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Indian agriculture, role in the economy and economic liberalisation: Revisited

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Abstract. This study focuses on the changes taking place in the agriculture sector in India, particularly since the early 1990s. A great deal of focus has been in the academic literature on growth rates in India in recent years, while the ongoing agrarian crisis is less discussed. The study intends to fill this gap and analyse the reasons behind the current crisis in the agriculture sector such as the slowing down in agricultural rates of growth, rising rural unemployment, food insecurity and rising numbers of farmers' suicides, declining prices of agricultural commodities, and a widening gap between the agriculture and non-agriculture sectors in terms of their share to gross domestic product. The study concludes that Indian agriculture is overburdened in the sense that a very high proportion of the population is dependent on this sector, while it has low productivity and low capital investment. It seems that the agriculture sector has much greater impact on reducing poverty and improving food security than other sectors of the economy. Therefore, public investment is important as it played a positive role in the pre-reform period. Public investment in land and water management seems to be crucial for improving the agriculture sector in the long-term growth and viability in India. The study recommends that for successful inclusive growth, agricultural growth is a prerequisite, and it is important to increase the availability of institutional credits and public investments in rural infrastructure, especially to assist small and marginal farmers and to diversify the rural economy.
Keywords. Indian agriculture; Neoliberal policy; Investment; Food sovereignty; and food security.
JEL. E50; E42; P21.

1. Introduction

India is primarily an agrarian economy, where agriculture and its allied fields act as main source of livelihood for nearly 70 per cent population of India. It provides employment to approximately 52 per cent of labour and its contribution to Gross Domestic Product (GDP) is 13.7 per cent for the year 2020. In the last five decades, there has been a steady growth in Indian agriculture, and it has moved from being a food deficit to food sufficient status. However, this sector faces various challenges and is still characterized by low productivity. A significant percentage of those involved in agriculture in India are small and marginal farmers. One of the reasons for the low productivity is that over 50 per cent of these small and marginal farmers do not have access to information which can help them to improve their yields and get better market prices. In India most of knowledge dissemination is done through the government financed agriculture institutes and rural extension officials.

India's production of food grains has been increasing every year and the total production of food grains increased from 51 million tonnes in 1950-51 to

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256 million tonnes in 2018. India is among the top producers of several crops such as wheat, rice, pulses, sugarcane, and cotton. It is the highest producer of milk and the second highest producer of fruits and vegetables. In 2018, India contributed 25 percent to the world's pulses production, the highest for any one country, 22 percent to rice production, and 13 percent to wheat production. It also accounted for about 25 percent of the total quantity of cotton produced, besides being the second-highest exporter of cotton for the past several years (FAO, 2022; Siddiqui, 2018a; Timmer, 2014).

However, the country's requirement for food grains to provide for its population is projected to be 300 million tonnes by 2025. This implies that the crop output needs to grow at an annual average of 2 percent. India's population rose more than three and a half folds from 361 million in 1951 to nearly 1.3 billion in 2021. But foodgrain output rose much faster i.e., by five folds from 51 million tonnes to 260 million tonnes during the same period. As a result, the country became self-reliant in food grains by the end of 1970s, and the most important point was that the sharp increase in food output was achieved mainly through an increase in yields and cropping intensity. The net shown area under cultivation increased only 18 percent during the last seventy years, while the gross cultivated area under irrigation increased from 23 million hectares in 1951 to nearly 94 million hectares in 2021 i.e., four-folds (Datt *et al.*, 2019; Siddiqui, 2021).

Agriculture, with its allied sectors, is the largest source of livelihood in India. About two-thirds of its rural households still depend primarily on agriculture for their livelihoods, with 82 percent of farmers being small and marginal. Moreover, with the increased mechanisation of the agriculture sector, labour displacing mechanisation has drastically reduced labour absorption. We need a more proactive fiscal policy and monetary policy must not be restricted to inflation targeting but it should be a part of the overall rural development strategy focused on job creation and alleviation of poverty. The share of agriculture in the total GDP has sharply declined over the last seventy-five years, while the people rely on this sector for their livelihoods has marginally declined. And at present, agriculture is facing many challenges including rising costs, falling returns and lower growths and also the crisis is seen in a huge rise in farmers' suicides and according to the National Crimes Records Bureau of India, more than 300,000 farmers committed suicide since 1995 (Government of India, Economic Survey).

The aim of this paper is to examine the changes taking place in the agriculture sector in India, particularly since the early 1990s. A great deal of focus has been in the academic literature on growth rates in India in recent years, while the ongoing agrarian crisis is less discussed (Datt *et al.*, 2019; Tyagi, 1990). The study intends to fill this gap and analyse the reasons behind the current crisis in the agriculture sector such as the slowing down in agricultural rates of growth, rising rural unemployment, food insecurity and rising numbers of farmers' suicides, declining prices of agricultural commodities, and a widening gap between the agriculture and non-agriculture sectors in terms of their share to gross domestic product. In short, the agriculture sector is experiencing an unprecedented crisis with stagnation or declining rural employment growth and as a result, for the rural poor, food security and job opportunities are being reduced.

This study is important because the agriculture sector plays an important role in the Indian economy and its better performance is crucial for inclusive

growth. This sector at present contributes only 17 percent of the GDP, while it provides employment to 60 percent of the total employment. Moreover, the forward and backward linkage effects of agriculture growth will have positive effects on other sectors as well. The major challenge for the Indian economy is that the share of agriculture in GDP decreased from more than 60 percent in 1950 to 25 percent in 2000 and 20 percent in 2005 and further to 18 percent in 2018. However, between 1950 and 2018 there was a more than 40 percentage point decline in the share of agriculture in GDP, while the decline in the share of agriculture in employment was only 18 percentage points (Government of India, Economic Survey).

Moreover, the slow economic diversification from the agriculture sector to manufacturing and services i.e., from low value-added to higher value-added products has been one of the important failures of the Indian development trajectory. Despite decades of relatively high growth of GDP, most of the workforce remains trapped in low-value employment in agriculture and other primary activities, along with low-paying services. In particular, the poor performance of the agriculture sector has created an unstable and unviable situation as workers remain over-crowded in this sector although it has witnessed a sharp decline in its share of GDP.

This study uses existing scholarly works in the agriculture area as well as conventional data sources to show the extent of the agrarian crisis in India today and the logic of different patterns of its causality.

In 1991, with the rising balance of payment crisis, India accepted IMF's neoliberal economic policy also known as the 'structural adjustment programme' and the key elements of neoliberal reforms included deregulation i.e., trade and financial liberalisation, the sale of public assets and removing restrictions on imports and exports of goods and services and finally bringing down fiscal deficit. The major consequences for the agriculture sector had been a reduction in fiscal deficit, meaning cuts in input subsidies leading to an increase in input prices. And the removal of quantitative restrictions on imports of agricultural products and as specified by WTO resulted in a sharp rise in agricultural imports in recent years (Government of India, 2013; Rao & Storm, 2003).

Despite the fact, after the neoliberal reforms were introduced in 1991, higher economic growth rates were achieved in India. And the manufacturing sector grew faster than in previous decades, however, the performance of this sector was not as impressive as has happened in the East Asian countries and in China. And India is far behind other developing countries in the industrial sector's contribution to GDP, for instance, 25 percent in India, 45 percent in Brazil, 44 percent in China, and 41 percent in Malaysia in 2017. In contrast to manufacturing, the service in India has witnessed faster growth rates relative to other sectors. And it accounts for over half of the GDP, with the agriculture sector accounting for only 17 percent of the GDP, while employing more than half of the total labour force (Datt *et al.*, 2019). It appears that after more than seventy-five years, the promise of successful industrial development to reduce unemployment challenges has not been achieved.

Moreover, the rapid GDP growth rates in the Indian economy still have not addressed the basic needs of the rural poor (Siddiqui, 2014). The food security of the population has not improved, nutrition indicators have stagnated, and per capita calorie consumption has not improved, if not declined. As the National Family Health Survey (NFHS) data of 2006 indicate, "46 percent of

the children below three years are underweight; 33percent of women and 28 percent of men have Body Mass Index (BMI) below normal; 79percent of the children aged 6-35 months have anaemia, as do 56percent of ever-married women aged 14-49 years and 24 percent of similar men; and 58 percent of pregnant women. The national averages mask location differences: all these indicators are much worse in rural India" (quoted in Ghosh, 2010: 33).

Several studies have pointed out that Indian agriculture has not performed well, especially since 1994. India has 40 percent more cultivable land than China, but average agricultural yields are 50 percent lower than China. Although India's population is younger and growing faster than China's, the demographic dividend is not utilised (Datt *et al.*, 2019).

The rate of growth in the agriculture sector declined for both foodgrains and non-foodgrains in the 1990s compared to the 1980s. The largest decline was witnessed in oilseeds, which fell from 5.2 percent per annum in the 1980s to 1.6 percent per annum in the mid-1990s. Land areas under rice and cotton experienced higher growth rates of nearly 2 percent per annum. However, during 2001-2011 all crop growth output declined, but the decline in food crops was higher than for non-food crops (Government of India, 2013).

During the pre-reform period 1950-1990, agricultural growth rates were higher than population growth rates. A decade before the launching of neoliberal reforms i.e., 1980-90, agricultural output grew at 4 percent annually and India was self-sufficient in food and even exported rice and wheat. However, since the economic reforms, agricultural growth was reduced to an average of 1.5 percent per annum, which resulted in a decline in the availability of food grains. The agriculture sector became less profitable due to several reasons including a fall in food grain prices, which led to a decline in areas under cultivation.

The government spending in agriculture has been reduced to meet the World Bank and IMF recommendations (World Bank, 2006). For example, the government spending on rural development including agriculture, irrigation, flood control, and village industry was reduced from 14.5 percent in 1985-90 to 6 percent in 1995-2001. On irrigation, annual growth in spending was 2.6 percent in the 1980s, which was reduced to just 0.5 percent per annum in 1992-2008. Since 1992 the government has cut subsidies, and as a result, the cost of production has increased. Institutional credits have fallen sharply, this has forced the farmers to rely on money lenders, which has further increased the cost of borrowing, especially for small and marginal farmers. When farmers are unable to pay back loans with high-interest rates, they are drawn into a debt trap (Ghuman, 2008).

When we look historically, we find that at independence in 1947, Indian agriculture was extremely backward, and a large part of land ownership was in the hands of absentee landlords and merchants (Patnaik, 1997). During the first half of the 20th century, agricultural output rose at a miserable rate of only 0.9 percent annually (Siddiqui, 1990). India's agriculture sector was integrated into the metropolitan capitalist system, which not only extracted surplus value, but also imposed an international division of labour along with the unequal terms of trade for primary products required for expanding the industrial sector in Britain (Siddiqui, 1990). During the colonial period, large parts of the land were converted into the production of cash crops such as indigo, coffee, tea, and opium. In the agriculture sector, the aim of the colonial authorities was to extract and maximise revenue through higher land rents

(Thorner, & Thorner, 1962). Large revenue demand from peasants left them with little or no surplus to re-invest and for monetary needs, they had to rely on private money lenders. As a result, indebtedness and landlessness increased during the colonial period despite the introduction of commercial crops (Thorner, & Thorner, 1962).

The paper is divided into various sections: First, the introduction lays out the background and significance of this study. The second section examines the post-independence developmental experiences. The third section and fourth sections deal with the deepening crisis and the growing issue of farmers' suicides. The fourth section analysis the issue of food sovereignty and food security and finally, the conclusion summarises the finding and presents brief recommendations.

2. The Post-independent experience

It is beyond doubt that the performance of agriculture in the post-independence has been far better than pre-independence period. For example, during the post-independent period between 1950 and 1990, all crops output growth was nearly 2.7 percent per annum, which was much higher than the negligible growth rate of only 0.9 percent per annum during the first half of the 20th century (Siddiqui, 1990). The land reforms carried out during the post-independence period had a varied impact in different states. This has led to changes in the size of ownership holdings. Despite some benefits, the land reforms failed to completely break the land monopoly and make a dent in rural inequality, but they placed some limitations on the power of landed elites in rural society. Moreover, the increase in public investment in irrigation, power, and rural development, helped to increase agricultural output.

However, despite an increase in food output then it was not enough to keep pace with the population growth and India began to experience food shortages. To meet these challenges, the government decided to find a technical solution to raise agricultural output. And in the mid-1960s 'green revolution' was launched in certain selected regions and initially aimed at large cultivators, who had money to invest in new technologies e.g., tractors, tube wells, electricity, new seeds, fertilizers, and pesticides (Siddiqui, 1999). The government aimed to raise agriculture output and become self-sufficient in food production and finally do away with food shortages. Moreover, the nationalisation of commercial banks in 1969 helped to promote the policy of 'social and development banking'. The banks emerged as important sources of finance for the agricultural sector (Shetty, 2006). In addition, the government fixed minimum support and procurement prices for a few crops to protect farmers from price fluctuations (Ghosh, 2010; Harriss-White, & Janakarajan, 2004).

Punjab was among the few key state where the green revolution was launched. The data on agricultural growth shows that among all the states of India, Punjab's agricultural growth rate was highest during 1960-1986. During the same period, the annual growth rate of increase in the production of food grains for the state was more than double that of India as a whole. The percentage of High Yielding Varieties (HYV) of seeds in the total area under food grain in Punjab state was quite high 73 percent in 1975 (compared to 31 percent for all India), which rose to 95 percent in 1985 (all India 54 percent) (Government of Punjab, 2004; World Bank, 2004).

However, two decades later by 1985, still, the green revolution was largely spread to only five states, which amounted to 62 percent of the increase in foodgrain production. In contrast, the traditional rice-growing states like Bihar, Bengal, Orissa, Kerala, and Tamil Nadu together produced only a 14 percent increase in rice production between 1965 and 1985. By the end of the 1990s, the agricultural output growth began to slow down. Part of the reason could rise in input prices meant the profits in agriculture declined. Another problem is that the excessive use of tube wells for irrigation has pushed down further water levels and hence the costs rose. Lacking any further development in post-green revolution technology and research to increase yield productivity, productive investment began to level off.

3. Deepening crisis in agriculture sector

Indian agriculture has witnessed a deepening crisis since the mid-1990s as the rate of growth in the agriculture sector began to slow down, while rural unemployment continues to rise. Moreover, agriculture has been growing at slower rates in the post-reform periods compared to the pre-reform period. For instance, the average agricultural growth rate during 1991-2006 was 1.9 percent annually, which is much lower compared to figures of 3.4 percent for 1980-1990. During the 1980s both food and non-food growth rates were higher than in the 1990s (Siddiqui, 2015).

Although over the years the agricultural output for main crops has risen (See Figure 1) but its rate of growth rate has slowed down since 2002 as indicated in Figure 2. Despite high levels of production, agricultural yield in India is lower than in other large-producing countries. Agricultural yield is the quantity of a crop produced on one unit of land. The agricultural yield of food grains has increased by more than four times since 1950-51 and was 2,070 kg/hectare in 2015-16. However, India's yield is still lower when compared to countries such as Argentina, Brazil, China, and the US. In India, the main factors affecting agricultural productivity include the decreasing sizes of agricultural land holdings, continued dependence on the monsoon, inadequate access to irrigation, loss of fertility of the soil, uneven access to modern technology in different parts of the country, lack of access to formal agricultural credit, limited procurement of food grains by government agencies.

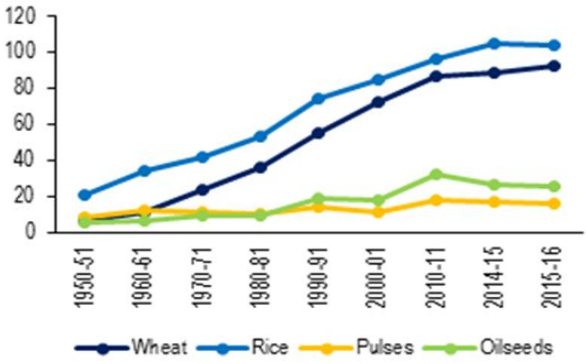


Figure 1. *Agricultural production In India (in million tonnes)*
Sources: Ministry of Agriculture; PRS. [Retrieved from].

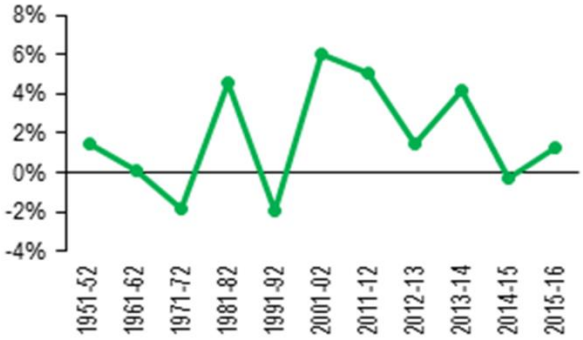
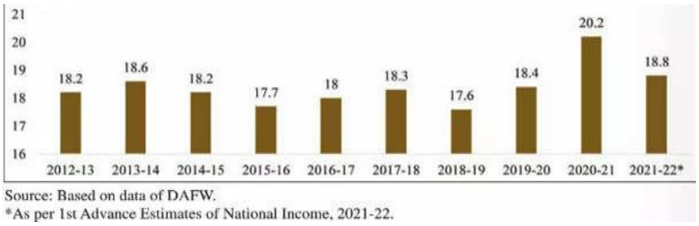


Figure 2. *Agricultural Growth in India (in %)*
Sources: Agricultural Statistics at a Glance, 2016; PRS. [Retrieved from].

The trends in the percentage of share of agriculture and allied services to the total gross value added (GVA) of the economy during the last decade at current prices. The share of the agricultural sector in the total GVA of the economy indicates a long trend of around 18 percent. However, this sector improved to 20.2 percent in 2020-21 during the Covid-19 pandemic, when industries were closed down and workers have to move back to their villages as a result, the GVA rose during this period as indicated in Figure 3.



Source: Based on data of DAFW.
*As per 1st Advance Estimates of National Income, 2021-22.

Figure 3. *Percentage Share Gross Value Added (GVA) in Agriculture and Allied Sector to Total GVA (at current prices).*
Source: Economic Survey, 2021-22. [Retrieved from].

An important element in the neoliberal reforms was trade liberalisation, which was introduced in agriculture in the early 1990s in India with the progressive reduction of trade restrictions on various types of commodities. For instance, to begin with, export subsidies were removed from tea and coffee and other products. This process was accelerated after India joined WTO, as a result, the quantitative restrictions on imports and exports of commodities such as agricultural seeds, pulses, rice, wheat, butter, and ground nuts oil were removed in 2000. This means the end of the state subsidies and other support to the rural sector, meaning it would be also difficult to promote rural industries. These developments raise serious issues regarding whether India can pursue an independent sovereign development strategy such as industrialisation, technology upgrading, and development of rural industries and food security.

With the joining of WTO, various challenges are being faced by the agriculture sector. The government price support measures namely minimum price support extended to a few crops are being attacked. The Agreement on Agriculture (AoA) was signed with the WTO, which prevents the country from providing export subsidies to agricultural commodities, this also puts constraints on the use of the National Food Security Act (NFSA) which provides subsidised food to poor households. (Dhar, 2023) The procurement

system support farmers that sustain the agriculture sector. India's minimum price support (MPS) is being challenged by the WTO that India has breached the rule specified by the AoA agreement. As a result, the Indian government is gradually withdrawing subsidies provided to farmers, which have been very important to protect farmers' incomes. Moreover, the public stockholdings of foodgrains to safeguard the low-income groups are under attack. On the issue of managing public stockholding of foodgrains after the AoA agreement, Dhar (2023) notes: "Indian agriculture faces the most formidable challenge from the implementation of AoA rules in respect of Public Stockholding for Food Security Purposes (PSH). The AoA imposes two sets of conditions on WTO members maintaining food stocks to provide subsidised food for addressing the problem of food insecurity. One, the government must build public stockholding of food grains by purchasing the grains at current market prices and must sell from food security stocks at current domestic prices. Two, when stocks of foodstuffs for food security purposes are acquired and released at administered prices, the difference between the acquisition price and FERP [Fixed External Reference Prices] must be accounted for in the AMS [Aggregate Measures of Support]."

Trade liberalisation in agriculture meant that uncertainties related to international price movements became directly significant for Indian farmers as the government did not provide any assistance to absorb these price volatility shocks (Siddiqui, 1998). Under such circumstances, Indian farmers were pushed to compete against highly subsidised large farmers in developed countries. For instance, in cotton, such uncertainty has given misleading signals to farmers who responded by changing cropping patterns and did not expect a sudden fall in prices. It has also affected farmers producing soybeans and ground nuts due to palm oil imports. Government policy changes encouraged farmers to diversify crop production, but the negative outcome had been the reduction in the land allocated for the cultivation of foodgrain (Vakulabharanam, & Motiram, 2011). Furthermore, according to National Sample Survey (NSS) data on rural development, government spending was reduced from pre-reform 14.5 percent of GDP to 8 percent of GDP in 1994 and less than 6 percent by 2000. While the opening of Indian markets to subsidised foodgrains from the US, EU, and Japan. In fact, between 1996 and 2001, the prices of most agricultural products fell in international markets by 40 to 60 percent. This meant Indian farmers had to sell their products at lower prices meaning lower returns and huge losses.

With the liberalisation, initially, the market signals were sent that changing acreage will be profitable and farmers positively responded to it. As a result, in the mid-1990s a widespread shift towards cotton cultivation took place, even in areas unsuitable for growing cotton. Farmers borrowed money often from informal sources because of the lack of availability of formal credits, coupled with a growing inability to meet debt service payments, because of both vitality of crops and prices. Landlessness rose as the National Sample Survey data shows that the proportion of rural households with no land increased rapidly. At the same time, due to shifts in cultivation towards non-food grain crops also meant a sharp decline in per capita food absorption in rural India since the mid-1990s (Government of India, 2013; Patnaik, 2003).

The problem is that if agriculture policies are formulated on the principle of 'free market' then it will have deep social and economic implications in the country. It is due to firstly, in industry, production is a continuous process,

but agriculture output takes place not on a continuous basis and its output could not be adjusted to demand conditions. Secondly, the agricultural scale of operations takes place on a much smaller basis e.g., in a country like India agriculture operations is dominated by small and medium farms than industry. Thirdly, agriculture output fluctuates due to weather and other natural factors. Fourthly, farmers holding stocks after harvests are also very limited, meaning agriculture supply cannot be increased rapidly. Fifthly, demand for agricultural commodities tends to be price inelastic. In short, in the presence of all factors, the agriculture sector requires government intervention in the markets.

Green Revolution focused on a few selected crops such as wheat, rice, maize, and cotton with the help of chemical fertilizers and pesticides, leading to the abandonment of traditional sustainable knowledge of intercropping nitrogen-fixing legumes. Land was degraded through soil erosion, alkalinity, and salinity and the increased use of chemicals made worst for soil fertility and micronutrients (Walker, 2008).

On the issue of job creation in the rural sector, the neoliberal reforms miserably failed to create jobs and diversify the economy. The trends over the past two decades indicate some employment diversification, especially in rural India. As Figure 4 indicates the employment rates for males in rural areas have remained stagnant since the early 1980s. And for rural females, the trend is more worrisome i.e., from the employment rate of 34 percent in 1983, which gradually decreased over the years, and reached very low to only 17.5 percent in 2018. There was a slight recovery in the most recent period, 2021-22, but the rural employment rate for women is far less than it was in 1983.

We must remember that these rural employment participation rates do not consider all work, but only recognized employment, including self-employment and this excludes the unpaid form of work by mainly women in the process of activities that ensure household consumption and survival. These activities include unpaid care work within the families and collecting water and firewood.

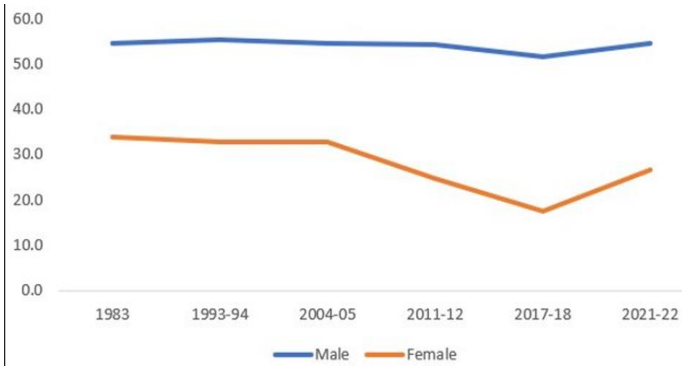


Figure 4. *Rural Employment Rates in India (%)*
Source: NSSO Surveys of Employment and Unemployment and Periodic Labour Force Surveys, various issues.

Moreover, there have been changes in the structure of employment since the 1980s, especially for male workers. The data gives a sense of the sectoral changes in employment for rural male workers. There is a decline in the share of agriculture from 77.5 percent in 1983 to 51 percent in 2021-22. The biggest shift was to construction: more than half of the declining share of agriculture is explained by the rise of construction as a major employer, which accounted

for 16.6 percent of rural male employment by 2021-22. During this period, the employment share of manufacturing remained at nearly 8 percent. This also indicates the failure of the rural industrialization strategy to create any meaningful impact in terms of job creation. However, the services such as hotels, restaurants and transport services have more than doubled their share of male employment.

We need to look at another important factor, namely, the gross capital formation in agriculture (GCFA), which rose by nearly 3 percent annually from 1961-1999 in India. This was a significant rate of growth in this sector in the developing country. However, we decomposed by decades, and the rate of capital formation shows much difference. Between 1960 and 1969, the growth rate of GCFA was an average of 5.1 percent annually, but it rose to 8.7 percent annually during the period of 1970-80. During the 1990s the total agricultural gross capital formation as a percentage of GDP declined and thereafter after 2007 stagnated. It seems decline in the public sector capital formation has adversely impacted not only total capital formation but affected private capital formation as well. In recent years it has picked up, but still lower compared to 1990 levels. Various studies have found, it was mainly due to a deceleration in the public sector expenditure (Shetty, 2006; Sen, 2003). There was significant capital accumulation in the pre-reform period compared to the post-reform period and capital formation in the agricultural sector kept pace with capital formation in the non-agricultural sector. If investment in the rural economy stagnates that would mean a large proportion of the Indian population will be experiencing poverty and misery.

It seems that the capital formation in agriculture has stagnated in real terms due to a decline in public investment, while not being compensated by an increase in private investment. It is a fallacy that public investment 'crowds out' private investment. Contrary to it, public investment in irrigation played a key role in India and made the investment in private tube wells and pump sets more profitable. Public irrigation played a very positive role, not just by making easy access to water for farmers, but also maintained the water table high owing to seepage to the canal irrigation system. Rather than discouraging, public investment attracts more investment by the private sector and becomes more critical as private investment in groundwater is reaching crisis points in various regions due to falling water tables, and even large farmers find difficulties in investing heavily in deep bore wells and pumps which is costing them more and more.

It seems that globalisation and the availability of capital from abroad means that capital investment sources are not limited by the domestic agriculture sector as was the case in the pre-reform period, but now foreign capital could be used for investment in industries and services. As Bernstein argues that the classical agrarian question makes little sense for capital. According to him, the ruling elites in developing countries are not interested in national development as we have known in the past. With the increased globalisation, the circulation of capital and commodities are no longer national, but international. Under present circumstances, economic development depends on relations to international finance and globally outsourced production and markets including commodity chains (Bernstein, 2014).

The availability of credits to farmers are very crucial for investment and for the overall growth of the agriculture sector. We find that the demand for institutional credits has grown, but it has not kept pace with the growing

demands of medium and small farmers, who have increased their sown area of non-food crops. At the same time, these sections are increasingly getting their monetary demands met by informal sources. And indebtedness among the small cultivators rose from 20 percent in 1991 to 35 percent in 2012 (NSS All India Debt Surveys). The various forms of collateral have been noted in recent years from land to crops interlinking of credits and product markets. This simply means farmers borrowing money against the promise to sell their crops to money lenders cum traders (Walker, 2008; Gulati, & Bathla, 2002).

The post-reform period also witnessed increasing agriculture distress most clearly demonstrated by 250,000 farmer suicide between 1997 and 2012 (Siddiqui, 2018b; Vasavi, 2012). Various studies have found that cotton farmers are committing suicide largely due to rising debts, failure of crops, and fall in market prices. The informal credits in rural India invariably come with other demands and pressures, i.e., the interlocking of credit with the product market. It could be that the informal credit market is invariably tied to the product market. Farmers in debt have not only to compulsively produce for the market but also must sell their produce to whom they are indebted (Vaidyanathan, 2006).

The indebtedness of farmers and higher risks appear to be the main factors responsible for the dramatic rise in the number of suicide cases in the 2000s. Of course, other factors contributed to it such as a decline in productivity, price uncertainty due to trade liberalisation, and the decline in the availability of formal credits. As most of the studies found farmers' indebtedness as the main reason for the dramatic rise in suicides, especially for the last decade. It appears that the decline in agricultural income adversely affected the small and medium farmers and suicide was seen as the only way out. Farmers shifting to commercial crops has increased risks, as it requires higher use of capital-intensive inputs than subsistence crops. Moreover, the government failed to invest in the dry land, meaning cultivation is done on marginal lands and it increases the risks further (Vasavi, 2012; Gulati, & Bathla, 2002).

Moreover, the farmers' suicides are concentrated in low rainfall regions in regions like Andhra Pradesh, Karnataka, Maharashtra, and Punjab. Suicide-afflicted households had borrowed mostly for digging and deepening wells and for the cultivation of capital-intensive high-value crops such as Bt. cotton and spices and expected to pay higher export prices. Failure to meet these expectations seems to be the key reason behind their inability to repay their debts. Various studies have pointed out that due to relatively low rainfall in these areas; meant groundwater became quite an important source of irrigation for the farmers. However, the rapid rise in the number of tube wells and pumps in these areas also led to a fall in the water levels. As a result, affected water supply, and the costs had gone up too. At the same time, cash crops' prices declined, leading to a real loss of income for the farmers. These unfavourable price trends for these cash crops are largely due to the liberalisation of imports of agricultural products. Cotton imports have gone up in the last decade, whose prices in the international market have been falling steadily. All these unfavourable trends have affected the Indian farmer's income adversely (Vaidyanathan, 2006; Siddiqui, 2021).

In short, the dramatic rise in suicides by small and marginal farmers in different parts of India over the last twenty-five years has deepened the crisis in Indian agriculture. It has happened in agriculturally developed states such as Andhra Pradesh, Karnataka, Maharashtra, and Punjab. It has brought

increased discussions among academics and policymakers about the causes that such a phenomenon may have with wider processes of change at the national levels. Though they differ in their findings, most academics have tended to attribute this crisis to the neoliberal reforms that have increased the burden on small and medium farmers and agriculture in general (Vakulabharanam, & Motiram, 2011; Siddiqui, 2021; Patnaik, 2003).

4. Food security, food sovereignty and sustainable development

In the most populated country like India, it is very important to give greater emphasis on food security because India's food demands could have a large impact on world food prices. And food sovereignty is also important so that the rich countries do not pressurise for policy change in return for food during the crisis as we have seen more recently during the Ukraine war as indicated in Figure 5.

For example, the extraordinary world price fluctuations in food commodities increased by around three and a half times between January 2007 and June 2008. However, during this period the price hike in some large economies like India and China had dealt better compared to many Sub-Saharan food-importing countries. The rice prices, for example, increased by 30 percent over this period, despite the high world price volatility. Also, China's food self-sufficiency in food had helped the country to insulate its population from the effects of high world prices in the main food commodity prices. In contrast to this, Indian rice is also staple food, and a large proportion of the population was adversely affected by the increased price of rice in 2008. However, after the fall in global food prices, the retail price of rice in Indian markets was still 60 percent higher in May 2009 than in January 2007 (Bernstein, 2014).

Food security is also very important to protect poor households from food shortages. As Figure 6 indicates that many populations suffer from food insecurity in South Asia and therefore, India must pay greater attention to protecting people from food insecurity. Food security is defined by the FAO (2003) as: "the availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices." (Cited in Patel, 2009: 664).

The main reason for food insecurity in India at present is the decrease in purchasing power among the poor sections of the population, coupled with the insufficient functioning of the TDPS and a decline of government policy initiatives to support measures to protect the poor. These include food-for-work programmes, and public spending on rural development projects like health, education, and power. Finally, various studies show low agriculture-growth states like Bihar, Madhya Pradesh, and Orissa have low levels of food security, however, higher-growth states like Gujarat and Rajasthan still have high food insecurity among the rural population. Thirty years of neoliberal reforms were introduced, this has led to reduced rural credit, cuts essential services like health and education, dismantled the public distribution system, and lowered the taxes on the wealthy to attract investment and promote higher growth and a 'trickle-down' effect. However, it resulted in increased socio-economic inequalities and narrow sectoral growth.

Figure 5. *World Food Prices*
Source: FT, 12/7/21. [Retrieved from].

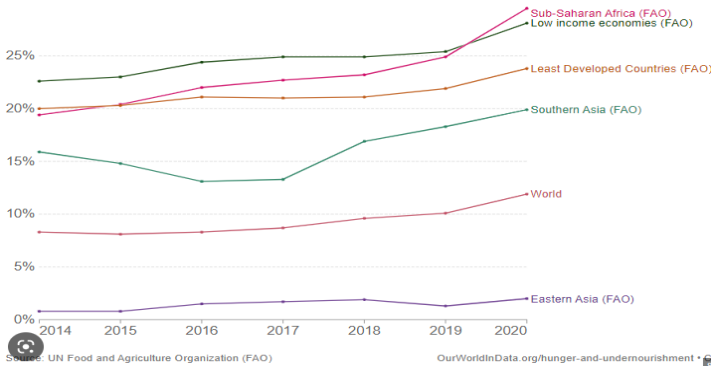


Figure 6. *Share of Population with Severe Food Insecurity, 2014 to 2020.*
Source: UN FAO. [Retrieved from].

The definition of food sovereignty was elaborated by World Forum for Food Sovereignty in Nyéléni, Mali: "Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems. It puts the aspirations and needs of those who produce, distribute, and consume food at the heart of food systems and policies, rather than the demands of markets and corporations. It offers a strategy to resist and dismantle the current corporate and food regime.... It depends on the interests and inclusion of the next generation. Food sovereignty prioritises local and national economies and markets and empowers peasants and family farmer-driven agriculture. It ensures .... the right to use and manage lands...." (Cited in Patel, 2009: 673-4)

In 1991, in the face, a rising foreign debt crisis and balance of payments India decided to accept the 'economic liberalisation' policy and agreed to dismantle the 'license raj' system of tight controls and permits placed since the 1950s. The neoliberal policy took the form of a 'structural adjustment' programme imposed by the IMF and World Bank. The neoliberal reforms included deregulation, privatisation, and devaluation of the domestic currency. Soon after, the inflows of foreign capital rose sharply, but a large proportion went to real estate, financial sector, and services, rather than manufacturing or agriculture. As Bhaduri notes: "the Fiscal and monetary policies of the government need to comply with the interests of financial markets. .... Since the private banks and financial institutions usually take their lead from the IMF and the World Bank, this bestows on these multilateral agencies considerable power over the formulation of government

policies. However, the burden of such policies is borne largely by the poor... Inequality and distress grow as the state rolls back public expenditure in social services like basic health, education, and public distribution and neglect the poor, while the 'discipline' imposed by the financial markets serves the rich and the corporations" (Cited in Walker, 2008: 562).

The PDS (public distribution system) was introduced in the mid-1960 to help the poor people, but after the neoliberal reform, the government is under pressure to remove food subsidies. Through the PDS system foodgrains were moved from food surplus states to food deficit states. The decline of cheap credits and privatisation of electricity resulted in a massive increase in electricity prices which were subsidised before. The public funds available for irrigation projects were also cut down, which adversely affected land productivity.

The World Bank and IMF pressurised India to follow their rules that 'governments should not sell at prices other than global prices', in response to this the government targeted PDS food subsidy by dividing the population into two groups – those grouped as lying 'above' and 'below' poverty line. This policy excluded millions of poor people from the list to receive essential commodities at affordable prices. The data shows that from 1992 to 2010, India experienced declining rates of growth in yields per hectare for both food grains and non-food grains. The output growth of agriculture was only 2.2 percent for the same period. This was much lower than in the 1980s when agricultural growth was around 3.4 percent per annum. Furthermore, growth rates for cereals were, in fact, negative averaging -0.11 percent and -0.31 percent respectively.

The poor performance of agriculture clearly indicates that farmers are facing declining incomes and both falling land productivity and crop prices, while the costs of production have risen due to the withdrawal of subsidies.

Large farmers have diversified their source of income e.g., real estate, trading, urban property etc. On the other hand, small farmers and agriculture workers, who have been forced to migrate under 'distress' to towns, are mostly employed in the informal sector on low wages and insecure jobs (Vakulabharanam & Motiram, 2011). Moreover, there is the diversion of farmland real estate and industrial development, which means less land is available for cultivation. Walker (2008: 579) argues: "Although the rural workforce has continued to grow - rising from 191 million in 1993-94 to 257 million in 2004-05 – employment growth in agriculture has fallen to virtually zero since the 1980s... Since the growth rate of agriculture is lower than the growth rates of both workforce in agriculture and rural population., with only limited employment outside agriculture, the clear implication, as the Report of Agriculture puts it, is that 'per capita income in agriculture is declining'..."

To achieve sustainable development of the economy, the agriculture sector should play a crucial role. The long-term growth strategy must not ignore the agriculture sector. There is doubt about the feasibility of export-led growth for a country like India. Overall growth could be achieved by a substantial increase in public investment in areas such as irrigation, power, rural infrastructure, and easy access of formal credits. These measures could lead to an increase in agricultural productivity and a rise in farmers' income and the expansion of domestic demand for industrial goods (Storm, 1995; Kaldor, 1967).

Most of India's population continues to depend heavily on the agricultural sector for income. More than two-thirds of the population (nearly 800 million) lives in rural areas and to a large extent their livelihoods depend on the income and performance they produce (FAO, 2003). Since the 2000s we have seen a decline in rural employment and incomes, which resulted in a lowering of aggregate demands. There are various reasons for the agrarian crisis including changing climate and the uncertainties associated with the monsoons and by July 2001 quantitative restrictions were removed on imports. This means earlier protection through high tariffs on agricultural imports has been taken away and as a result, cheap imports of food from developed countries rose sharply.

In fact, as the agriculture sector began a downward spiral globally in the late 1990s, most of the developed countries kept subsidising their farmers, which enable them to sell food grain at competitive prices on the global market. However, according to the WTO rule, the Aggregate Measure of Support (AMS) reduction for a country is not commodity specific, which has allowed the developed countries to keep on supporting some commodities, while still meeting WTO's reduction commitments. Moreover, most commodities are heavily subsidised by developed countries that are also produced and exported by developing countries like India. India produces surplus commodities like wheat, coarse cereals, dairy, beef, and sugar and these products accounted for over 87 percent share of the total value of export subsidies for all products.

5. Conclusion

Agriculture's share in India's economy has progressively declined, while higher growth rates of the industrial and services sectors did not create enough jobs to make any dent in rural unemployment. The sector's importance in India's economic and social fabric goes well beyond this indicator. Nearly three-quarters of India's families depend on rural incomes and most of India's poor (some 770 million people or about 70 percent) are found in rural areas. And nearly two-thirds of India's workforce is still dependent on agriculture, the persistence of poverty and food insecurity in rural areas has resulted in a rise in migration and urbanisation, which has joined the "informal sector" in the labour markets.

In the agriculture sector, since the neoliberal reforms were introduced, government spending had been reduced drastically. The post-reform crisis seems to be not only in terms of declining growth rates in the agriculture sector compared to the pre-reform period, declining per capita food availability, and stagnating investment but also in terms of slowing down productivity and yield. Thus, reducing rural poverty and food sovereignty via agricultural development should be a major concern but seems to have been overlooked by the government.

It was claimed that pro-market reforms would lead to a fall in the share of the population dependent on agriculture and a rise in the share of the population drawing their income from manufacturing and services. India is supposed to follow the same route, but it seems not logical in the Indian case with the existence of huge labour reserves. Reduction in rural unemployment without active public measures seems to be impossible to achieve, especially in the absence of labour-intensive growth strategies.

The global food system worked well when food commodities prices in international markets were low, and moreover, stable energy prices allowed food to be produced with the help of new inputs in concentrated regions and transported over long distances to meet food demands. However, a sharp rise in oil prices resulted in a rise in food prices in 2022.

The capital available for investment in the industrial sector and the sources have risen, including international financial capital. Moreover, cheap food and raw materials are now available in the world market as opposed to the previous position where it was solely through domestic productivity gains in India. It means that earlier arguments that agricultural surplus which was seen as a very important source of capital provider for industrialisation, as a supplier of raw materials and markets for industrial goods, has lost its importance. As a result, in recent years the current crisis in agriculture of profit squeeze due to this sector is being neglected by the investors and the Indian government.

Moreover, the neoliberal reforms were unable to address the issues of uneven development within India, including differences in regional growth rates. Judging by employment distribution, the process has progressed significantly in a few states where there exists highly productive capitalist agriculture such as Haryana, Punjab, Kerala, Tamil Nadu, and West Bengal, where less than 51 percent of the workforce was employed in 2018. On the other spectrum, such as Bihar, Orissa, Madhya Pradesh, and Jharkhand, with low agriculture productivity more than 66 percent of the workforce is engaged in this sector.

The study finds that Indian agriculture is overburdened in the sense that a very high proportion of the population is dependent on this sector, while it has low productivity and low capital investment. It seems that the agriculture sector a has much greater impact on reducing poverty and improving food security than other sectors of the economy. Therefore, public investment is important as it played a positive role in the pre-reform period. Public investment in land and water management seems to be crucial for improving the agriculture sector in the long-term growth and viability in India.

The challenge of food security requires an ability to deal with increasing food shortages of ever-expanding population growth in India. (Walker, 2008) The adoption of neoliberal policy resulted in agriculture stagnation, declining food consumption among the rural poor, and a rise in migration to cities.

The pandemic created food shortages, price rose sharpy and demonstrated the urgency of food security and food sovereignty and also for transition to a more ecologically sustainable and resilient food system. We find that the main determinant of food insecurity in India at present is the shrinking of the agrarian sector and the reduction in policies to combat rural poverty. It is clear now that effective government intervention to support foodgrain price stability requires fiscal intervention, which is not possible under the neoliberal policy framework. This seems to be an important barrier to contain food prices in many developing countries.

The study recommends that for successful inclusive growth, agricultural growth is a prerequisite. It is important to implement land reforms, improve institutional credits and increase public investments in rural infrastructure, especially to assist small and marginal farmers and to diversify the rural economy. Until a level playing field is created across the world, otherwise trade liberalisation in agriculture will simply prop up developed countries' farmers at the expense of farmers in developing countries like India.

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