



## ROLE OF AGRICULTURE AND MANUFACTURING UNIT IN THE DEVELOPMENT OF INDIAN ECONOMY IN 21<sup>ST</sup> CENTURY

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### ABSTRACT :

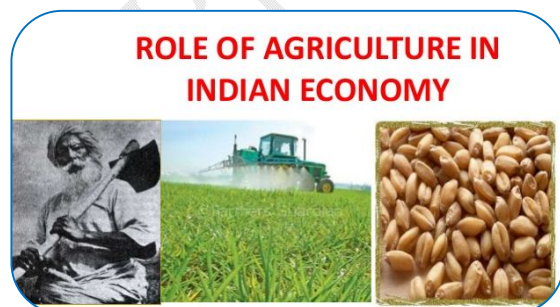
*The Indian state has been more penetrated by social actors than many East and Southeast Asian states. Unlike China, India could neither abolish private enterprise nor could it embrace globalization with the same speed and ferocity. Both complete state-driven nationalization and state-driven globalization would demand a state, which would have much greater command over interest groups like industrialists, farmers and trade unions. Policies favoring economic growth and development in India needed to evolve gradually after building a social consensus on those policies. This is a model of development driven by a relationship between the state and society, where the power of the state, even in its commanding moments, was moderated by the power of social actors. Developmental ideas were debated within the state. Substantial economic policy change would require building upon a historical path of gradual changes in ideas and policies, punctuated by economic crises. This paper demonstrates the development of Indian economy in 21st century.*

**KEYWORDS :** Agriculture Sector, Economic Development, Manufacturing Sector, Sabka Sath Sabka Vikas.

### INTRODUCTION

It is a story of getting to higher rates of economic growth in a gradual and circuitous way after building a policy consensus among diverse stakeholders. Economic crises aided the arrival of a new consensus.

Role of agriculture in growth of Indian economy and overall development hardly needs any elaboration. However, this role needs to be re-oriented in the light of changing environment and requirements and to meet the new challenges, and, also to harness new opportunities. This will require a shift in our approach and thinking towards agriculture from “pushing for incremental change” to “transformational change”. Further, agriculture is at the nexus of three of the greatest challenges of the 21st century – sustaining food and nutrition security, adaptation and mitigation of



climate change, and sustainable use of critical resources such as water, energy and land. Agriculture is also acquiring renewed importance for gainful employment due to failure of manufacturing sector to pull labour out of agriculture and to keep pace with the growth in workforce.

India's achievements in agriculture sector, though impressive in some areas and states, have remained lower than the potential. The main reason

for this is the complacency of our leaders, particularly research leaders, with our achievements. We generally compare our contemporary food situation with the situation of food scarcity of mid 1960s and draw satisfaction from the fact that now we are not facing food scarcity. Our mindset is fixed in comparing agriculture of 2000s or recent years with agriculture of 1965-67 rather than comparing agriculture achievements with the achievements of India's other sectors and other nations. What has been achieved in agriculture is not compared with what is achieved in space, IT, telecom, services, automobiles, medical science, transport etc. Between 1965-67 and 2000s, we are much more different in all sectors and spheres of life than in agriculture but we do not assess achievement of agriculture against the challenging yardsticks. Surely, agricultural achievements are big compared to mid 1960s but they look dwarf compared to other yardsticks.

The present government has set vision for New India that involves "Sabka Saath Sabka Vikas". Transformation of agriculture sector is crucial for achieving this vision as 44.2 per cent workforce in the country is employed in agriculture (NSO 2019) and thus depend on agriculture for their livelihood (NSO 2019). There is large gap between income of agriculture workers and non agriculture workers (Chand et. al. 2015; Chand 2019). Poverty and under nutrition in the country are concentrated among agricultural labour and small and marginal farmers. There is lot of concern relating to rural distress. If current trends in agriculture are not changed there will be little improvement in reducing income gap between agriculture and non agriculture income and alleviating rural distress. It has been empirically demonstrated that agriculture growth is significantly beneficial for reducing poverty and increasing per capita income (Virmani 2008). Beside inclusive growth, agriculture matters for health and nutrition, sustainability, climate change and quality of life in the country. All these factors underscore the need for a new vision for agriculture as we move forward in the 21st century.

Some aspects of the new vision for agriculture are discussed below by grouping these under following heads:

1. Growth to efficiency
2. Employment Generation
3. Food Security to Nutrition and Health
4. Shortage Management to Surplus Management
5. Input Intensive to Knowledge Intensive Agriculture
6. Climate Change and Sustainability
7. Production and Producers
8. Policy Interventions, Regulations and Reforms

### **Growth to Efficiency**

Since 1970-71, agricultural output and value added in agriculture in India moved on a growth trajectory of around 2.8 per cent in most of the period. The growth rate moved up and down depending upon the increase/decrease in real prices of agriculture commodities. This can be seen from Fig. 1 which presents movement of terms of trade for agriculture sector and Table 1 which shows changes in terms of trade (ToT) for agriculture during different phases of ToT and rate of growth in agriculture in these phases. Fig. 1 contains two trends

- i) ratio of wholesale price index (WPI) for agricultural commodities relative to WPI for non agricultural commodities since 1971-72, brought to base 2011-12 and
- ii) ratio of implicit price deflators of gross value added (GVA) in agriculture and non agriculture derived from the new series on GVA with base 2011-12.

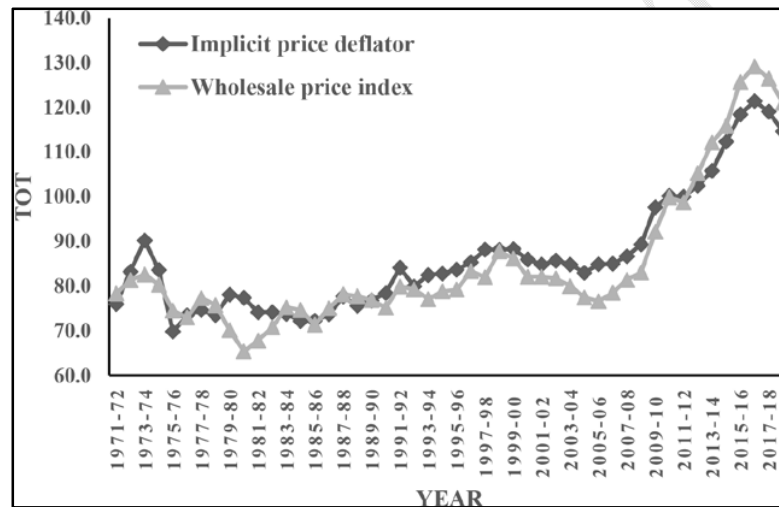
As can be seen from Fig 1, the ToT for agriculture followed a declining trend during 1971-72 to 1980-81, increasing trend after 1980-81 which continued till 1998-99. From late 1990s to 2005-06 there was a decline in ToT which was again followed by increase till 2016-17. Based on these movements in ToT the entire period from 1971-72 to 2016-17 can be divided in four phases viz.

- i) 1971-72 to 1980-81 which marked significant fall in ToT for agriculture
- ii) 1981-82 to 1998-99 which marked significant increase
- iii) 1999-00 to 2005-06 which marked modest decline and
- iv) 2006-07 to 2016-17 which represents very sharp increase in ToT for agriculture.

It is interesting to observe that growth rate in GVA in agriculture moved up and down according to the increase/decrease in real prices of agriculture.

**Fig. 1**

**Terms of trade for agriculture as measured by ratio of implicit price deflators and WPI agriculture and non agriculture sector**



**Source:** Estimated from:

<sup>1</sup>New data series on GVA with base 2011-12, National Accounts Statistics, GOI.

<sup>2</sup>Wholesale Price Index, Office of Economic Adviser, Ministry of Industry, GOI.

**Table 1**

**Changes in terms of trade for agriculture and growth rate in GVA agriculture in different periods 1971-72 to 2016-17**

Period	Change in Terms of trade %	Annual Growth rate in GVA agri %
1971-72 to 1980-81	-16.55	1.83
1980-81 to 1998-99	34.28	3.38
1998-99 to 2005-06	-12.74	2.30
2005-06 to 2016-17	68.62	3.29

**Source:** Same as in Fig.1.

**Future Demand for Food**

The present and projected level of aggregate demand for food commodities is presented in Table-2. India currently produces about 726 million tonnes of food to meet the food demand of 1.3 billion people. Three-fourth of this food comprises food of plant origin (cereals, pulses, edible oil, sugar, fruits, vegetables, condiments and spices, tea and coffee) and the remaining one fourth comprises food of animal origin (milk and its products, meat, egg, fish). In next 15 years, 40 per cent more food will be required to meet domestic demand. This involves 2.3 per cent annual growth. In case the country harnesses the export market and raises agricultural export share in GDP from present level of 12 per cent to 20 per cent, then the required annual growth turns out to be 2.64 per cent. These increases do not look very high when compared with the achievements of the last 50 years. Since 1965, agri-food production in the country has risen by more than 500 per cent. Recent 15 years witnessed more than 50 per cent increase with no increase in the area under cultivation. This growth resulted mainly from intensive cultivation, increase in use of fertilizer and other agro-chemicals, higher use of water and irrigation, improved seed and technology and a favourable price environment for agriculture. Based on this, it looks India will not have any serious problem in meeting aggregate food demand in next 15 years or so. The challenge comes from composition of food and meeting nutrition requirement. There is also talk about fortification of food to improve nutrition intake while options for biofortification, which is considered superior to food additives, show promising results in some crops.

**Table 2**  
**Current Production and Demand for aggregate food commodities towards 2031-32**

Current food production 2015-16	726 million tonnes
Annual growth in demand in next 15 years	2.30 per cent
Total increase in food requirement by 2031-32	40.7 per cent
Quantity of food required by 2031-32	1016 million Tonnes

**Source:** Estimated by the Author.

**Economic Development in Manufacturing Sector**

In developing countries like India where the industrial structure is largely dominated by micro, small and medium enterprises (MSMEs), any discussion on planning for 21st century industrialisation is bound to raise concerns about the future of these enterprises especially during such times when it is expected that the manufacturing processes would be largely driven by digital man-less technologies in the Fourth Industrialisation phase of the 21st century (Schwab 2016). It is expected that most of the manufacturing processes would be performed with new technologies. The usage of robots, 3D printing, artificial intelligence and similar technologies would be more rampant in the most industrial processes. Large batch manufacturing would reduce cost of production to a considerable extent and thus, the world markets will get flooded with a variety of cheap, durable and better-finished products manufactured through automatic production systems, which will reduce further the comparative advantage of MSMEs – all this will place survival of MSMEs at stake in an era of competition. It is also expected that a large part of Fourth Industrialisation will happen in the developed world and thus, the contours of global production will shift from the South to the North. Under liberal trade regimes, cheap machine-based production will find routes in global markets and thus, will raise further the standard of living of the

masses. However, this may pose an alarming situation for developing countries that are having an abundant supply of 4 manpower. The implications of such industrialisation for livelihood and meaningful engagement of workforce have been largely discussed in literature and the concerns are raised about the likely future of jobs (Deloitte 2018; WEF 2018). It is doubted whether there would remain any opportunities for meaningful employment or the labour-processes will get displaced by machines? Will there emerge new and innovative ways of doing work? What role would be played by educational systems? Along what lines, these systems will get modified to contain emerging realities that pose the risk of leaving those out, who will not possess minimal skill to perform some task in a more cost-effective manner? Along with China, India in the 21st century is expected to emerge globally as the third largest economy (Wilson and Purushothaman 2006). With huge stock of working age population, cheap raw materials and large and vibrant market, the onslaught of Fourth Industrialisation is fraught with both opportunities and threats in this country. A careful review of these opportunities and threats is therefore required to help policy-makers in gaining a balanced view of expected gains from Fourth Industrialisation. It will also help in adjusting our sails and thus, planning for better outcomes. Given this background, this paper aims at providing a balanced overview of emerging opportunities and threats of Fourth Industrialisation especially in the Indian context. While discussing these, the study brings in the role of MSMEs in a changing economic environment.

**Emerging Opportunities for India to Gain from Fourth Industrialisation**

As far as India is concerned, the onslaught of Fourth Industrialisation is going to generate a vast set of opportunities both directly and indirectly. In some of the segments such as automobile manufacturing, the usage of technologies, i.e., Robots is already going on. Mani (2017) reports that the density of robots in the Indian manufacturing sector is increasing at a slow rate and most of robot usage has confined to automotive industry in general and in the application area of welding in particular. It is expected that the usage of other technologies would take place at a relatively fast pace in segments such as pharmaceuticals, food processing, health, banking, tourism etc. In fact, such adoption of technologies would be made fast in those processes or activities which are repetitive and possess greater possibilities of automation and process control. Large and growing market in India with a rising middle class will provide further boost to the adoption of Fourth Industrialisation processes in these segments. The availability of a relatively large stock of working age population, in both absolute and the relative sense, will provide further opportunity to India to gain from Fourth Industrialisation. In comparison to other major economies of the world, India is going to have the largest stock of population in the age group 15-64 years in the post-2020 period and this comparative advantage prevails for 21st century (Table 3).

**Table 3: Working Age (aged 15-64 Year) Population Size in Selected Economies (in Million)**

Year	India	China	United States	Japan	Germany
1950	223.43	341.13	103.17	49.45	47.09
1960	254.57	373.09	112.44	60.06	49.24
1970	309.08	460.90	129.57	72.41	49.56
1980	398.06	592.32	151.07	79.54	51.50
1990	506.79	768.97	165.89	86.73	54.70
2000	640.95	878.51	186.05	87.02	55.29
2010	787.77	1002.84	206.34	82.46	53.31

2020	924.93	1002.17	214.64	74.70	53.42
2030	1028.78	973.60	217.81	69.90	48.98
2040	1097.81	882.09	226.83	61.65	46.14
2050	1123.43	814.86	236.42	55.57	44.71
2060	1105.25	717.17	239.80	52.19	42.13
2070	1062.03	681.61	243.67	49.45	41.02
2080	1011.11	628.05	248.13	46.90	40.45
2090	954.84	583.78	250.28	44.93	39.09
2100	897.29	555.30	250.89	43.23	37.89

**Source:** United Nations (2017)

With several hands to work and new emergence of possibilities in various segments, it will be a great opportunity for India to engage its workforce in various productive avenues of work. At present, the share of manufacturing sector workforce in the total workforce is low and most of it is concentrated in unorganised segment as the organised segment, being capital intensive, is not generating adequate employment opportunities. Such industrial allocation of manpower would require a serious rethink and for this, an industry-specific approach and the manpower assimilation plan need to be worked out. Industry-level master plan documenting their vision, growth possibilities and potential markets, need to be prepared along with specifying each industry's ability to generate productive employment at various layers. An optimal capital-labour substitution ratio need to be worked out at which the industry should be not only able to grow but also generate productive and decent employment. As per Census of India (2011), 31.16% of the Indian population resides in urban areas and it increased to 33.6% in 2017. In comparison to other countries such as China (57.96%), Brazil (86.30%) and South Africa (65.85%), the magnitude of India's urbanisation is very low. There lies the need for raising these urbanisation levels. Moreover, the quality of urbanisation needs to be improved. Most of the Indian urbanisation is concentrated and there lies greater pressures to ensure the delivery of quality services linked with electricity, water and 7 sanitation. With the emergence of new industrialization, there is going to be a change in the existing situation and there would be the requirement for the building up of a sound infrastructural base. For this, a city level planning would be ideal. A positive move is made by the government in this direction through its Smart City Projects. Similarly, a drive to develop the slums and providing better housing and shelter would play a critical role in providing further boost to the industrial growth.

## CONCLUSION

There has been a noticeable acceleration in the level of confidence and the performance of the Indian economy in the 21st century. The short-term prospects, despite recent global uncertainties, continue to be, by and large, benign for India. Over the medium term, there are several challenges and opportunities. The public policy may, therefore, have to specially focus on these aspects in order to meet not only the expectations of the global community but also, and more importantly, the aspirations of millions of people in India, particularly the poor and the underprivileged from diverse backgrounds.

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