

Structural changes in Haryana Agriculture

Abstract

The present investigation was carried out for Haryana state for the period 1970-2021. Economic development has been regarded as the process of structural transformation where the relative share of agriculture in national output declined while contribution of industry and service sectors augmented. Statistical average, percentage and CAGR were calculated. The selected indicators to assess structural change in the state are sectoral composition of output, sectoral labour shares and capital formation. The performance of agriculture was examined on the basis of indicators of agricultural development like yield of major crops, cropping intensity, irrigation intensity, density of tractors, consumption of fertilizers etc. Haryana is predominantly an agrarian state, but it has accelerated the growth rates in industrial and service sectors also. The main findings: the pattern of structural change in Haryana is in tune with the national economy of India and agriculture sector needs more attention on the part of policymakers to provide incentives for adoption of new farm innovations.

Keywords: Structural Change, Agriculture, Haryana Economy.

1. Introduction

Structural change indicates qualitative transformation and evolution of the economic systems, usually marked by technological progress and organizational changes. Technological factors, knowledge and institutions are all elements that contribute to the process of structural change. The structural change is a process of combining economic growth with changing share of different sectors in gross domestic product (GDP) and labour force. It follows a sequence of shift from agriculture to industry and to services. There is a need for the countries to transform their structure, away from agriculture with low productivity of labour towards industrial activity with high productivity of labour. (Clark 1940, Fisher 1940, Lewis 1955, Kuznets 1966, Rostow 1960). Every underdeveloped economy is characterized by larger share of agriculture in domestic income, with development, the share of industrial sector increases and that of agriculture falls and as the level of development rises, the share of services sector increases. The structural shift and changing sectoral shares happen not only in domestic product but also in the segments of employment. With structural change and economic development, the relative importance of agriculture sector drops, along with rising share of secondary and tertiary sector. Such type of perceptions has led to the underestimation of the role of agriculture in the process of economic development. Haryana economy, predominantly an agrarian state has developed on every front both agriculturally and industrially. The present paper is an attempt to comprehend the structural change and performance of agriculture in Haryana. The present study is divided into following sections: Section 1 Introduction Section 2 Methodology of research. Section 3 presents results and discussions. Section 4 mentions the conclusions and suggestions.

2. Methodology

The stylized set of facts is that structural change is positively related to economic growth and with development, the share of agriculture declined, of industry and service sector upsurges. The study is carried out to find whether this pattern exist in the economy of Haryana. The selected indicators of structural change are sectoral composition of output, sectoral labour shares, capital formation. The performance of agriculture is examined on the basis of indicators of agricultural development like yield of major crops, cropping intensity, irrigation intensity, density of tractors, consumption of fertilizers etc. Data from published sources like Economic Survey and Statistical Abstract of Haryana were collated for last five decades (1970-2020).

Statistical average, percentage, growth rate and compound annual growth rate (CAGR) were worked out. Cropping intensity = $\frac{\text{Total cropped area}}{\text{net sown area}} \times 100$; Irrigation intensity = $\frac{\text{Net area irrigated}}{\text{net area sown}} \times 100$; Density of tractors = $\frac{\text{Number of tractors}}{\text{total cropped area}} \times 1000$.

Haryana profile

Haryana, part of the north Indian plains, is characterized by Shivalik foothills in the north and Aravalis in the south, with an elevation ranging from 200 to 300 meters bordering Punjab, Himachal Pradesh, Uttar Pradesh, Rajasthan. The climate features three main seasons i.e. summer, monsoon, and winter with temperatures varying from -2°C in winter to 49°C in summer, and rainfall ranging from 300 mm to 1000 mm annually. The state has a reported area of 37.58 lakh ha, with 95.20 percent as net sown area. Its fertile alluvial soil supports crops like rice, wheat, cotton, pearl-millet, mustard and sugarcane, though pockets of saline and alkaline soils exist. Small and medium land holdings dominate with 65.30% of total holdings. Mechanization and use of modern inputs like fertilizers and high-yield seeds have greatly augmented since the introduction of Green Revolution in the state. Irrigation area covers 80.45% of net sown area, with tube wells and canals as primary sources. Forest cover has lessened significantly to 0.73% of total geographical area. Livestock farming is prominent with large number of murrh buffalo having milk production of 105.14 lakh tonnes in 2020-21 with extensive animal care and treatment units.

3. Results and Discussion

Agriculture sector contributed 60 per cent of total economy in 1970-71, gradually declining to 17.71 per cent in 2020-21 while contribution of industry sector inclined from 21 percent to 31.29 percent in same period. (Singh et al., 2023) The share of service sector amplified manifold from 19 percent in seventies to 51 percent in 2020-21 indicating more than two and half times. Compound Annual Growth Rates (CAGR) of these sectors in last thirty years (1990-2021) showed varying growth trajectories. (Aggarwal and Moudgil, 2015), (Choudhary et al., 2023), (Goel, 2019). This shift reflects Haryana's economic diversification and development, with growth in industry and services driven by factors such as policy reforms, infrastructure development, and increased investment.

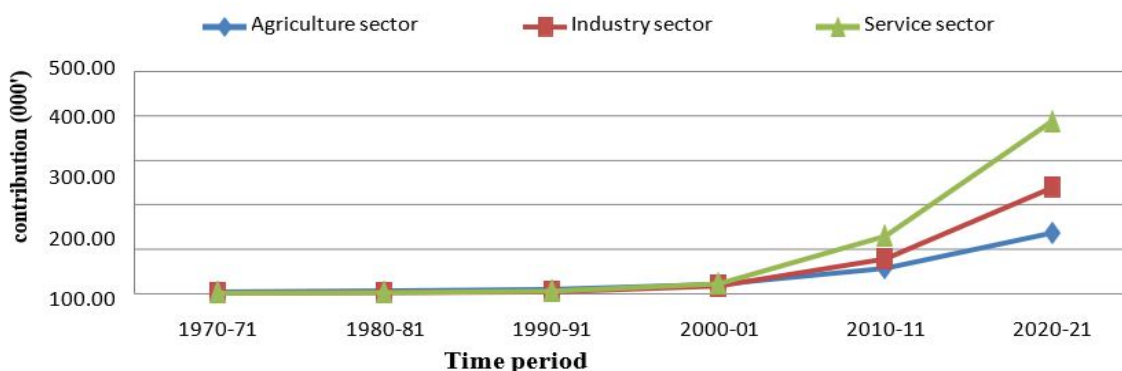


Fig 1. Economic diversification and development in different sectors

1.1 Status of gross state domestic product in Haryana

The gross state domestic product (GSDP) at current prices increased from 1.00 thousand crores in 1970-71 to 758.51 thousand crores in 2020-21. Agriculture GSDP declined from 60 per cent in 1970-71 to 17.71 per cent in 2020-21 at current prices. CAGR for GSDP at constant prices was 13.89 per cent (1990-2021), indicating robust economic growth due to industrialization and expansion of information technology (IT) sector.

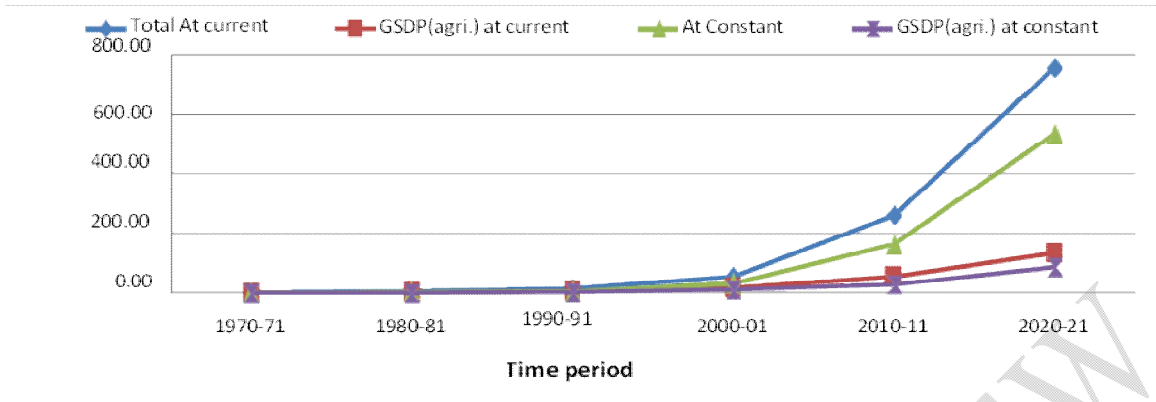


Figure 2: Status of gross state domestic product in Haryana 1970-2021.

1.2: Status of Rural and Urban Population in Haryana

Haryana's population increased from 100.36 lakh in 1971 to 253.51 lakh in 2011. Rural population decreased from 82.33 percent in 1971 to 65.12 percent in 2011 while urban population touched to 34.88 per cent of total population in 2011 owing to migration of labour from other states particularly in NCR of Haryana. Literacy rate in Haryana improved from 35.70 percent in 1971 to 69.30 percent in 2011 indicating doubling of literacy in last fifty years as result of opening of large number of educational institutions and motivational of girl education in the state. Rural literacy increased from 15.25 per cent in 1971 to 101.58 per cent in 2011. (Jaipal et. Al., 2024) Urban literacy increased from 11.74 per cent in 1971 to 64.40 percent in 2011.

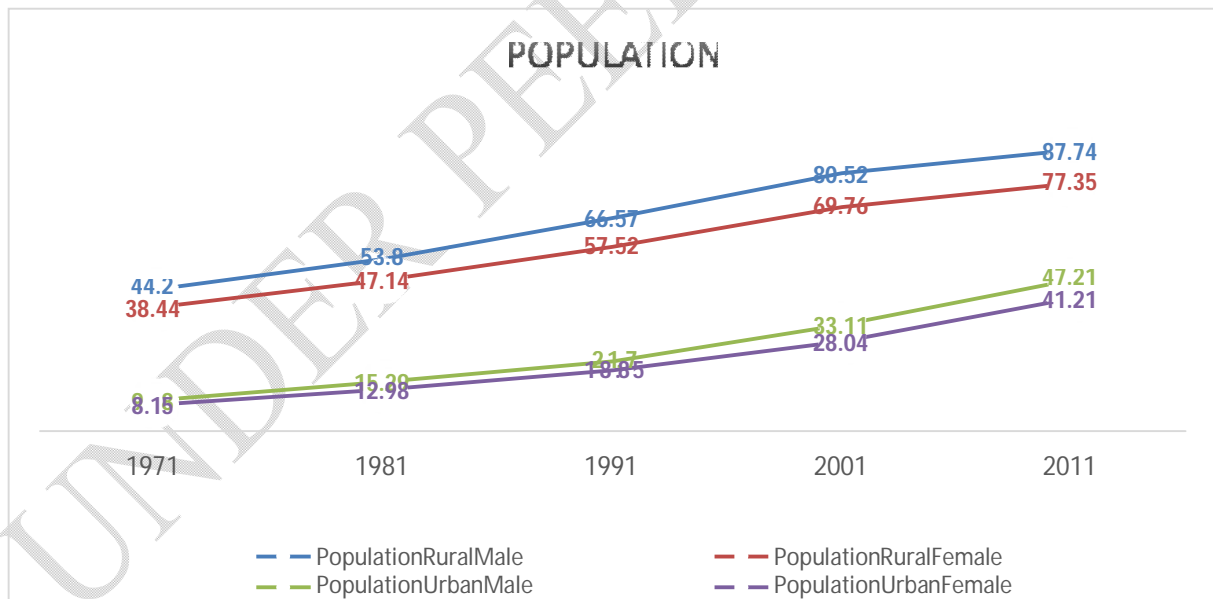


Figure 3: Status of rural and urban population in Haryana

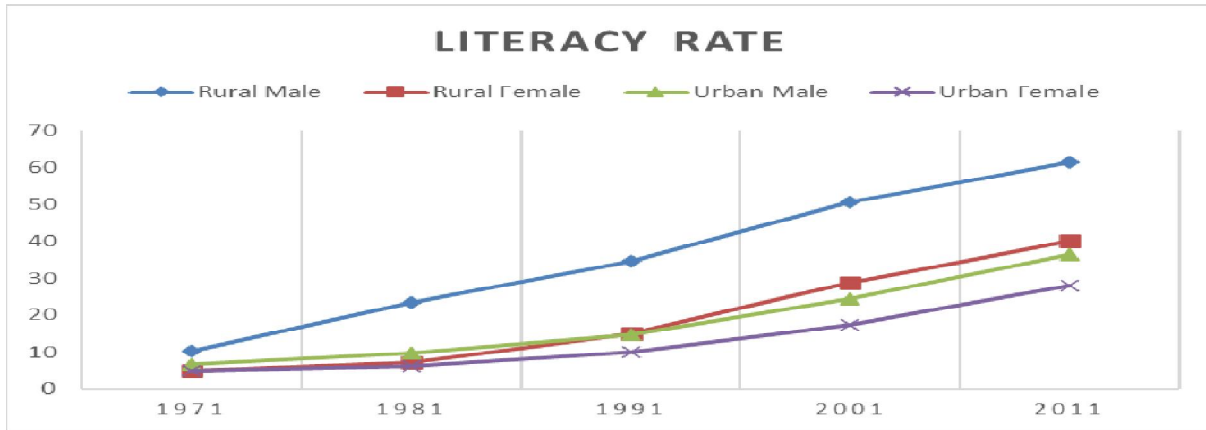


Figure4: Status of literacy rate in India and Haryana

1.3: Status of gross fixed capital formation in Haryana

Gross fixed capital formation in Haryana increased from 0.85 thousand crores (1970-71) to 104.86 thousand crores (2020-21). CAGR at current prices was 15.53 per cent (1990-2021), indicating robust capital investment. This happened with the establishment of industrial hubs, IT companies, residential areas etc in the state.

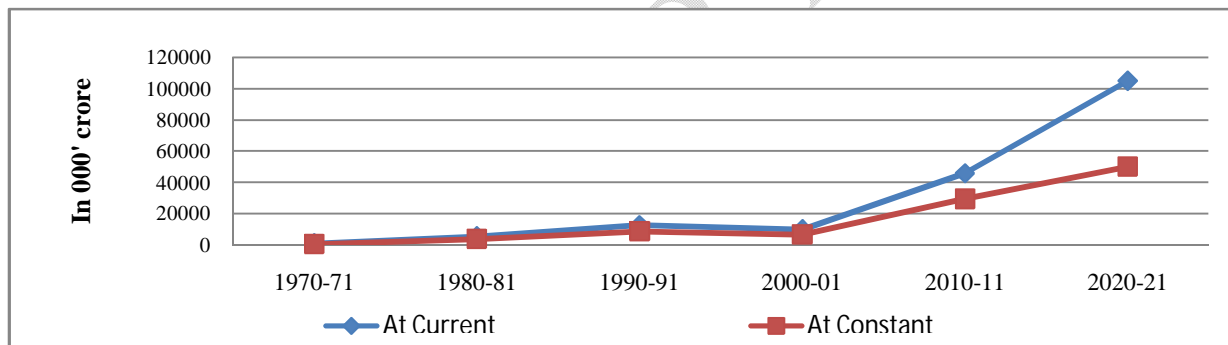


Figure 5: Status of gross fixed capital formation in Haryana: 1970-2021.

1.4: Status of per capita income in Haryana

Per capita income in Haryana augmented greatly from Rs 877 (1970) to Rs 2.29 lakh (2020) in last five decades indicating around 12% average CAGR (at current prices) in various decades. The increase in per capita income was reflected due to increase in farm productivity, increased wages of industrial labour, expansion of industry and service sector resulting manifold increase revenue of the state.

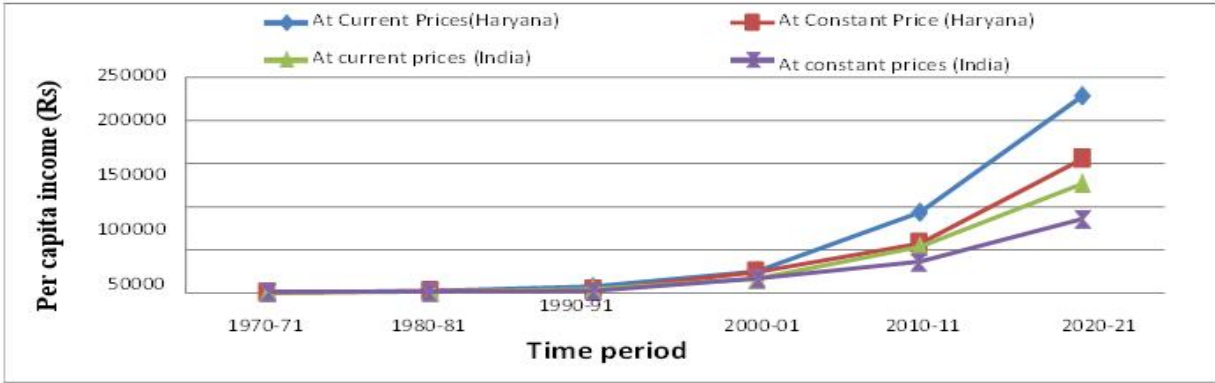


Figure 6: Per capita income in Haryana and India: 1970-21.

1.5 Status of holdings under different categories of farms in Haryana

Distribution of operational holdings shifted over the years, with share of marginal holdings (<1.0 ha) of 51.27 per cent in 2015-16. The number of medium (4-7.5 ha) and large holdings (>7.5 ha) reduced drastically over the period due to fragmentation of land holdings and diversion towards non-agriculture purposes and it reached to 14.94 percent in 2015-16 from 22.20 percent in 1985-86.

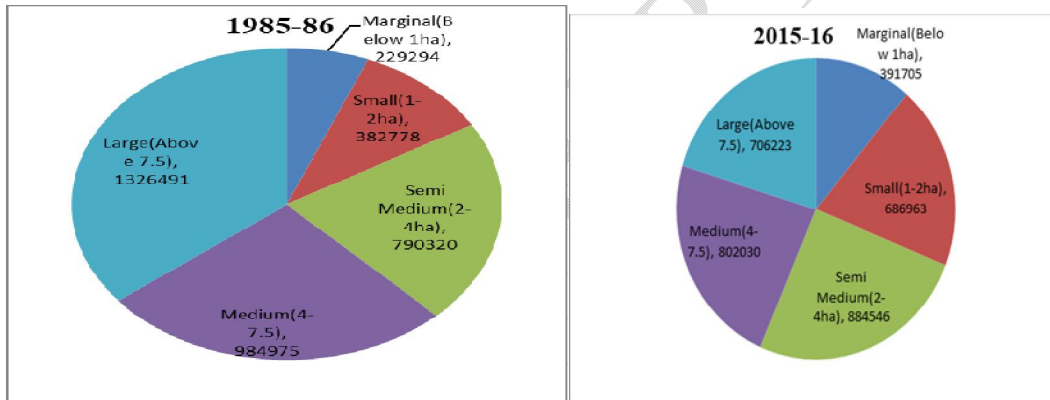


Figure 7: Status of holdings under different categories of farm in Haryana

1.6 Occupational distribution of the workforce in Haryana

The primary sector involves extracting natural resources, the secondary sector focuses on manufacturing goods, and the tertiary sector provides services. As economies grow, they typically shift from primary to tertiary sector dominance. Primary sector dominated (66.65%) for employment of workforce in seventies in the state however this pattern changes up to 2011 and tertiary sector became the largest employer (52.10%). The significant growth in secondary and tertiary sectors over the decades also witnessed. The relative share of agriculture sector in total employment has been declining over time, but still majority of the population is employed in this low productivity sector. On the other hand, the share of manufacturing sector has remained, more or less, stagnant, while the share of services sector in total employment has been rapidly rising as indicated Sethi and kaur, 2015, Sanitha and Singla, 2016, Kumar et al., 2024.

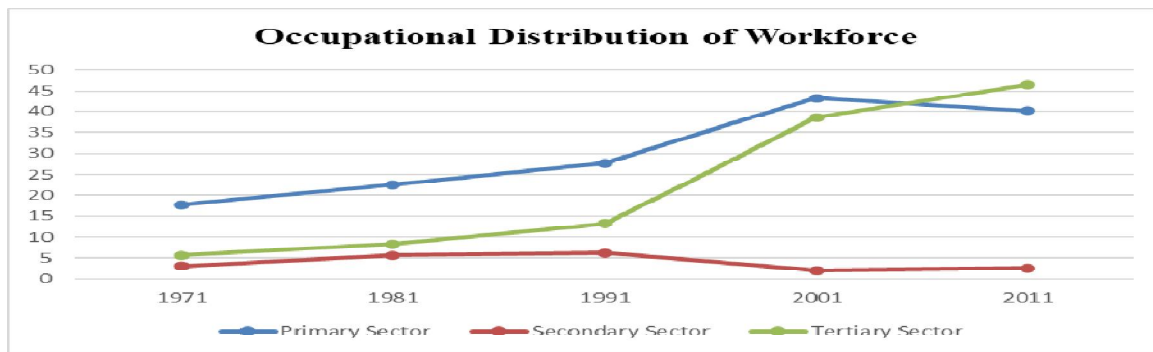


Figure 8: Occupational distribution of workforce in Haryana: 1970-2011

1.7: Status of area coverage under major crops in Haryana

The cultivation of fine cereals (wheat and paddy) improved largely while pulses cultivation and coarse cereals except pearl millet declined over the years. The area from less remunerative crops (pulses, barley, maize, jowar) diverted towards more profitable crops like wheat, paddy, cotton, and sugarcane, mustard as a result of expansion in irrigation facilities, improved market infrastructure, active participation of govt agencies in procurement etc. CAGR for principal crops showed positive growth for wheat (1.71%), paddy (3.46%) and total food grains (0.01%) over the period (1970-2021).

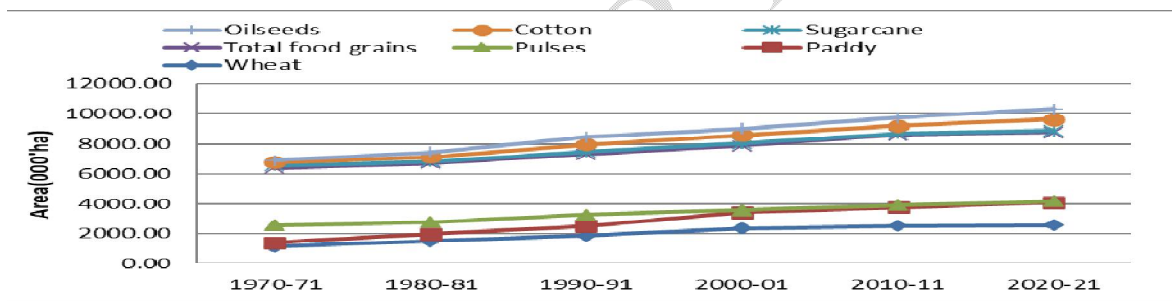


Figure 9: Area coverage under different categories of farm in Haryana.

4. Conclusions

The study concluded that GSDP of state showed a substantial increase over years. The number of literate people in Haryana increased significantly from 26.99 lakh to 165.98 lakh in fifty years indicating six times. Per capita income revealed a significant upsurge from Rs 877 to Rs 2.29 lakh. The share of marginal and small farmers increased from 56.92 to 71.33 percent in last thirty years due to fragmentation of land holding and diverted of land towards non-agricultural purposes. The employment of work force in agriculture dropped by 44.96 percent over the period. The forest area as well as net sown area reduced while total cropped area improved due to expanded irrigation infrastructure. Area under wheat and paddy showed manifold increase as result of area diversion from less remunerative crops.

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