current fallow (5.8%), other fallow land (11.7%), land under miscellaneous tree crops (2.1%), cultivable waste (2.8%), permanent pasture and other grazing land (0.8%), area sown more than once (6%), total cropped area (46.3%) and total geographical area (100%). The share of primary sector to GDP of the state was 13.91 per cent in 2005-06. The income originated in primary sector at constant prices increased from Rs. 22374 crores in 2004-05 to Rs. 24616 crores in 2005-06, registering a growth of 10.02 per cent over 14.75 per cent achieved in the previous year. Within the four sub-groups of primary sector, agriculture and allied activities is the largest component which registered a growth of 7.81 per cent thanks to the normal rainfall during south west monsoon followed by bountiful rainfall in the north-east monsoon period of 2005-06 and good storage level in all the dams and irrigation tanks including Mettur dam. Among the other three sub-sectors, forestry and logging declined by 0.71 per cent and mining and quarrying registers a growth of 4.45 per cent income generation and from fishing sub-sector, which was negative during the past few years, turned positive and recorded an impressive growth in the review year. The growth of agricultural products is not a smooth and continuous process, it bristles with a number of hurdles, to a great extent, it is dependent on the two monsoons, following the weather cycle, and there are periods of production or lean periods followed by a good crop. Though there is an appreciable regional difference with regard to the importance of the different crops within the cropping pattern of the state, the existing crop pattern of the state during 2005-06 is as follows. Food crops contribute 72.9% of total agricultural production. The main components in the food crops category are cereals (46.27%) and pulses (8.7%). The important components of cereals are paddy (33.9%), cholam (5.2%), cumbu (1.4%), ragi (1.7%) and other cereals (4.1%). The total food crops also include sugarcane (5.6%), tapioca (2.1%) and other miscellaneous food crops (10.2%).

3. Land Utilisation and Cropping Pattern

The level of farm incomes, *ceteris paribus*, is the outcome of efficient utilization of existing resources among alternative production activities. An improper allocation of resources results in output being less than the potential minimum. Any mal-allocation automatically sets in motion the forces necessary to reallocate resources in such a way that output and efficiency of the economy are increased. Quite often, farmers are faced with the problem of judicious and efficient use of resources; particularly land, which is in acute short supply. In a state like Tamil Nadu where population pressure is very high and land resources are meagre, proper exploitation of land resource is of strategic importance. The wider fluctuations in agricultural output experienced recently are generally attributed to the utilization of land. Therefore proper land utilization is very important in planning for higher agricultural production.

4. Conclusion

The foregoing analysis reveals that the cropping pattern in the state has a high degree for maladjustment for crops. Roughly 53 per cent of the cultivated area is being used for growing unsuitable crops. There is

considerable misuse of the cultivated area based on crop yields and hence output is affected to a great extent. Roughly 53 per cent of the cultivated area is being used for growing unsuitable crops. There is a possibility of considerable enhancement of agricultural production through the adjustment of various crops in favour of relatively more suitable areas for their growth. The extent of maladjustment was different in different crops in different districts and for the state. It is but natural that different districts of the state will differ in their response to change in conditions because of uneven distribution of gains of agricultural technology, heterogeneous topography of various geographic regions, climate, varying soil conditions within the regions, irrigation facilities and different levels of economic prosperity among the farm population.

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