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AGRICULTURAL DEVELOPMENT AND STRUCTURAL TRANSFORMATION IN BIHAR: TRENDS, CHALLENGES AND POLICY IMPLICATIONS

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Abstract

This study examines agricultural development and structural transformation in Bihar by analysing recent trends in economic growth, sectoral composition and employment. Using secondary data, the study highlights the changing role of agriculture in the state economy and the gap between agricultural employment and output. The findings suggest that Bihar has experienced strong economic growth, but agriculture continues to employ a large share of the workforce with relatively lower productivity. The study identifies major challenges and suggests measures such as improving agricultural productivity, diversification, infrastructure and non-farm employment to support balanced and inclusive structural transformation.

Keywords: Agricultural Development, Structural Transformation, Bihar, Agricultural Productivity, Employment, Economic Growth

INTRODUCTION

Agriculture has always occupied an important place in the economy of Bihar. A large section of the state's population continues to depend on agriculture directly or indirectly for its livelihood. Over the years, however, the economic structure of Bihar has been changing. The contribution of non-agricultural activities, particularly construction and services, has increased, while agriculture continues to employ a substantial share of the working population. This changing relationship between agriculture, employment and output is an important part of the structural transformation taking place in the state.

Structural transformation generally involves a gradual movement of labour and economic resources from agriculture towards more productive activities in manufacturing, construction and services. Such a transformation is considered an important part of economic development. However, the process does not always take place evenly. In a state like Bihar, where agriculture continues to provide employment to a large proportion of the population, the decline in the relative importance of agriculture in output does not necessarily mean that workers have moved to more productive sectors.

Bihar has recorded considerable economic growth in recent years. The Gross State Domestic Product (GSDP) at current prices increased from ₹5,81,855 crore in 2019–20 to ₹8,54,429 crore in 2023–24. The growth rate, however, was not uniform during this period. It declined to 7.40 per cent in 2020–21 but increased considerably in the following years. The state recorded growth rates of 14.01 per cent in 2021–22, 15.29 per cent in 2022–23 and 14.47 per cent in 2023–24. This indicates a strong recovery and expansion of economic activity after 2020–21.

Despite this improvement in aggregate economic growth, agriculture remains important for employment generation. The employment data show that 49.6 per cent of workers were engaged in agriculture in 2022–23. In comparison, construction accounted for 18.4 per cent and services for 28.9 per cent of employment. This indicates that almost half of the workforce continues to depend on agriculture even though the sector contributes a much smaller proportion to total output.

The difference becomes clearer when employment and output shares are compared. Agriculture accounted for 21.5 per cent of output, while its employment share was 49.6 per cent. The corresponding productivity proxy was 0.43. For construction, the productivity proxy was 1.06, while services recorded 1.36. The figures suggest that agriculture has a relatively lower output contribution in relation to the size of its workforce.

This situation raises an important question regarding the nature of Bihar's structural transformation. The state economy is growing and becoming more diversified, but a considerable part of the labour force is still concentrated in a comparatively low-productivity agricultural sector. Therefore, agricultural development and structural transformation need to be examined together.

The present study attempts to analyse the trends in Bihar's economic and agricultural development, examine the changing sectoral structure of the economy and identify the major challenges associated with the ongoing transformation. It also discusses policy measures that can improve agricultural productivity and create better employment opportunities outside agriculture.

LITERATURE REVIEW

Agricultural development and structural transformation have remained important areas of research in the context of Bihar because of the state's continued dependence on agriculture and the gradual expansion of non-agricultural activities. Earlier studies have largely focused on agricultural growth, technological change, diversification, employment and the constraints affecting the movement towards a more diversified economy.

Pandey, Khan and Kumari (2019) examined the pathways of agricultural transformation in Bihar in comparison with Punjab. Their study showed that agricultural growth in Bihar was associated with technological change and diversification towards high-value crops. The authors also pointed towards the importance of agricultural research, extension services and institutions that could connect farmers with better markets. Their findings suggest that technology and diversification can play an important role in improving the performance of Bihar's agricultural sector. Research by Kannan and Pohit on Bihar's agricultural growth examined the factors influencing agricultural output and productivity. Their work highlighted the importance of factors such as irrigation, technological progress, agricultural inputs and mechanisation in determining agricultural growth. Such findings are relevant to the present study because improvements in agricultural productivity are closely connected with the ability of rural workers to obtain better incomes from agriculture.

Another strand of research has examined the constraints that limit agricultural growth in Bihar. These studies point towards problems related to agricultural markets, diversification, infrastructure and the effective transmission of economic opportunities to farmers. Such constraints can prevent agricultural growth from translating into substantial improvements in rural livelihoods. The issue is particularly important in Bihar because a large proportion of the workforce continues to depend on agriculture.

Recent research has given greater attention to the relationship between agricultural dependence and rural employment outside agriculture. Singh, Jha and Sharma (2025) examined rural non-farm employment in Bihar using evidence from two villages and found that access to non-farm employment is uneven. Their findings indicate that rural transformation has not benefited all groups equally and that social and spatial factors influence access to non-farm opportunities. The study therefore adds an important employment dimension to the discussion of structural transformation in Bihar.

The recent literature also suggests that Bihar's economic transformation cannot be assessed only by looking at changes in the contribution of agriculture to state output. The relationship between sectoral output and employment is equally important. A decline in agriculture's relative output share, while a large proportion of workers remain dependent on the sector, may indicate that the transformation process is incomplete. In this situation, increasing agricultural productivity and creating productive employment opportunities outside agriculture become complementary policy requirements.

The existing literature has therefore provided valuable insights into agricultural growth, technological change, diversification and rural employment in Bihar. However, much of the earlier research has concentrated on individual aspects of agricultural transformation or on particular determinants of growth. There is comparatively less emphasis on bringing together the recent trends in GSDP, sectoral composition, employment distribution, relative productivity and development outcomes within a single Bihar-focused analysis.

The present study attempts to address this gap by examining agricultural development and structural transformation together. It uses recent economic and employment indicators to understand whether the changing sectoral structure of Bihar is accompanied by a corresponding movement of labour towards relatively productive activities. The study also considers the major challenges associated with this process and discusses policy measures that can support a more balanced and inclusive transformation.

RESEARCH GAP

The existing studies provide useful evidence on agricultural growth, technological change, crop diversification and rural non-farm employment in Bihar. However, these aspects have often been examined separately. There is a need for an integrated assessment that considers agricultural development alongside changes in sectoral output, employment and relative productivity.

The present study fills this gap by bringing these dimensions together in the context of Bihar. It examines the recent trend in GSDP, sectoral composition and employment structure and compares the contribution of major sectors with their respective employment shares. On this basis, the study identifies the nature of the structural transformation taking place in Bihar and discusses the major challenges and policy measures required for more productive and inclusive development.

OBJECTIVES OF THE STUDY

1. To examine the recent trend of economic development in Bihar.
2. To analyse the changing sectoral structure of Bihar's economy.
3. To compare employment and output shares across major sectors.
4. To examine the position of agriculture in the structural transformation of Bihar.
5. To identify the major challenges affecting agricultural development and structural transformation.
6. To suggest suitable policy measures for balanced and inclusive development in Bihar.

DATA AND METHODOLOGY

The study is based on secondary data relating to Bihar's economic and social conditions. Data on GSDP, sectoral composition, employment structure, sectoral productivity and poverty have been used for the analysis.

The study follows a descriptive approach. Percentage shares and year-wise growth rates are used to examine changes in the state's economy. In addition, the output share of each sector is compared with its employment share to understand differences in relative labour productivity.

For this purpose, a simple productivity proxy has been calculated as:

Productivity Proxy = Sectoral Output Share ÷ Sectoral Employment Share

A value below one indicates that the sector employs a larger proportion of workers than its corresponding contribution to output. A value above one indicates a relatively higher contribution to output in comparison with employment.

TREND OF GSDP IN BIHAR

Table 1. Bihar GSDP at Current Prices and Annual Growth

Financial Year	GSDP (₹ crore)	GSDP Growth (%)
2019–20	5,81,855	11.05
2020–21	5,67,814	7.40
2021–22	6,47,394	14.01
2022–23	7,46,417	15.29
2023–24	8,54,429	14.47

Source: State Finances Audit Report, Government of Bihar/CAG, 2023–24; based on MoSPI data.

Table 1 shows that Bihar's GSDP increased considerably during the study period. The GSDP was ₹5,81,855 crore in 2019–20 and reached ₹8,54,429 crore in 2023–24. A relatively slower growth rate was observed in 2020–21, after which the economy recovered strongly.

The growth rate increased to 14.01 per cent in 2021–22 and further to 15.29 per cent in 2022–23. Although it declined slightly to 14.47 per cent in 2023–24, it remained substantially higher than the rate recorded in 2020–21. The trend therefore indicates that Bihar's economy has expanded at a relatively strong pace in the

recent period. However, the increase in GSDP alone does not provide a complete picture of development. The distribution of economic activity and employment among different sectors also needs to be considered.

SECTORAL STRUCTURE AND STRUCTURAL TRANSFORMATION

Table 2. Sector-wise Composition of Bihar's GSDP, 2023–24

Sector	Share in GSDP (%)
Agriculture, Forestry & Fishing	21.5
Construction	19.9
Services	19.5
Share in GSDP (%)	39.2

Source: Directorate of Economics and Statistics, Government of Bihar.

The sectoral distribution indicates that agriculture continues to occupy an important position in Bihar's economy. At the same time, services have become an important source of output and employment. Construction also contributes significantly to economic activity.

The most striking feature is the difference between agriculture's output and employment shares. Agriculture employs 49.6 per cent of the workforce but contributes 21.5 per cent to output. This difference points towards relatively low labour productivity in agriculture.

EMPLOYMENT STRUCTURE AND PRODUCTIVITY

Table 3. Employment Distribution and Relative Productivity by Sector

Sector	Employment Share (2022–23) (%)	Output Share (2023–24) (%)	Productivity Proxy
Agriculture	49.6	21.5	0.43
Construction	18.4	19.5	1.06
Services	28.9	39.2	1.36

Source: Periodic Labour Force Survey (PLFS), 2022–23; NITI Aayog, Macro and Fiscal Landscape of the State of Bihar.

The figures in Table 3 clearly show the uneven distribution of employment and output across sectors. Agriculture accounts for almost half of total employment, but its output share is only 21.5 per cent. Its productivity proxy is consequently 0.43.

Construction presents a different picture. Its employment share is 18.4 per cent compared with an output share of 19.5 per cent, resulting in a productivity proxy of 1.06. Services have the highest productivity proxy at 1.36, with an output share of 39.2 per cent against an employment share of 28.9 per cent.

The comparison suggests that workers engaged in agriculture generate relatively less output per worker than those employed in construction and services. This does not imply that agriculture has become unimportant. Rather, it shows the need to raise agricultural productivity while creating opportunities for workers to move towards more productive activities.

POVERTY AND DEVELOPMENT OUTCOMES

Table 4. Poverty Headcount Ratio in Bihar

Geographical Area	Poverty Headcount Ratio (%)
Rural Bihar	34.06
Urban Bihar	31.23
Total Bihar	33.74

Source: Planning Commission, Government of India, Tendulkar Committee Estimates, 2011–12.

Table 4 indicates that poverty was higher in rural Bihar than in urban Bihar. The poverty headcount ratio was 34.06 per cent in rural Bihar compared with 31.23 per cent in urban Bihar, while the overall ratio was 33.74 per cent.

The rural-urban difference is relevant for understanding agricultural development because rural households are more closely linked with agriculture and allied activities. Low agricultural productivity can limit rural income growth and consequently affect the pace at which poverty declines. Thus, structural transformation in

Bihar should not be viewed only as a shift in sectoral output. Its success also depends on whether changes in the economic structure generate better employment opportunities and improve household incomes.

MAJOR CHALLENGES

The analysis indicates several challenges for Bihar's agricultural development and structural transformation.

First, the state continues to have a high dependence on agriculture for employment. With 49.6 per cent of employment concentrated in agriculture, the sector remains the main source of livelihood for a large population. Second, there is a considerable productivity difference between agriculture and non-agricultural sectors. The productivity proxy of agriculture is considerably lower than that of construction and services. Increasing agricultural productivity is therefore necessary for improving rural incomes. Third, the movement of labour from agriculture to more productive sectors requires adequate employment opportunities outside agriculture. Growth in construction and services needs to be accompanied by skill development and employment generation. Fourth, agricultural infrastructure remains important. Irrigation, storage, transportation, processing facilities and market access can influence the productivity and income of farmers.

Finally, economic growth needs to become more inclusive. High GSDP growth is beneficial, but its development impact depends on how effectively growth reaches rural households and workers dependent on agriculture.

POLICY IMPLICATIONS

The findings suggest that Bihar needs a development strategy that improves agriculture while simultaneously encouraging productive non-agricultural employment.

Investment in irrigation, agricultural technology, improved seeds, extension services and farm mechanisation can help raise agricultural productivity. Greater attention should also be given to diversification towards horticulture, livestock, fisheries and other high-value activities.

The development of agro-processing industries can create stronger links between agriculture and the non-farm economy. Such activities can provide additional employment and increase the value generated from agricultural products.

Improved rural infrastructure is equally important. Better roads, storage facilities, market infrastructure and connectivity can reduce transaction costs and improve farmers' access to markets. At the same time, skill development should be connected with employment opportunities in construction, manufacturing and services. This can facilitate the movement of workers from low-productivity activities towards more productive employment.

CONCLUSION

Bihar has experienced strong economic growth in recent years, but the process of structural transformation remains uneven. The GSDP figures indicate a substantial expansion of the state economy, while the employment structure shows that agriculture continues to absorb a very large proportion of the workforce.

The comparison between output and employment is particularly important. Agriculture accounts for 49.6 per cent of employment but only 21.5 per cent of output, resulting in a productivity proxy of 0.43. In contrast, construction and services have productivity proxies of 1.06 and 1.36 respectively.

These findings suggest that Bihar's future development depends on two processes taking place together: improvement in agricultural productivity and creation of productive employment outside agriculture. A structural transformation that simply reduces agriculture's relative importance without improving the livelihood of agricultural workers may not lead to inclusive development. Therefore, policies should focus on agricultural diversification, improved infrastructure, technological adoption, agro-processing, skill development and expansion of productive non-farm employment. Such measures can help Bihar move towards a more balanced form of structural transformation in which economic growth is accompanied by improvements in productivity, employment and rural living standards.

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