
UNIT 7 **ROLE AND IMPORTANCE OF AGRICULTURE IN INDIAN ECONOMY**

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7.0 OBJECTIVES

After going through this unit, you will be able to:

- distinguish between the changing (i.e. traditional and modern or sustaining and commercial) role of agriculture and indicate in its light its renewed importance to the contemporary times;
- describe the theoretical perspective on agriculture's role in economic development;
- explain the inter-linkages between agriculture and non-agricultural sectors;
- discuss the importance of agriculture to the Indian economy in its multi-faceted perspective;
- indicate the changing role of agriculture in the Indian economy under the current economic dispensation; and
- highlight the trends in employment shift/elasticity between the agricultural and the non-agricultural sectors.

7.1 INTRODUCTION

Indian agriculture has undergone a significant change during the last two decades of neo-liberal policy regime. In terms of rural livelihood, agriculture still occupies a primary role in the economy providing direct employment to more than half of total workforce of the country. However, in terms of its contribution to the total GDP it has reduced itself to a residual sector contributing at present less than 15 percent (compared to a high level of 52.2 percent in 1951). Evidently, although the growth trajectory has shifted to a great extent towards the non-agricultural sectors, there has not been enough occupational mobility of farm workforce. This is mainly due to: (i) inadequate availability of livelihood diversification options; and (ii) lack of required level of education and skills among a large section of agricultural workforce. In this scenario, the role of agriculture in the economy cannot be perceived only as a process of releasing factor resources for industrial development as hypothesized by the dualistic growth models of 1950s and 1960s. Rather, it should be viewed in terms of its larger role of socio-economic importance like: (i) protecting rural livelihoods; (ii) reducing rural poverty; (iii) alerting the policy makers on the need to evolve policies for inclusive growth; (iv) maintaining economic stability; (v) providing food and nutritional securities; (vi) significance for maintaining ecological and environmental balance; etc. Keeping these aspects in view, the present unit focuses on giving an account of the 'role and importance of agriculture' to the Indian economy in the present context. In the process, you will also study about the structural changes in the economy and the linkages that have come to be evolved over time between the farm and the non-farm sectors. The contemporary role of agriculture in the context of recent changes in the sector will be especially focused.

7.2 ROLE OF AGRICULTURE: THEORETICAL PERSPECTIVE

The importance of agriculture in the context of economic development has been recognised since long. The Physiocrats extolled agriculture as the only sector of the economy that produced surplus over and above the requirements of labour and capital employed. Even among both the classical and the neo-classical economists, the role of agriculture remained one of the key subjects attracting much attention of development economists contributing in the process to the generation of significant theoretical and empirical literature. Most of this literature focuses on the process of structural transformation of economies from traditional agriculture to modern industrialization. The dualistic economy models (some of which we have already studied in Unit 1 but we shall revisit them here as recapitulation besides studying about them from an alternative perspective in addition to the contribution of some other theorists), mainly those of Singer, Nurkse, Lewis and Ranis and Fie, offer a good theoretical perspective for analyzing the role of agriculture in economic development. These models and the subsequent studies based on them argue that agriculture is a relatively labour intensive activity economizing on scarce capital resources. It contributes to economic development by providing food grains, raw materials for agro-based and other industries, labour, savings, and more importantly by generating demand for non-agricultural goods. These contributions, therefore, amply make it clear that the development of agriculture is important for overall economic development by contributing to the

development of both the off-farm and the non-farm sectors. Estimates (provided by Nurkse and Ranis & Fie) on the potential of surplus labour range between 25-40 percent for over-populated countries. This aspect was particularly highlighted by Thirlwall when he said that the industrialisation in Western Europe and particularly of England was financed, to a greater extent, by the surplus generated in agriculture.

The Lewis model regarded the surplus labour in agriculture (traditional sector) as of great potential for the development of modern industrial sector in developing countries. As the marginal productivity (MP) of agricultural labour in these countries was either very low or negligible, withdrawal of sizeable proportion of workforce would not reduce agricultural output, but could be gainfully employed in the modern sector. His contention was that agriculture utilises land and labour under conditions of fixed technology and therefore the wages paid to the labour is below its MP. On the other hand, labour in industries is employed up to the point where MP of labour is equal to the wage rate. Consequently, surplus labour from agriculture moves out to the industries. Once surplus labour from agriculture is removed and the MP of agricultural labour approaches a level equal to that in the industrial sector, the traditional sector loses its 'surplus labour' character and in time even turns to become commercialized. Thus, Lewis model perceives economic development as a process requiring transfer of surplus labour from traditional 'low-returns agricultural sector' to a 'high-returns modern industrial sector'. This dualistic model generally views agriculture in the early stages of development as a backward and less productive subsistence sector from which labour and other resources could be drawn to promote development of the dynamic/productive industrial sector.

Apart from the role of agriculture in releasing surplus labour to the industries, the classical economists also considered the role of food supplies in raising economic growth. They argued that if food production remains stagnant, then workers in industries would face food shortages, leading to increase in food prices and a consequent rise in the wage rates in industries. The rising wage rates would impede the industrial growth, especially during the early stages of development when technologies are usually labour-intensive. In a nutshell, therefore, the dual economy models considered the role of agriculture as primary in setting the pace of industrialization in the developing economies.

Johnston and Mellor (1961) opine that in the initial stages of development in an agriculture dominated economy, agriculture generates: (i) capital by export earnings; (ii) domestic demand for the consumption of goods produced in the non-agricultural sectors; and (iii) additional demand for its own production needed to sustain the growing needs of rising population and income. They, therefore, considered five contributions of agriculture to the economy as: (i) providing food for domestic consumption; (ii) releasing labour for industries; (iii) enlarging the market for domestic industrial output; (iv) increasing the rate of domestic savings; and (v) generate foreign exchange earnings by agricultural exports. Kuznets stated the same in alternative terms by identifying the three contributions of agriculture to economic development as: product, market and factor contributions. In his own words, "*if agriculture grows, it makes a product contribution; if it trades with others, it renders a market contribution; if it transfers resources to other sectors it makes a factor contribution*".

Schultz in his book '*Transforming Traditional Agriculture*' argued that agriculture is not only capable of enhancing productivity through adoption of new technology, but it also has potential to spread growth to other sectors through multiplier effects. He contested the widely accepted argument that farmers in developing countries were guided by tradition or culture and did not respond to economic incentives. His famous '*efficient but poor*' hypothesis implied that low income levels in developing countries' agriculture are a result of the low productivity of the available factors of production (and not due to their inefficient allocation). Modernising agriculture will, therefore, remove this weakness for which the case of green revolution in India is a telling example.

Thus, in the earlier literature, focus was mainly on traditional role of agriculture. However, there is a growing recognition of the 'multifunctionality' of agriculture. The current issues related to ecology and environment, water resources, biodiversity, rural poverty, food/fuel/livelihood securities, etc. have once again put agriculture in the overall development agenda of governments of many developing countries and international institutions. The World Development Report (WDR) 2008 recognises the importance of agriculture as an effective engine for growth and removal of rural poverty in developing countries. The report says "*slower growth in the agriculture sector, a rapidly growing non-agricultural sector, and labour markets strongly segmented by labour skills have widened rural-urban income gaps, adding political pressure to invest in agriculture and rural development*". The report focuses on the four policy objectives: (i) diversification of small farming towards high-value products; (ii) extension of the green revolution in food staples to areas bypassed by technological progress; (iii) development of infrastructure to support the diversification of agriculture and rural economy; and (iv) promotion of the rural non-farm economy.

Check Your Progress 1 [answer in about 50 words in the space given]

- 1) What are the reasons advanced for the continued importance of agriculture (even at the current juncture) keeping the socio-economic interest in view ?

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- 2) State the three contributions of agriculture to the economy suggested by Kuznets.

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- 3) What are the four policy objectives prescribed by the WDR 2008 as a prescription to reducing the widening rural-urban gap following the rapid pace of non-agricultural sector's growth as compared to that of agriculture?

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7.3 LINKAGES BETWEEN AGRICULTURAL AND NON-AGRICULTURAL SECTORS

Agriculture plays a key role in establishing linkages with the non-farm sectors. In India, traditional agriculture was the base of overall village economy. Livelihoods of rural artisans, blacksmiths, carpenters, weavers, washer-men, tailors, potters, sweepers, barbers, etc. were directly dependent on agriculture (known as *jazmani* system). However, as the agriculture develops and becomes more market-oriented, the traditional system gradually gives way to a new system called 'input-output market system'. Agriculture starts depending more on external inputs, including technology, seeds, fertilizers, and machines and in the process generates more marketable surplus for agro-processing industries and to meet the growing urban needs. With the development of socio-economic infrastructure in rural areas (such as road, communication, power, banks, schools, markets, cooperative institutions, etc.) and the resultant establishment of rural-urban linkages, trade and commerce in farm inputs, outputs and industrial consumer goods is greatly facilitated. In this process of farm-non-farm and rural-urban linkages, agriculture acts as a driver and public investment in rural infrastructure as an enabler. This is how the linkages of agricultural growth following the green revolution have led to the creation of agro-industry in India. Farm and non-farm linkages can also be, therefore, classified as production and consumption linkages. Production linkages can further be classified as forward linkages (agro processing activities) and backward linkages (input-supply to agriculture).

Forward production linkages of agriculture supplies raw materials such as sugarcane, oilseeds, cotton and jute fibres, tea and rubber, food grains, horticulture and livestock to agro processing industries. More recently, agro-forestry has also become one of the important agricultural activities on which Indian paper and plywood industries depend. Agricultural growth also gives impetus to the agro-input supplying industries through backward linkages. As discussed above, share of external inputs (purchased inputs) in agriculture increases with the increase in agricultural development. Subsistence agriculture largely depends on internal inputs, such as, own farm grown seeds, farm yard manures, family labour and animal power, while modern agriculture depends more on external inputs, such as certified seeds, chemical fertilizers, pesticides, farm machines, bank credit, insurance, etc. The external inputs are supplied by the industries through input dealers. The input dealers also sometimes provide extension services to the farmers. The backward linkages of agriculture with industries help to generate more income and employment in the economy. Thus, growth of agriculture contributes significantly to the economic development through establishing forward and backward linkages with the non-farm sectors.

Agriculture also has consumption linkages with rest of the economy. It supplies food grains, fruits & vegetables, dairy products, and other agricultural products to meet the consumption needs of growing workforce in the non-farm sector. Growth in agricultural productivity makes possible the supply of cheap food to the population engaged in non-farm activities, keeping the real wages in non-farm sectors low. It thereby raises profitability and investment in the non-farm sectors.

Consumption linkages (or final demand effects) also arise from an increased demand for non-farm goods and services by the farm households. With the increase in agricultural income, demand for manufactured products, including consumer durables (e.g. TV, fridge, washing machines, motor cycles, cars, mobile phones) increases. Consumption of various services by farm households also increases as agriculture develops. Further, industry-to-agricultural linkages on demand side also act as a catalytic factor in raising the farm income. The availability of various manufactured goods in the local markets acts as a motivating factor for rural people to augment their farm as well as non-farm incomes for purchasing these goods. In other words, market penetration for manufactured goods in rural areas increases with the increase in rural incomes and better transport and communication facilities.

7.4 IMPORTANCE OF AGRICULTURE IN INDIAN ECONOMY

In the preceding sections, we studied the theoretical perspectives of the role of agriculture in economic development and the agricultural growth linkages with non-agricultural sectors. In this section, we shall study about the importance of agriculture in the Indian economy. The role of agriculture can be classified as direct and indirect. Direct role of agriculture in economic development can be assessed in terms of its contribution to Gross Domestic Product (GDP), employment, export, supply of raw materials to agro-food industries, and savings for capital formation. Indirect role can be assessed in terms of its contribution to poverty reduction, food & nutritional security, economic stability, balancing the ecological & environmental concerns, increasing rural non-farm income and employment, etc. As already discussed, under the dualistic economic framework, agriculture was viewed as a source of releasing factor resources for industrial development. Since agriculture was perceived as a low productive traditional sector, it was not considered as an equal partner in economic development. However, due to the technological breakthrough and policy support to agriculture during 1960s and 1970s, its dynamic role by way of forward and backward linkages has become prominent in the Indian Economy. Thus, although the contribution of agriculture to GDP has gradually declined with the increase in overall development of economy, its extended contribution to the economy is substantial. In a broader sense, therefore, agricultural economy consists of primary agricultural production system (crop production, livestock, agro-forestry, etc.) and the agri-food system (i.e. processing, marketing, distribution of agro-products, etc.). Considering together the contribution of both the systems, the role of agriculture becomes much greater than what is projected as the share of agricultural gross domestic product (GDP) in the national accounts statistics (NAS) of the country.

7.4.1 Contribution to GDP

Historical evidence and empirical studies show that in the initial stages of

development, agriculture contributes significantly to the GDP. As the economy grows and becomes more industrialized, the share of farm sector in the GDP gradually shrinks and that of non-farm sectors tend to increase. However, declining share of agriculture in the overall GDP does not mean that the agriculture is not growing. Although, agricultural output also grows over the period, non-farm sectors' output grows much faster. As a result, growth trajectory shifts from farm to non-farm sectors. Why does share of agriculture decline with the increase in economic development? To understand this, we must look at both the demand-side and supply-side factors that determine agricultural output/growth. From the demand side, as per the Engle's law, due to high income elasticity of demand, per capita demand for food grain declines, and demand for goods/services of non-agricultural sectors increase. However, trade liberalization and diversification of agriculture toward high income elastic horticulture and dairy products would have a subduing impact on the adverse effect of the Engel's law on demand for agricultural commodities. Therefore, policy support to horticulture and livestock sectors help diversify agriculture thereby rising farm income. From the supply side, agriculture is subject to application of law of diminishing returns due to natural, technological, human and other factors. In India, in case of most of the commodities, agricultural productivities have either declined in recent years or remained stagnant. Degradation of soil fertility, low investment in research & extension, depletion of groundwater resources, over chemicalization of agriculture, low human capital base, lack of policy support to emerging areas like horticulture and dairy sectors, and decline in net sown area (NSA) mainly due to conversion of agricultural land into non-agricultural activities are the main reasons for low agricultural growth in India.

7.4.2 Contribution to Employment

Agriculture not only provides direct employment to majority of rural workforce but also helps in generating indirect employment in rural non-farm sectors. It creates these employment opportunities through crop and livestock production and agro processing. The latter i.e. agro-processing includes: (i) expanding agribusiness activities; (ii) agricultural education, research and extension; (iii) agricultural information and communication; (iv) animal care & treatment; (v) plant protection; etc. In 1951, agriculture absorbed 69.5 percent of the total workforce. This percentage was still as much as 66.9 percent in 1991. But by 2004-05 this percentage had slid down to 50 percent. What does this trend imply? It implies that the reduction in the overall employment share of agriculture was just by 2.6 percent over the four decade period of 1951-91, but it declined by a steep 16.9 percent over the post-liberalization years of 1991-2005. Going by the theoretical postulations, market reforms would give rise to greater employment opportunities enabling a shift of workforce from the low-productive agricultural sector to the high-productive non-agriculture sector. This is how over a period of few decades a 'structural change' which reduces the excessive dependence on agricultural sector in the economy can be achieved. However, there could also be distressed mobility to the extent that the growth process was not 'inclusive' or pro-poor. As National Sample Survey Organisation (NSSO) survey of 2003 reports, more than 50 percent of households in the country are debt-ridden having taken loans for meeting capital/current expenditure for farming. You will study more about this in unit 26 of this course. These are issues which must attract policy attention to ease both the shift in agricultural workforce to non-agricultural sector as also to improve the conditions of working in agriculture itself.

Check Your Progress 2 [answer in about 50 words in the space provided]

- 1) What are the external inputs on which agriculture depends as it develops into a more matured state?

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- 2) How does the industry-agricultural linkage influence demand serving to promote farm/rural income?

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- 3) Why does the share of agriculture in GDP decline with increase in development? Answer from both the demand/supply side of its influence?

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- 4) In which period during the last few decades there is a greater reduction in the proportion of agricultural workforce in the total employment in India? What has caused this steep decline?

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7.4.3 Contribution to Exports

Agricultural sector has been a major contributor to India's export earnings. For a long time the agro-based products, namely, tea, coffee, cotton & jute textiles, spices, tobacco, cashew, sugar, etc. accounted for more than 50 percent of the export earnings of the country. This share has, however, declined over time with economic growth and diversification of the economy. The share of agricultural export declined from 17.8 percent in 1991-92 to 10.3 percent in 2008-09. The share of agricultural imports also has declined from 8.2 percent in 1998-99 to 2.7 percent in 2008-09. However, declining share of volume of agricultural trade in the total trade does not mean that the volume of trade has declined. In fact, agricultural imports registered an annual growth rate of 20 percent while agricultural export has registered 10 percent growth during the above period. This reveals that

during the post reform period, agricultural imports grew faster than the agricultural export which calls for measures to strengthen the exports by appropriate policy initiatives.

7.4.4 Role in Poverty Reduction

As we by now know well, a large number of poor people directly or indirectly depend on agriculture. Growth in the agricultural sector creates increased demand for basic rural non-agriculture wage goods and services. Many of these goods are mostly produced and consumed locally. A high growth in agriculture has great potential for generating employment and income in the rural non-farm sector. The World Development Report (WDR 2008) argues that agricultural growth is four times as effective in reducing poverty and inequality as growth in non-agricultural sectors. Another UN report entitled 'Sustaining Growth and Sharing Prosperity' (ESCAP, 2008) also says that persistent poverty in the Asia-Pacific region are the result of decades of neglect of agriculture. The survey says that close to a third of the region's poor (i.e. an estimated 218 million), could be lifted out of poverty if average agricultural labour productivity is raised. Growth in agricultural income is therefore regarded as more effective in reducing poverty. You may note that the rate of decline in poverty in India was greater during the relatively higher agricultural growth period of 1980s than during the low agricultural growth period of 1990s. For instance, rural poverty in India declined by 9 percentage point between 1993-94 and 2004-05 while between 1977-78 and 1987-88, it had declined by 14 percentage points.

Inadequate accessibility of food is one of the main causes of poverty, hunger and malnutrition which is widely spread in rural India. Due to malnutrition and hunger, a worker would be physically too incapable to earn enough to feed himself and his family. An increase in agricultural production and productivity would play a key role in reducing poverty by raising agricultural wages and making food and other agricultural commodities affordable to the poor households. However, agricultural growth would be more effective in reducing poverty when supported by adequate investment in human development components such as health and education. The provision of basic education, as well as formal or informal training for developing and upgrading skills, is crucial for farm workers, as they with sufficient knowledge and skills are better able to respond to new technology, market opportunities, and risks.

7.4.5 Role in Food and Nutritional Security

Improvement in agricultural production and productivity (see 'key words') helps to ease the problem of food security in two ways: (i) by making the food products affordable to the consumers; and (ii) by generating additional employment opportunities to rural workforce in farm and non-farm activities. Food security is not less than the national security. India cannot depend on import of food grains for maintaining food security. If India enters the global market as a bulk importer/purchaser of food, international prices of food items would increase to a greater extent, thus jeopardizing the food security of not only India but of other poorer countries as well. The message, therefore, is that the issue of food and nutritional security of the people in the country cannot be effectively addressed without raising the production/productivity in domestic agriculture.

7.4.6 Contribution to Achieving Inclusive Growth

Agricultural development is quintessential for achieving inclusive growth. Being labour intensive, agricultural growth creates additional employment with low entry barriers. Increased agricultural productivity also lowers food prices for both the rural and the urban poor, who typically spend most of their income on food. To achieve faster and inclusive growth, the government set the target of 4 percent growth in agriculture in the 11th Plan. The approach paper to the 12th Plan also envisages achieving 4 percent growth in agriculture to make the growth process inclusive. Further the linkage between the agricultural and the non-agricultural sectors imply that an increase in agricultural growth generates surplus with a multiplier effect. The additional income generated in the farm sector is also mostly spent on purchasing goods and services produced locally in the non-farm sectors. As income and employment further rises in non-farm sectors, middle and upper middle class households demand high-value farm and non-farm goods, giving an impetus to the diversification of rural economy. In this process, real wages in both the farm and non-farm sectors increase, making it possible for rural households to invest more in education and health. With better education and skills, the future generation of workers would be enabled to diversify in the emerging rural non-farm activities. Further, better education and skill would act as a 'pull factor' for rural to urban migration of workforce which, in turn, creates labour shortage in agriculture. This, in turn, motivates the farming community to use labour-saving technology. Thus, steady and sustained growth in agriculture over a long period of time brings inclusiveness in the economic growth process in agrarian economies like India where a majority of workforce draw their livelihood from agriculture. As said before, over a period of time this would result in a 'structural change' of workforce in which the excessive dependence on agriculture will come down to a more desired level.

7.4.7 Role in Economic Stability and Safety-Net

Agriculture can also play an important role in maintaining economic stability by providing a safety net to workers during a period of economic slow-down. For instance, during the recent global economic and financial crisis, many workers lost their jobs. It has been observed that many of the rural migrant workers, who become unemployed at such times, temporarily return back to their villages. Agriculture provides some safety-net to such workers as they get support in terms of food and shelter from their families. Agriculture thereby also helps to stabilize the economy in times of crisis. One of the reasons for greater insulation of Indian economy from the recent global crisis is that the agricultural sector largely remained unaffected by the crisis.

7.4.8 Role in Energy Security

Agriculture is of late being considered as a major contributor of alternative sources of energy. Agricultural biomass is being used to generate biogas and bio-fuel. Several countries have started to produce ethanol from corns and sugarcane so much so that between 2003 and 2007, two-thirds of global increase in maize production went to bio-fuel. About 20 percent of maize production in the US is being used to produce ethanol. High oil prices in the global market have encouraged many countries to frame policies for the development of bio-fuel. It is estimated that conversion of maize into bio-fuel can be profitable at oil prices in excess of

50 dollars per barrel. Brazil, being one of the largest sugarcane producers in the world, is also the largest user of ethanol fuel. In India also, the government has initiated measures to produce bio-diesel from jatropha and ethanol from molasses. Ethanol is used as a fuel in many countries around the world. India is estimated to have the potential to save nearly 800 million litres of petrol annually if the transport sector blends 10 percent ethanol with petrol. Indian Sugar Industry has the potential to co-generate up to 5000 MW of power from sugarcane bagasse.

7.4.9 Contribution to Ecosystem Services

Agriculture can also provide a variety of non-commodity ecosystem services such as pollution absorption, recreation, environmental protection through social and agro forestry, biodiversity, etc. This is to say, agriculture can produce both positive and negative externalities as part of the production process. On the one side, it can pollute soil and water sources through input-intensification and chemicalization. On the other, it can also generate positive externalities such as wildlife, wetland services, organic products, etc. The organic label is one of the more well-established eco-labels. Organic farming can provide a host of non-commodity ecosystem services including biological pest control and protecting soil and water resources. However, farmers at present do not receive any remuneration for ecosystem services. The situation requires redressal by changes in national accounting practices and institution of incentive/reward systems.

7.5 CHANGING ROLE OF AGRICULTURE IN INDIAN ECONOMY

During the last two decades of neo liberal policy regime, Indian economy has undergone a significant change with the result that the growth trajectory has shifted from agriculture to non-agricultural sectors. The economy is now largely insulated from the fluctuations in agricultural growth as today agriculture contributes less than 15 percent to the GDP. However, with rising income in the non-farm sectors, growing urbanization, increasing participation of women in job markets, etc. the composition of demand for agricultural products has significantly changed. During the green revolution period, agricultural development, to a great extent, was supply-driven and policy emphasis was mainly on achieving food security. Today, agricultural development is dependent more on demand-driven factors, though supply-side factors are also still relevant.

With the global integration of Indian economy and fast increase in disposable income, especially of middle and upper middle class households, Indian consumers are seeking quality, variety, convenience and safety in agro-products. Consequently, participation of agri-business companies in agricultural trade, processing, packaging, branding, marketing, storing, and other value chains has increased. Thus with globalization, developments like integrated value chains, rapid technological innovations and environmental issues have changed the role of agriculture in the Indian economy. With this, there is a need to extend the scope of agriculture to include agricultural diversification on modern agri-business lines. This would not only increase the employment opportunities but also add value to agricultural products via: (i) reducing the wastage of agricultural produce; (ii) improving the shelf-life of agro-products, especially perishable products such as fruits, vegetables, and livestock products. Several agri-business companies have already entered into

contract farming, providing technology, inputs and extension services to the farmers and procuring their produce at a pre-determined price thereby minimizing the risk of farmers and eliminating a multilayer of intermediaries. Thus, if we look at the potential of emerging agriculture by improving facilities in many other areas of agricultural importance [e.g. (i) expanding agricultural infrastructure, (ii) agricultural education, R&D, extension, etc. (iii) banking, insurance, transport & communication, marketing, storage facilities, etc.; (iv) input providers, farm suppliers, assemblers, processors, wholesalers, brokers, importers, exporters, retailers, distributors, etc.; and (v) futures markets, advertising and sales promotions], the rewards of a renewed role of agriculture in the Indian economy is quite substantial. All these agribusiness activities are totally dependent on primary agricultural production. The substantial economic contributions of primary agriculture to these fast growing agribusiness activities cannot be ignored.

Check Your Progress 3

- 1) Indicate whether the following statements are true or false:
 - a) Agriculture was viewed by the earlier development economists as a source of releasing factor resources for the industrial development.
True/False
 - b) Contribution of agriculture to GDP gradually declines with the increase in overall development of economy.
True/False
 - c) In a broader sense, agricultural economy consists of primary agricultural production system as well as the agri-food system.
True/false
 - d) Rate of poverty reduction in India was greater during the relatively higher agricultural growth period of 1980s than during the low agricultural growth period of 1990s.
True/False
 - e) India cannot depend on import of food grains for maintaining food security.
True/False
 - f) One of the reasons for greater insulation of Indian economy from the recent global crisis was that, agricultural growth largely remained unaffected by the crisis.
True/False
 - g) High oil prices in the global market have encouraged many countries to frame policies for the development of bio-fuel.
True/False
- 2) Fill in the blank
 - a) Since 1991-92 India's agricultural export grew _____ than agricultural import.
 - b) Percentage share of agricultural trade in the total external trade has _____ over the period.

- c) Agriculture can produce both positive and negative _____
as part of the production process.
- 3) What are the different areas in which focused efforts are needed in order to
reap the maximum potential of 'emerging agriculture'?
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7.6 EMPLOYMENT/GDP SHIFT AND EMPLOYMENT ELASTICITY

Figure 7.1 shows trends in the share of agriculture and allied sector in the total GDP (at 1999-00 prices up to 2003-04 and thereafter at 2004-05 prices). It is evident that contribution of agriculture and allied activities has declined steadily during the last 50 years. In percentage terms, it has declined from 50.6 percent in 1960-61 to 44.3 percent in 1970-71 and further to 37.9 percent in 1980-81, 31.4 percent in 1990-91, 23.9 percent in 2000-01 and to 14.2 percent in 2010-11. The share of agriculture in GDP has declined faster during the last two decades of economic reforms, as during this period other sectors have grown faster than agriculture. However, although the share of agriculture in GDP has declined, the volume of agricultural production (expressed in value terms as crores of rupees) has increased from 0.3 million in 1960-61 to 2.2 million in 2003-04 (at 1999-00 prices) and from 3.0 million in 2004-05 to 4.9 million in 2010-11 (at 2004-05 prices). This clearly indicates that the real income in agricultural sector has also increased over the period although the income growth is smaller than that of non-agricultural sectors.

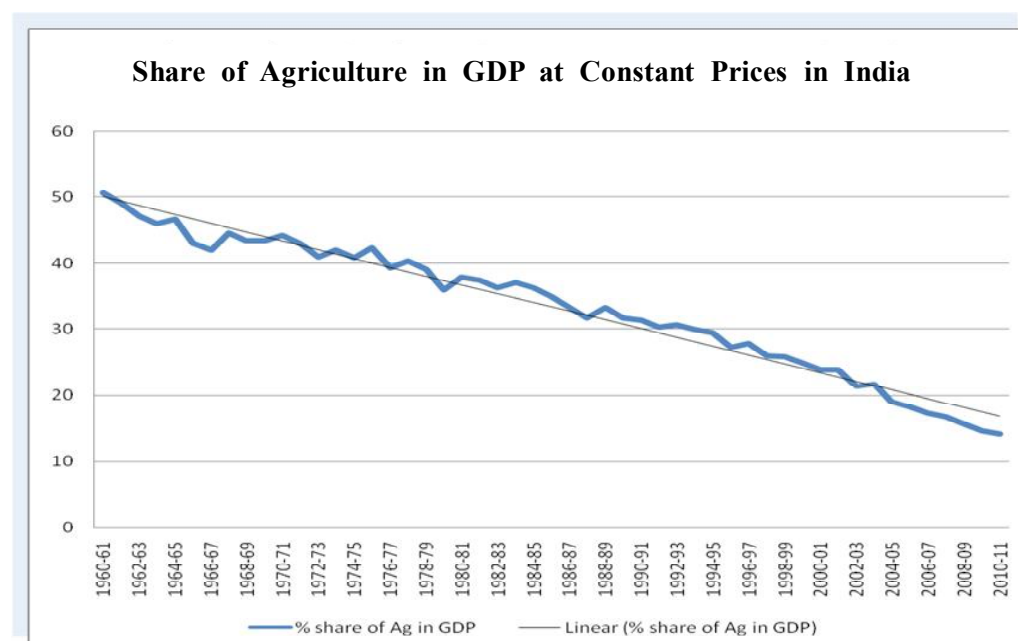


Fig. 7.1: Trend in Agriculture GDP (1961-2011)

Labour Productivity in Agriculture Versus Non-agriculture

The National Commission on Enterprises in Unorganised Sector (NCEUS) estimated that in 2004-05 the 'per worker GDP' (called 'labour productivity') in agriculture was about one-fourth of industrial sector GDP and one-sixth of service sector GDP. The ratio of labour productivity in agriculture to that in non-agriculture has, in fact, been continuously declining since 1983. This implies that the relative economic condition of agricultural workforce (vis-à-vis industrial and service sector workforce) has deteriorated over time. Further, due to limited access of farmers and agricultural workers to employment in high value added non-agricultural activities, a large number of them could not be occupationally mobile and per force remained dependent on agriculture for their livelihood.

Employment Elasticity in Agriculture Versus Non-agriculture

Employment growth in agricultural and non-agricultural activities for the period 1993-94 to 2004-05 is presented in Table-7.1. Between 1993-94 and 1999-00, agricultural employment witnessed a negligible 0.03 percent growth (i.e. annual average percentage growth). During this period, agricultural GDP increased by 2.9 percent per annum. As a result, the employment elasticity (defined as the ratio of employment growth to the corresponding GDP growth which indicates the employment generated for every unit of income generated or added to the sector) was low at 0.01. However, in the non-agricultural activities, the employment growth was as high as 2.5 percent, GDP growth was 8.1 percent and the consequent employment elasticity was also high at 0.31. The growth rate of real wages in the non-agricultural sector (5.03) also was nearly twice as high as compared to the agricultural sector (2.74). The growth story was similar even during the next quinquennium i.e. 1999-00 to 2004-05 but the situation for the agricultural sector was one of improvement. The employment elasticity in the non-agriculture was 0.65 as against 0.49 in agriculture. But the improvement in the employment elasticity of agricultural sector itself, from 0.01 in 1994-95 to 0.49 in 2000-2005, is significant. Notably, the real wages in agriculture also grew faster than the non-agriculture i.e. 1.46 percent in the former as compared to 0.13 in the latter. These facts are empirically encouraging from the point of view of agricultural development in India.

**Table-7.1: Trends in Employment Growth rates in Agriculture and
In percentage**

	Agriculture			Non-agriculture		
	1993-94 to 1999-00	1999-00 to 2004-05	1993-94 to 2004-05	1993-94 to 1999-00	1999-00 to 2004-05	1993-94 to 2004-05
Employment	0.03	0.85	0.40	2.53	4.66	3.49
GDP	2.88	1.76	2.37	8.11	7.22	7.71
Employment Elasticity	0.01	0.49	0.17	0.31	0.65	0.45
Real wages	2.74	1.46	2.15	5.03	0.13	2.77

Source: National Commission for Enterprises in the Unorganised Sector (NCEUS), GOI, 2009.

Check Your Progress 4

Fill in the blanks

- Share of agriculture in total GDP declined from 50.6 percent in 1960-61 to _____ in 2010-11
- Over the period 1961-2001 the real income in agricultural sector also increased, but the income growth has been much _____ than that of non-agricultural sectors.
- As per the NCEUS estimates, per worker GDP in agriculture was about one-fourth of _____ in 2004-05.
- Between 1993-94 and 2004-05, employment elasticity was higher in _____ than _____.

7.7 LET US SUM UP

Role of agriculture in economic development has remained one of the key subjects of development economics. Most of the earlier studies on the subject basically focused on the process of structural transformation of economies through transferring factor resources from traditional agriculture sector to modern industrial sector. The role of agriculture was mainly limited to provide food, create jobs, earn export income, generate savings for investment, and produce primary commodities for agro-processing industries. However, contemporary role of agriculture goes beyond these direct market-mediated contributions. Agriculture now also plays an important role in providing indirect non-commodity contributions that are public goods, social service benefits and environmental services, which are not captured by markets. The current issues relating to ecology and environment, water resources, biodiversity, rural poverty, food, fuel and livelihood securities, etc. have once again put agriculture in the overall development agenda of governments of many developing countries and international institutions.

7.8 KEY WORDS

GDP	: Gross Domestic Product - Final production of goods and services produced during a year within the geographical boundary of a Nation, irrespective of ownership of resources.
Linkages	: Refer to the interdependence between various segments through flows of output to each other.
Marginal Product of Labour	: Refers to a net change in total output due to one unit change in labour input, keeping all other factors constant.
Non-farm Sectors	: Comprise all economic activities other than agriculture and allied activities.
CSO	: Central Statistical Organisation - compiles and publishes National Account Statistics, such as GDP, gross domestic savings, etc.

Structural Change

: Refers to a major change like the distribution of workers by sectors, which comes about over a long term as a result of developmental initiatives pursued. Achieving a reduction in the workforce of agricultural sector, which at present is shouldering close to 50 percent of total workforce in India, in order that the labour productivity of the sector is high (comparable with the other non-agricultural sectors) is at present the major challenge of policy planning. It will also ensure the concerns of ‘inclusive growth’ which is one of the policy goals in the country.

Labour Productivity

: Is expressed in rupees and is obtained as the ratio of sector’s income divided by the total number of workers engaged in the sector. It represents the average income per person in the sector.

7.9 SOME USEFUL READINGS

- 1) Valdes A and Foster W (2010), *Reflections on the Role of Agriculture in Pro-Poor Growth*, World Development, Vol. 38, No. 10, pp. 1362–1374, 2010.
- 2) Johnston, B. F., & Mellor, J. (1961), *The Role of Agriculture in Economic Development*, American Economic Review, 51(4), 566–593.
- 3) Lewis, A. (1955), *The Theory of Economic Growth*, R.D. Irwin. Homewood, Illinois, 1955.
- 4) Luc Christiaensen, Lionel Demery, Jesper Kuhl (2011), *The (Evolving) Role of Agriculture in Poverty Reduction—An Empirical Perspective*, Journal of Development Economics, Vol. 96, (2011), 239-254.
- 5) Schultz, T. W. (1964), *Transforming Traditional Agriculture*, Yale University Press.
- 6) Singh S.P. (2010), Agriculture under Neoliberal Policy Regime, in *Alternative Economic Survey, India: Two decades of Neoliberalism*, Dannis Books.
- 7) World Bank (2008), *World Development Report: Agriculture for Development*, The World Bank, Washington D.C.

7.10 ANSWERS/HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

- 1) See section 7.1 and answer.
- 2) See section 7.2 and answer.
- 3) See section 7.2 and answer.

Check Your Progress 2

- 1) See section 7.3 1st and 2nd para and answer.
- 2) See section 7.3 last para and answer.
- 3) See section 7.4.1 and answer.
- 4) See section 7.4.2 and answer.

Check Your Progress 3

- 1) (a) True; (b) True; (c) See 7.4 and answer; (d) True; (e) True; (f) True; (g) True.
- 2) (a) slower; (b) declined; (c) externalities.
- 3) See section 7.5 (last part of 2nd para) and answer.

Check Your Progress 4

- 1) See 7.6 and answer.
- 2) See 7.6 and answer.
- 3) See Table 7.1 and answer.
- 4) See Table 7.1 and answer.