



INDIAN AGRICULTURE AN OVERVIEW

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ABSTRACT:

Agriculture, being the largest sector, forms the backbone of the Indian economy. It has been a widely accepted view that the economic growth of less developed countries depend heavily upon improving the performance of the agricultural sector. Speedy agricultural development helps the process of economic growth in backward areas in many respects.

The increased outlay on agriculture and augmentation or total agricultural production, agricultural development is interpreted for the present study to understand the process by which the performance of agriculture improves through the adoption of cropping pattern, though many times the term cropping pattern has been used in this analytical study, it has been taken as a synonym of agricultural development. Further, the present study probes into the nature and cropping pattern of agricultural development based on both documentary and empirical evidences

With the increase of population, the irrigated area is increasing and with advances in agricultural Science, most of the extensive cropping patterns are giving way to intensive cropping. The development in minor irrigation work has especially provided the farmers with opportunities to crop their land all the year round with high-yielding varieties. This intensive cropping will require an easy and ready availability of balanced fertilizers and plant protection chemicals and an appropriate price policy for inputs and agricultural produce.

During the last 67 years since our independence, there has been higher growth in GDP in other sectors of economy as compared to agriculture and allied sectors. It is true that we have made significant progress ever since the food deficiency was witnessed in the 1960s. However, there is still a tremendous possibility of growth of agriculture sector as it has the potential to give employment to a large section of our population. For us, both production and productivity is twin objectives which we need to actively work upon. The principle of "less land – less time – more production" has to be practically implemented so that small and marginal farmers can make greater contribution in the field of agriculture.

KEYWORDS: Agriculture, Agricultural Science, Population, Augmentation.



INTRODUCTION:

Indian Agriculture: Performance and Challenges

Agriculture is a critical sector of the Indian economy. Though its contribution to the overall Gross Domestic Product (GDP) of the country has fallen from about 30 percent in 1990-91 to less than 15 percent in 2011-12, a trend that is expected in the development process of any economy, agriculture yet forms the backbone of development. An average Indian still spends almost half of his/her total expenditure on

food, while roughly half of India's work force is still engaged in agriculture for its livelihood. Being a source of livelihood and food security for a vast majority of low income, poor and vulnerable sections of society, and its performance assumes greater significance in view of the proposed National Food Security Bill and the ongoing Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) scheme. The experience from BRICS countries indicates that a one percentage growth in agriculture is at least two to three times more effective in reducing poverty than the same growth emanating from non-agriculture sectors. Given that India is still home to the largest number of poor and malnourished people in the world, a higher priority to agriculture will achieve the goals of reducing poverty and malnutrition as well as of inclusive growth. Since agriculture forms the resource base for a number of agro-based industries and agro-services, it would be more meaningful to view agriculture not as farming alone but as a holistic value chain, which includes farming, wholesaling, warehousing (including logistics), processing, and retailing. Further, it may be noted that in the last two Five Year Plans, it is clearly mentioned that for the economy to grow at 9 per cent, it is important that agriculture should grow at least by 4 per cent per annum.

Achieving an 8-9 percent rate of growth in overall GDP may not deliver much in terms of poverty reduction unless agricultural growth accelerates. At the same time 'growth with inclusiveness' can be achieved only when agriculture growth accelerates and is also widely shared amongst people and regions of the country.

All these factors point to just one thing: that agriculture has to be kept at the centre of any reform agenda or planning process, in order to make a significant dent on poverty and malnutrition, and to ensure long-term food security for the people.

This chapter briefly reviews the status and performance of agriculture, especially during the last two decades, and also presents what could be the way forward, given our objectives of accelerated growth, inclusiveness and the reducing of poverty and hunger.

Structure and Structural Transformation of Indian Agriculture

The agriculture sector in India has undergone significant structural changes in the form of decrease in share of GDP from 30 percent in 1990-91 to 14.5 percent in 2010-11 State of Indian Agriculture indicating a shift from the traditional agrarian economy towards a service dominated one. This decrease in agriculture's contribution to GDP has not been accompanied by a matching reduction in the share of agriculture in employment. About 52% of the total workforce is still employed by the farm sector which makes more than half of the Indian population dependent on agriculture for sustenance (NSS 66th Round). However, within the rural economy, the share of income from non-farm activities has also increased.

Diversification of Cropping Patterns in India

Diversification towards high-value commodities is a notable change that has been unfolding over the last three decades in the production portfolio of agriculture in India. It is observed that the share of high-value commodities like fruits and vegetables, livestock and fishery products in total VOP of agricultural and allied sector has been increasing steadily over the years. In 1980-81, the share of high-value items in total was around 35.2 per cent which increased to 37.6 per cent by the year 1990-91, to 45.8 per cent by 2000-01 and to 48.9 per cent by 2009-10 (Figure 8). This means, the share of food grains and other crops in the basket of commodities have been declining during this period, though their production in absolute terms increased substantially. In fact, this is a reflection of change in the consumption habits and dietary diversification of people as a result of increase in per capita income, urbanization, growing food processing facilities in the country etc., a fact which is widely documented in the recent years (Kumar et al., 2006;2007; Joshi et al, 2008).

The Cropping Patterns in India underwent several changes with the advent of modern agricultural technology, especially during the period of the Green Revolution in the late sixties and early seventies. There is a continuous surge for diversified agriculture in terms of crops, primarily on economic considerations. The

crop pattern changes, however, are the outcome of the interactive effect of many factors which can be broadly categorized into the following five groups:

1. Resource related factors covering irrigation, rainfall and soil fertility.
2. Technology related factors covering not only seed, fertilizer, and water technologies but also those related to marketing, storage and processing.
3. Household related factors covering food and fodder self-sufficiency requirement as well as investment capacity.
4. Price related factors covering output and input prices as well as trade policies and other economic policies that affect these prices either directly or indirectly.
5. Institutional and infrastructure related factors covering farm size and tenancy arrangements, research, extension and marketing systems and government regulatory policies.

These factors are not watertight but inter-related. For instance, the adoption of crop technologies is influenced not only by resource related factors but also by institutional and infrastructure factors. Similarly, government policies - both supportive and regulatory in nature - affect both the input and output prices. Likewise, special government programmes also affect area allocation and crop composition. More importantly, both the economic liberalization policies as well as the globalization process are also exerting strong pressures on the area allocation decision of farmers, essentially through their impact on the relative prices of inputs and outputs. Although the factors that influence the area allocation decision of farmers are all important, they obviously differ in terms of the relative importance both across farm groups and resource regions. While factors such as food and fodder self-sufficiency, farm size, and investment constraints are important in influencing the area allocation pattern among smaller farms, larger farmers with an ability to circumvent resources constraints usually go more by economic considerations based on relative crop prices than by other non-economic considerations. Similarly, economic factors play a relatively stronger role in influencing the crop pattern in areas with a better irrigation and infrastructure potential. In such areas, commercialization and market networks co-evolve to make the farmers more dynamic and highly responsive to economic impulses.

Since the early days of 'Green Revolution' there are signs of imbalance in cropping pattern. Technological changes of Mid-sixties caused significant shifts, in land utilisation, in Favour of crops like wheat and rice at the cost of area under coarse cereals, pulses and oilseeds. This shift was the combined effect of differential rates of technological change among crops, Irrigation bias of new technology causing shift, of land away from Dry crops in favour of irrigated crops and the associated policy Of price support system as well as market intervention by the Government for certain crops. Distortions in cropping pattern were reflected in relatively abundant supply of the same crops (like Wheat of which the Government had surplus stocks) and acute Shortage of others (like pulses and edible oils which had to be imported at huge cost in terms of foreign exchange). Changes in cropping pattern are determined by factors like agro-climatic Conditions, technological, infrastructural and institutional Environment and profitability signals.

The single most important element in crop production strategy in the post-green revolution period is improved agricultural technology. This technology is in the form of high yielding plant varieties, intensive cultivation, and greater use of fertilizers, increased irrigation and better techniques for ploughing, harvesting and plant protection. High yielding varieties have been developed for a number of crops but their impact on production, productivity and costs varies across crops and regions.

The level of cropping intensity is determined by several factors. The most important factor is the availability of water from natural (rain fall) and or man-made resources (irrigation) However, the scope for year round cropping activities in most States of India are severely constrained by the seasonal Distribution of rainfall. So long as this natural constraint is relaxed, by developing irrigation facilities, the level of multiple cropping improves. The flexibility in selecting appropriate crop pattern is also enhanced when Irrigation facilities make water available in a controllable manner farm to the farmers throughout the year. It would, therefore, be reasonable to hypothesis that a greater part of inter-state, or inter-regional disparity in the

level of cropping intensity could be due to the disparity in the pattern of development of irrigation facilities, both in qualitatively and quantitatively. In general the level of cropping intensity is higher in the Regions with higher percentage of net sown area irrigated and with Higher intensity of land use by irrigation. However, it is futile to expect a one-to-one correspondence between irrigation And cropping intensity.

The other crucial variable that determines the level of cropping intensity is the availability of labour. The Characteristics of the farms according to holding size in India Suggest that labour availability is an important determinant. The Various farm management studies carried out in India showed that As the average size of holding increases, the average family size Increases but not in the same proportion . As a result, land Per capita will goes up and population density declines with an Increase in the holding size. In other words, an inverse Relationship is established between cropping intensity and holding size. With modernization of agriculture, currently this relationship is undergoing changes. Tractorisation and other labour-saving mechanical devices have altered this picture. Several other factors can also be listed, but generally speaking, there are basically three factors that determine the level of cropping intensity.

Firstly, Supply of energy in the form of human labour ,animal Labour and mechanical device secondly, supply of water in the Form of rainfall or irrigation and its distribution over the crop Year, and thirdly the physical limits imposed by the adopted Cropping pattern on the duration of cropping activities during a Particular crop year. The above discussion is indicative of the Changes in cropping pattern. Cropping intensity will put more Pressure on energy demand in the form of human, bullock, Mechanical and fertilizers and pesticides. In this regard one can concentrate the existing literature available with respect to cropping pattern and cropping intensity.

India has a geographical area of 328.73 million hectares; of which reported area for land use is 306.04 million hectares. The net area cultivated is about 142.60 million hectares i.e. about 46.6 per cent of the total reported area. Since nearly 50 million hectares of area is sown more than once, the cropping intensity works out to 135.1. Forests account for about 68.97 million hectares i.e. 22.5 percent of the total reported land area. Also nearly 13.97 million hectares are cultivable wastelands and 9.91 million hectares are fallow lands. Only about 30 percent of the total cropped area is irrigated and the remaining area is rain fed. The available statistics further shows that only about 66 percent of the gross cropped area is under food crops and nearly 34 percent area under nonfood crops. Cereals and pulses account for nearly 52.93 per cent and 12.64 percent of the total area respectively. Fruits and vegetables occupy nearly 4.24 percent of area. (Haque 2003) Plantation crops accounts for insignificant proportion of total area at the macro level, although these are very important crops for certain regions, namely tea in Assam and West Bengal, Coffee in Kerala and Karnataka, Coconut, cashew nut and rubber in Kerala and Tamil Nadu. Of the total coconut area of 1.84 million hectares, Kerala accounts for 51 percent followed by Tamil Nadu 17 percent, Karnataka 18 percent, Andhra Pradesh 5.4 percent and other 9.6 percent. In the case of cashew nut, there are about 601 thousand hectares of which Kerala accounts for 20 percent, Andhra Pradesh 15 percent, Karnataka, Maharashtra and Tamil Nadu 14 percent each, Orissa 11 percent and Goa 8 percent and others 4 percent. Tea covers nearly 4.34 lakh hectares of area in the country of which 3.33 lakh hectares are in the states of Assam and West Bengal. Coffee is predominantly grown in the three southern states of Karnataka, Kerala and Tamil Nadu. Of the total coffee area of about 2.41 lakh hectares, Karnataka shares 1.28 lakh hectares, Kerala 66.5 thousand hectares and Tamil Nadu 32.9 thousand hectares. Similarly rubber is the crop of southern states. Of the total rubber area of 5.59 lakh hectares, Kerala shares 4.73 lakh hectares, Karnataka 19.6 thousand hectares and Tamil Nadu 18.7 thousand hectares. Also the contribution of plantation crops to foreign exchange earnings is very significant. While tea and coffee earn sizeable foreign exchange, rubber is a valuable import substitute, for rubber-based industries.

According to population census of India 2001, there are about 402.5 million rural workers of which 127.6 million are cultivators and 107.5 million are agricultural labourers Table - 1.1. In other words, pure agricultural workers constitute nearly 58.4 per cent of the total rural workers, of which 31.7 percent are owner cultivators and 26.7 percent are mainly agricultural wage earners (Agriculture Statistics at a Glance, sourced from Registrar General of India, New Delhi 2001). The latest available agricultural census data (Govt.

of India, Agricultural Census Division, and Ministry of Agriculture 2002) also reveal that about 78 percent of operational holdings in the country are marginal and small, having less than 2 hectares. About 13 percent holdings have 2 to 4 hectares and 7.1 per cent have 4 to 10 hectares of land. (Haque 2003)

The relatively large holdings above 10 hectares number only about 1.6 percent of the total operational holdings. However, this 1.6 per cent of the large holdings occupies about 17.3 per cent of the total area, while 78 percent of holdings which are less than 2 hectares, and operate only about 32.4 percent of the total area. This speaks of inequality in the distribution of operational holdings. Also there is inequality of income between agricultural and non-agricultural workers, which is evident from the fact that percentage share of agriculture in current total GDP is only 24.2, while the percentage share of agricultural work force to total work force comes to about 60 percent. The agricultural Census data clearly bear out the fact that Indian agriculture is dominated by small and marginal farms, which are basically subsistence farmers. They provide mainly for self-consumption. However, some of these farmers have to sell their produce immediately after harvest at low prices and buy the same products later at high prices.

CONCLUSION:

The increased outlay on agriculture and augmentation of total agricultural production, agricultural development is interpreted for the present study to understand the process by which the performance of agriculture improves through the adoption of cropping pattern, though many times the term cropping pattern has been used in this analytical study, it has been taken as a synonym of agricultural development. With the increase of population, the irrigated area is increasing and with advances in agricultural Science, most of the extensive cropping patterns are giving way to intensive cropping. The development in minor irrigation work has especially provided the farmers with opportunities to crop their land all the year round with high-yielding varieties. This shift was the combined effect of differential rates of technological change among crops, Irrigation bias of new technology causing shift, of land away from Dry crops in favour of irrigated crops and the associated policy Of price support system as well as market intervention by the Government for certain crops.

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