

An analysis of fish production and sectoral GVA trends in Haryana and India

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Abstract

The fisheries sector has become an important component of India's agricultural economy, contributing to food security, employment, and exports. This study analyses trends in fish production and Gross Value Added (GVA) from fisheries in India and Haryana from 2013–14 to 2022–23. Nationally, fisheries GVA more than doubled from ₹76,815 crore to ₹1,61,821 crore. Haryana, despite being a landlocked state, saw its fisheries GVA rise from ₹767 crore to ₹1,775 crore, maintaining a 1.1%–1.5% share in national output. The study uses secondary data and relevant literature to examine growth patterns, regional disparities, and key challenges. The findings indicate robust national performance and promising but uneven trends in Haryana, driven by inland aquaculture and government support. However, limited infrastructure, market linkages, and environmental management persist. The paper highlights the need for region-specific strategies to promote inclusive and sustainable fisheries development in both coastal and inland contexts.

Keywords: Fisheries production, GVA, GDP, Growth Rate, Haryana

Introduction

Fisheries play a vital role in India's agricultural and allied sectors, contributing significantly to food security, rural livelihoods, employment, and export earnings. As the world's second-largest fish-producing nation, India has witnessed sustained growth in both marine and inland fisheries, supported by initiatives such as the Blue Revolution and the Pradhan Mantri Matsya Sampada Yojana (PMMSY). Engaging over 14 million people, the sector is increasingly recognized for its potential to alleviate rural poverty and improve nutritional outcomes.

Despite being a landlocked state, Haryana has strategically leveraged its extensive network of canals, ponds, and water bodies to expand its inland fisheries. Between 2013–14 and 2022–23, Haryana's fisheries GVA increased from ₹767 crore to ₹1,775 crore, while India's national fisheries GVA rose from ₹76,815 crore to ₹1,61,821 crore. Haryana's share in national fisheries GVA ranged between 1.1% and 1.5%, highlighting its steady yet underutilized potential.

Given this backdrop, this study aims to analyse the trends in fish production and the contribution of the fisheries sector to the Gross Value Added (GVA) in agriculture and allied sectors at both national and sub-national levels. Special emphasis is placed on identifying regional disparities, export potential, and policy-driven developments in the sector. This analysis is particularly relevant in the context of inland fisheries growth, environmental sustainability, and rural economic transformation in states like Haryana.

India's fisheries sector has shown notable growth in global competitiveness. Analytical studies using CMS and RCA models reveal that India's export growth is largely driven by its comparative advantage rather than global market expansion, positioning fisheries as a strategically important trade segment (Fayaz & Ahmed, 2020).

In Haryana, fisheries contribute a small but growing share to the state's Agriculture GVA, driven by policy efforts and infrastructure development. However, issues like limited market access, infrastructure gaps, and a lack of institutional support constrain its full potential (Goel, 202). Comparative state-level assessments of inland fish production further highlight Haryana's moderate performance and moderate volatility in output (Sharma, 2014). Environmental concerns have become increasingly relevant. In China, for instance, a two-way relationship between fisheries expansion and marine pollution has been documented, offering valuable insights for India's aquaculture sector, especially regarding sustainable resource use (Peng et al., 2020). Internationally, fisheries exports have shown a positive but variable effect on GDP growth, particularly in export-driven economies. Though India is referenced only briefly, such findings support the case for leveraging fisheries as a growth driver (Jaunky, 2011).

Haryana's marketing system, however remains inefficient, as studies point to the underutilization of direct producer-to-consumer channels, limiting profitability (Choudhary et al., 2017). Innovation and technology are emerging as new enablers. The North-east region's use of IoT and smart aquaculture tools has demonstrated improved productivity, offering models that could be replicated in Haryana (Das et al., 2024). Simultaneously, ecological planning remains essential, as unchecked development such as damming can severely disrupt aquatic biodiversity (Hussain et al., 2024). Broader studies on allied sectors argue that fisheries, livestock, and poultry act as buffers during agrarian stress and contribute significantly to employment and GDP stability (Islam et al., 2016). Haryana's ongoing economic transition, marked by a declining agriculture share and a growing service sector, further emphasizes the role of fisheries in promoting agricultural diversification (Sharma, 2017). Risk mitigation remains a concern as well, with low insurance uptake in rural sectors due to a lack of awareness and affordability (Chand et al., 2016). Finally, national and state government reports provide extensive production data, rankings, and policy outlines. While valuable for empirical reference, they often lack analytical depth or evaluations of ground-level impact. This study focuses on the following objectives.

- To examine the trends in fish production in Haryana and India from 2013–14 to 2022–23.
- To analyse the contribution of the fisheries sector to the total Gross Value Added (GVA) of the agriculture and allied sectors at both the state and national levels
- To compare the growth performance of the fisheries sector in Haryana with that of India over the given period.

Materials and Methods

175.45

This study adopts a descriptive approach based on secondary data to analyse trends in fish production and the economic contribution of the fisheries sector in Haryana and India during the period 2013–14 to 2022–23. Data has been extracted from official publications such as the Handbook of Fisheries Statistics, Economic Surveys, Statistical Abstracts of Haryana, and reports from the Ministry of Fisheries and NSO, India. The analysis includes trend analysis, percentage share calculation, annual growth rates, and comparative evaluation. Key indicators such as fish production, sectoral GVA, and fisheries employment have been studied using tables and graphs for clear interpretation. The focus is to highlight the performance and role of the fisheries sector within the broader agricultural economy at both the state and national levels.

Result and Discussion

The Handbook of Fisheries Statistics 2023, published by the Department of Fisheries, Government of India, provides comprehensive national-level data on fisheries production, species distribution, export performance, and infrastructural development. It highlights that India ranks as the second-largest fish-producing country globally, with consistent growth in both marine and inland sectors (*Handbook of Fisheries, 2023*). On the other hand, the Statistical Abstract of Haryana 2024–25, issued by the Department of Economic and Statistical Affairs, Government of Haryana, provides detailed state-level data on fish production, area under fisheries, aquaculture practices, and GVA contribution over time. The data shows that Haryana's fish production increased from 1.17 lakh tonnes in 2013–14 to 2.12 lakh tonnes in 2022–23, and the fisheries sector GVA rose from ₹767 crore to ₹1,775 crore in the same period (*Haryana Abstract, 2024-25*). These two reports provide strong empirical evidence for understanding the quantitative trends, regional disparities, and policy-driven growth in India's and Haryana's fisheries sector. While the national report sets the macroeconomic and policy context, the Haryana Abstract allows for micro-level trend analysis and state-specific growth assessment. These sources collectively justify the increasing economic relevance of fisheries in both coastal and inland states and form the empirical foundation of the present study.

Table 1, Figure 1,2,3 India's fish production increased consistently from 95.79 lakh tonnes in 2013–14 to 175.45 lakh tonnes in 2022–23, driven by strong national policies and investment in the sector. However, Haryana's fish production also grew from 1.17 lakh tonnes to 2.12 lakh tonnes during the same period, with notable fluctuations. Haryana's share in India's total fish production ranged from 1.08% to 1.50%, with the highest contribution recorded in 2017–18. That year, the state achieved a remarkable growth of 31.94%, followed by another high in 2016–17 at 19.01%, largely due to expansion in inland aquaculture and better technical adoption. Conversely, production declined in 2014–15 (-5.13%) and 2018–19 (-5.26%), which may be attributed to issues like market stress, input supply constraints, and transport disruptions—factors that possibly worsened in the pre-COVID period. Nationally, India saw relatively stable growth, with a significant jump of 10.34% in 2021–22, indicating policy resilience under schemes like PMMSY. Despite being landlocked, Haryana consistently maintained over 1% contribution to India's total fish output. This trend highlights Haryana's strong performance in the inland fisheries sector, though continued growth will depend on strengthening infrastructure, cold chain logistics, and disease management systems.

Table:1 Percentage and annual growth rate of Fish production in India and Haryana (2013-14 to 2022-23)

Year	Haryana (lakh tonnes)	India (lakh tonnes)	% Haryana's fish Production in India's fish production	Haryana Annual Growth Rate (%)	India Annual Growth Rate (%)
2013-14	1.17	95.79	1.22	—	—
2014-15	1.11	102.6	1.08	-5.13	7.11
2015-16	1.21	107.62	1.12	9.01	4.89
2016-17	1.44	114.31	1.26	19.01	6.22
2017-18	1.9	127.04	1.50	31.94	11.14
2018-19	1.8	135.73	1.33	-5.26	6.84
2019-20	1.91	141.64	1.35	6.11	4.35
2020-21	2.03	147.25	1.38	6.28	3.96
2021-22	2.08	162.48	1.28	2.46	10.34
2022-23	2.12	175.45	1.21	1.92	7.98

Source: Authors' own calculations <https://www.dof.gov.in/documents/publications/handbook-of-fisheries-statistics-ljMxITMtQWa?pageTitle=Handbook-of-Fisheries-Statistics> and <https://esaharyana.gov.in/state-statistical-abstract-of-haryana/>

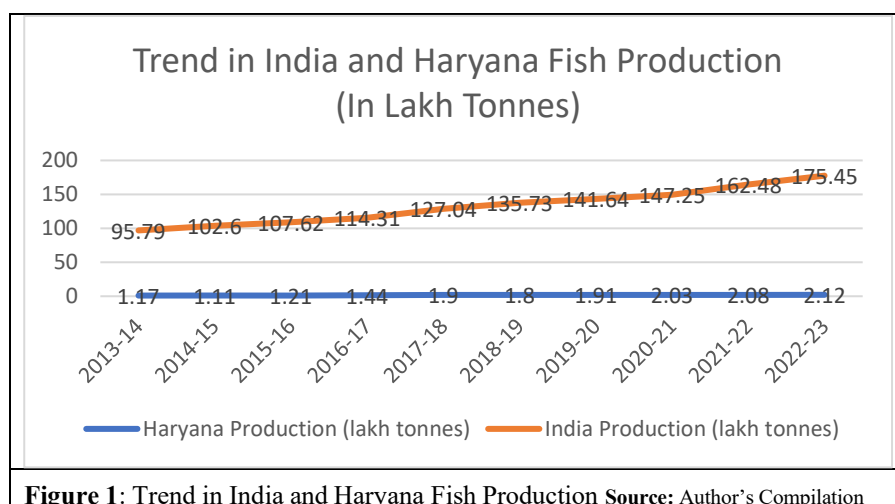


Figure 1: Trend in India and Haryana Fish Production Source: Author's Compilation

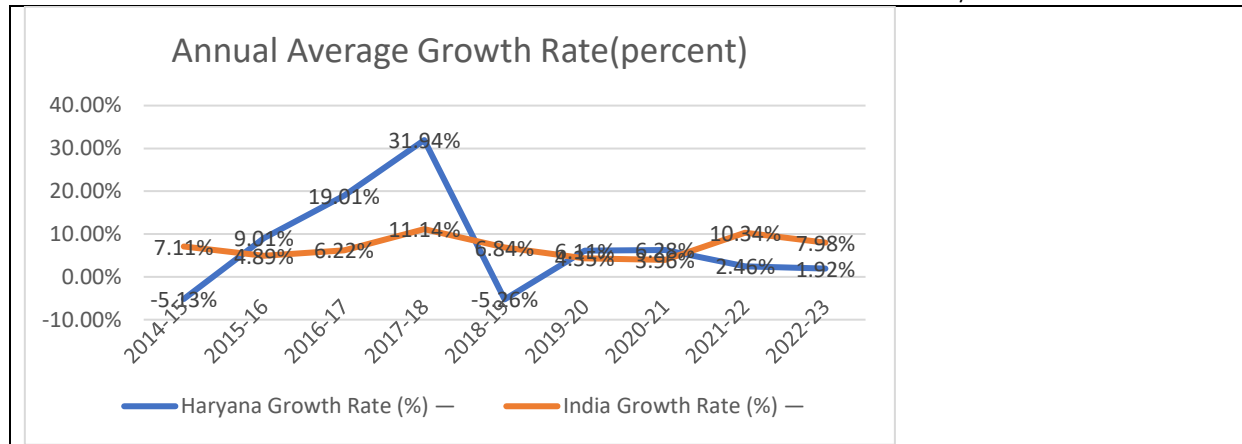


Figure 2: Growth Rate of India and Haryana for Average Annual Fish Production

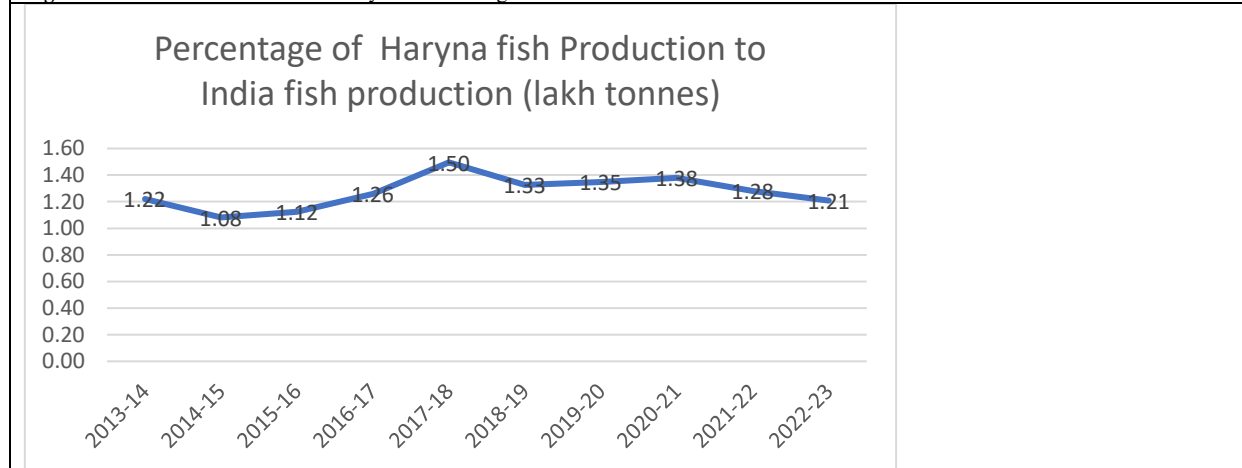


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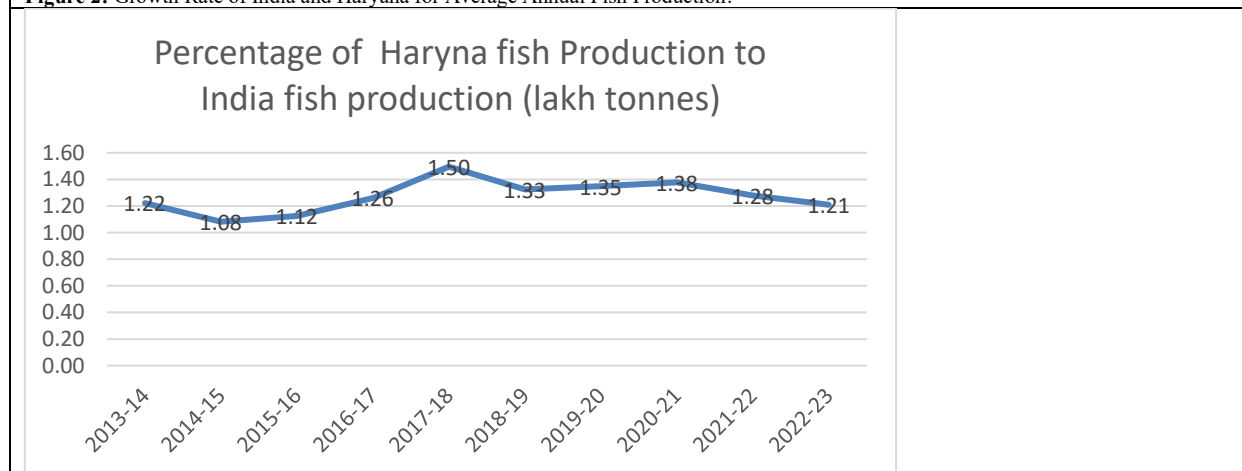


Figure 3: Percentage of Haryana fish production to India's fish production

Table:2 Gross Value Added (Rs crore) by economic activity India (2013-14 to 2022-23) Constant Price

Year	Crops	Forestry & gging	Fisheries	Livestock	Agriculture, Forestry & Fishing	National GVA
2013-14	1037060	132093	76815	363558	1609526	9063649
2014-15	98425	134609	82232	390449	1605715	9712133
2015-16	969344	136960	90205	419637	1616146	10491870
2016-17	1020258	144093	99627	461572	1726004	11328285
2017-18	1075111	152351	114730	497830	1840023	12034171
2018-19	1094211	163949	124468	540970	1878598	12733798
2019-20	1108603	173972	130037	581714	1994326	13236100
2020-21	1139447	184015	135013	617852	2076327	12681482
2021-22	1158250	188416	147519	654937	2149122	13798025
2022-23(Est.)	1174465	196962	161821	715500	2215330	14535972

Source: Authors' own calculations

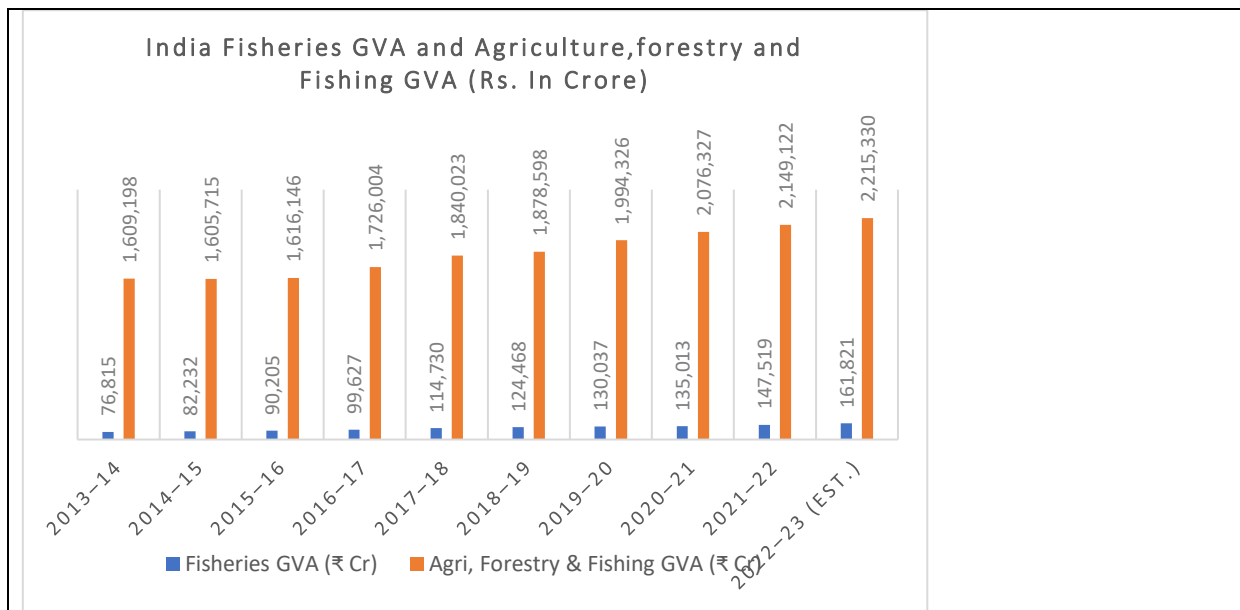


Figure 4: India Fisheries GVA and Agriculture, Forestry and Fishing GVA (Rs. In Crore)

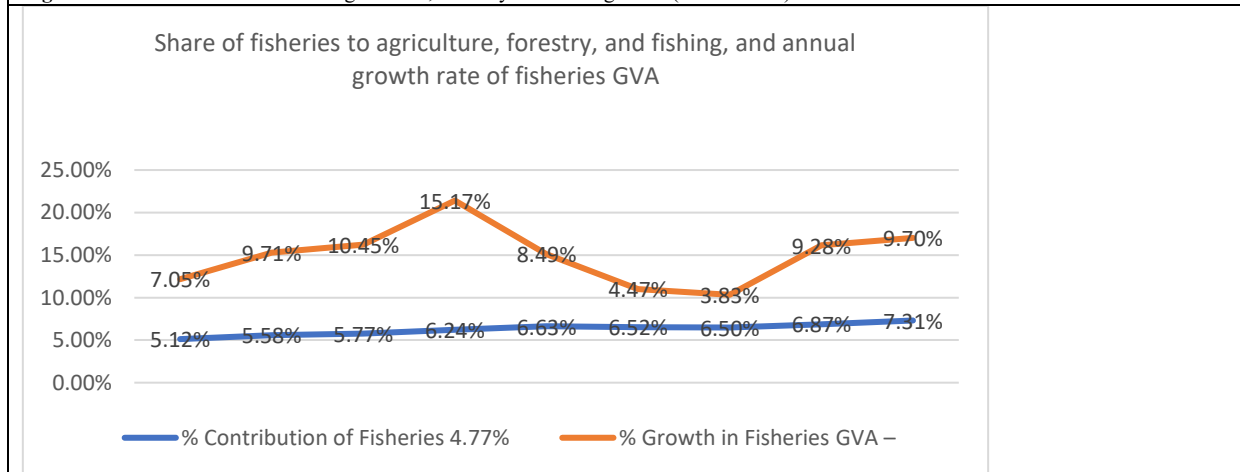


Figure 5: Share of fisheries to agriculture, forestry, and fishing, and annual growth rate of fisheries GVA

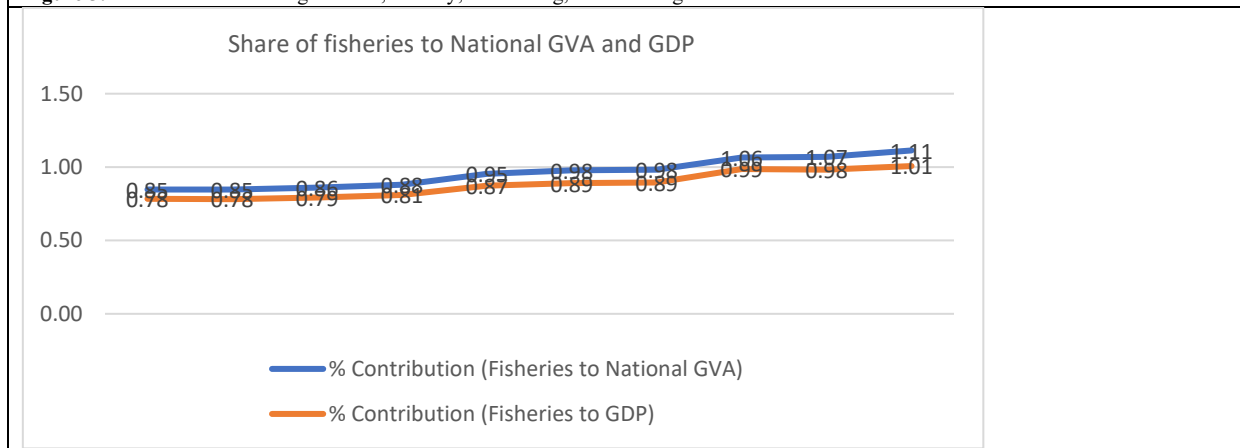


Figure 6: Share of fisheries to National GVA and GDP

Table 2 Figure 4,5,6 Over the period from 2013–14 to 2022–23, the Gross Value Added (GVA) from the fisheries sector in India exhibited a consistent upward trend, rising from ₹76,815 crore to an estimated ₹1,61,821 crore at constant prices. This more than twofold growth reflects the sector's increasing role within India's agricultural and rural economy. The contribution of fisheries to the Agriculture, Forestry & Fishing GVA rose steadily from 4.77% in 2013–14 to 7.31% in 2022–23, indicating fisheries' growing significance in agricultural diversification and income generation. Its share in National GVA increased from 0.85% to 1.11%, while its contribution to GDP grew from 0.78% to 1.01% over the same period. Annual growth remained positive throughout the decade, with a peak of 15.17% in 2017–18. However, the sector experienced a relative slowdown

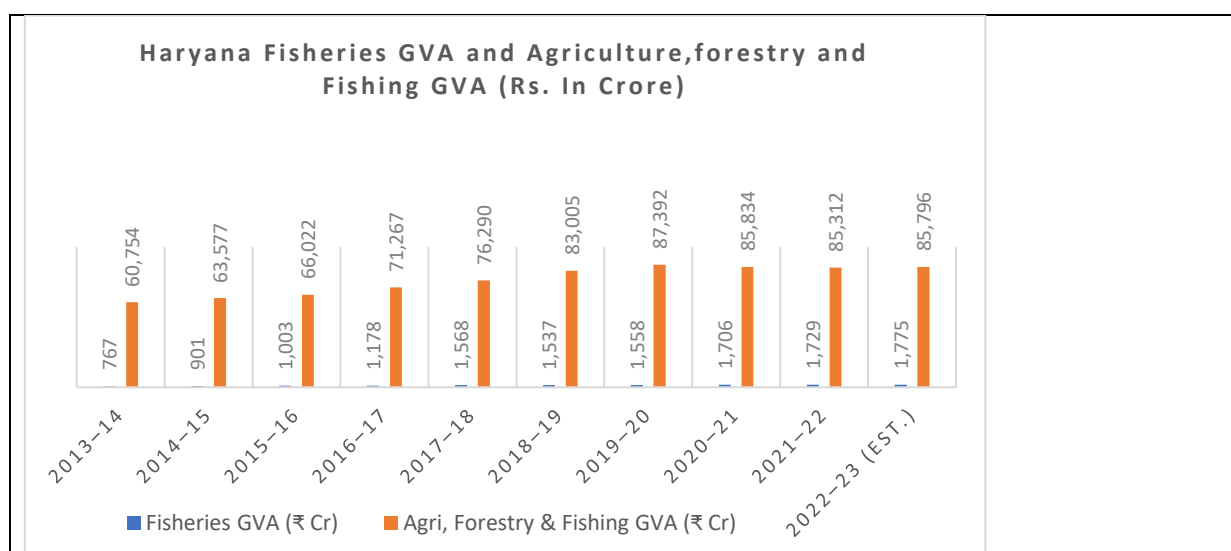


Figure 7 Haryana Fisheries GVA and Agriculture, Forestry and Fishing GVA (Rs. In Crore)

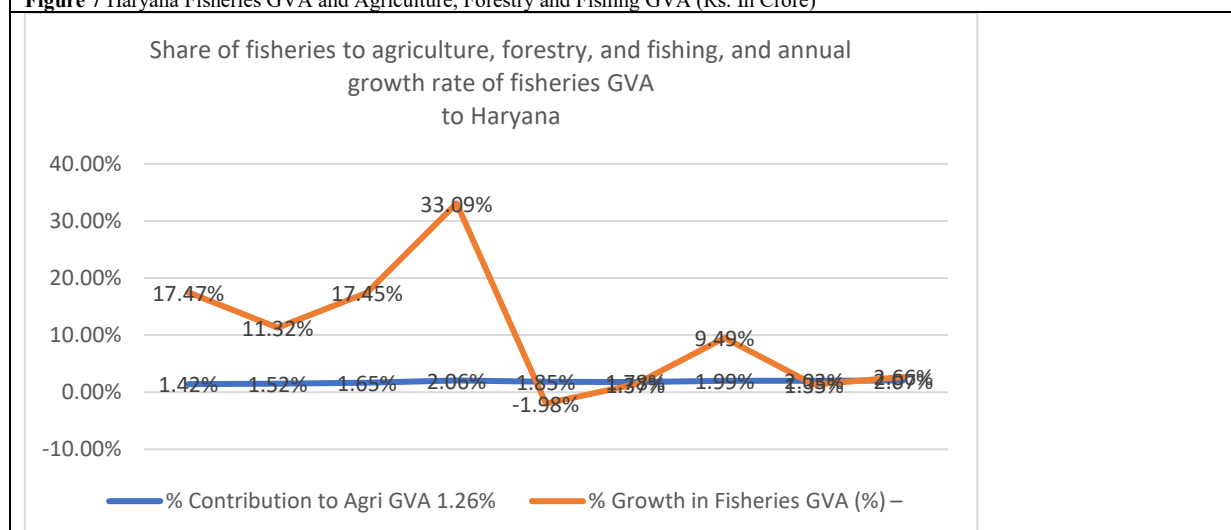


Figure 8: Share of fisheries to agriculture, forestry, and fishing, and the annual growth rate of fisheries GVA to Haryana

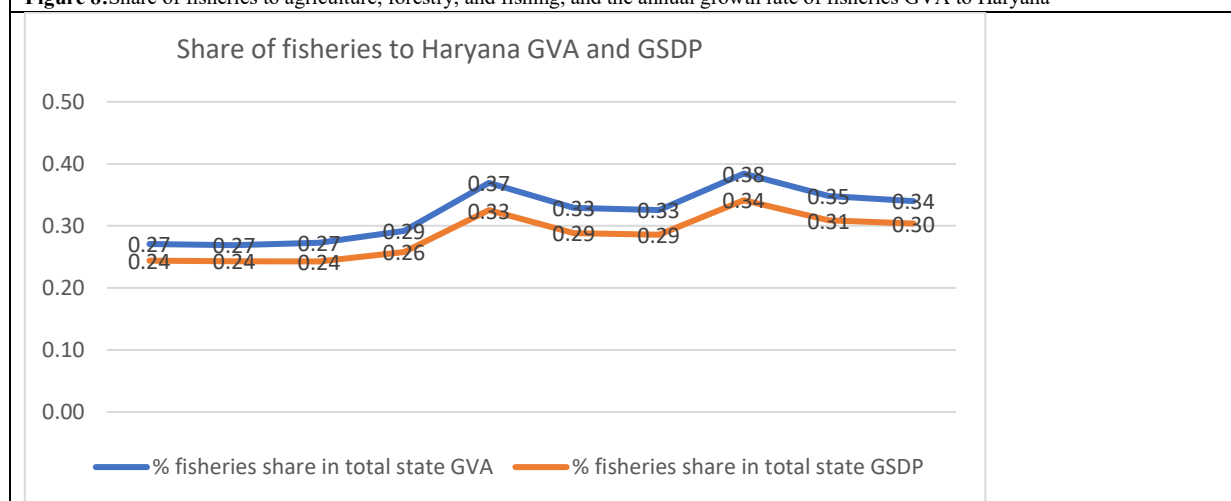


Figure 9: Share of fisheries to Haryana GVA and GSDP

during 2020–21, recording its lowest growth rate of 3.83%, likely due to the adverse impact of the COVID-19 pandemic. Pandemic-related disruptions such as restrictions on transportation, market closures, labour shortages, and input supply delays affected fishery operations across many states. Despite these challenges, the sector showed resilience, rebounding to a 9.28% growth in 2021–22 and continuing upward in 2022–23. Overall, the data underscores the fisheries sector's transition from a traditionally underemphasized component of agriculture to a vital contributor to India's economic and food security goals. Continued policy support, especially under schemes like PMMSY, will be crucial for sustaining this growth trajectory.

Table 3 Figure 7, 8, 9 Between 2013–14 and 2022–23, Haryana's fisheries sector experienced substantial growth, with its GVA rising from ₹767 crore to ₹1,775 crore. Over the same period, its contribution to the state's Agriculture, Forestry & Fishing GVA increased from 1.26% to 2.07%, indicating a gradual but consistent expansion of the fisheries sub-sector. The sector recorded double-digit annual growth in several years, most notably 2016–17 (17.45%) and 2017–18 (33.09%), driven by increased adoption of inland aquaculture and government support for scientific fish farming. These years marked the sector's fastest expansion, also reflected in its rising share of the state's overall GVA and GSDP. However, 2018–19 witnessed a contraction of -1.98%, which may signal early supply chain and market disruptions that later intensified during the COVID-19 pandemic. Even during the peak of the pandemic in 2020–21, the fisheries sector showed resilience with a growth of 9.49%, followed by a moderate recovery in 2021–22 (1.35%) and 2022–23 (2.66%). The sector's share in total State GVA increased from 0.27% in 2013–14 to 0.34% in 2022–23, while its contribution to State GSDP rose from 0.24% to 0.30%, reflecting steady economic relevance despite Haryana being a landlocked state.

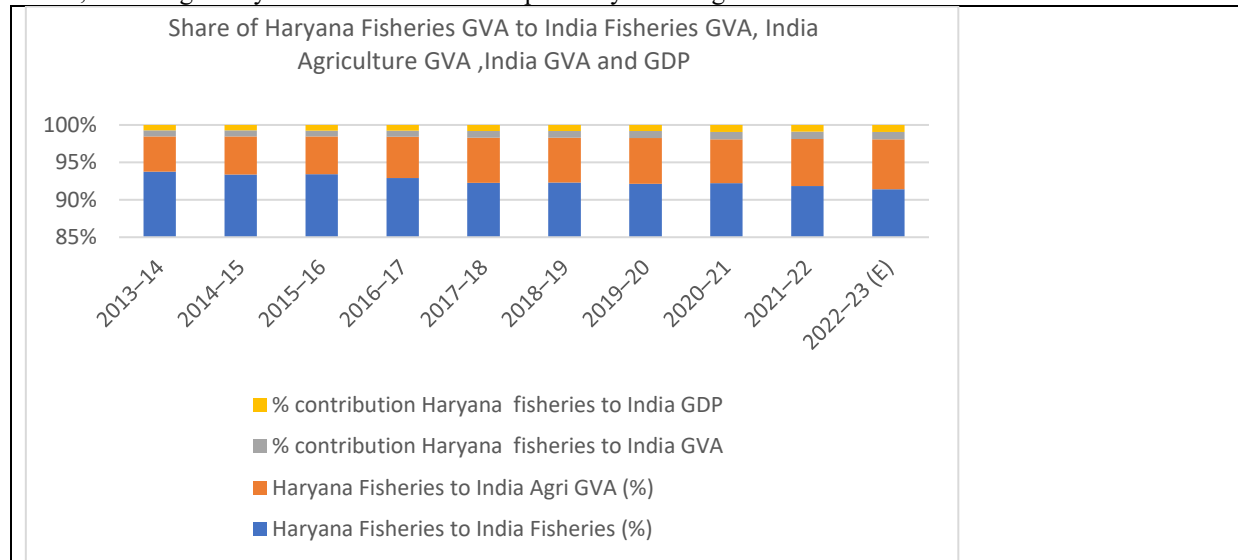


Figure 10: Share of Haryana Fisheries GVA to India Fisheries GVA, India Agriculture GVA, India GVA, and GDP

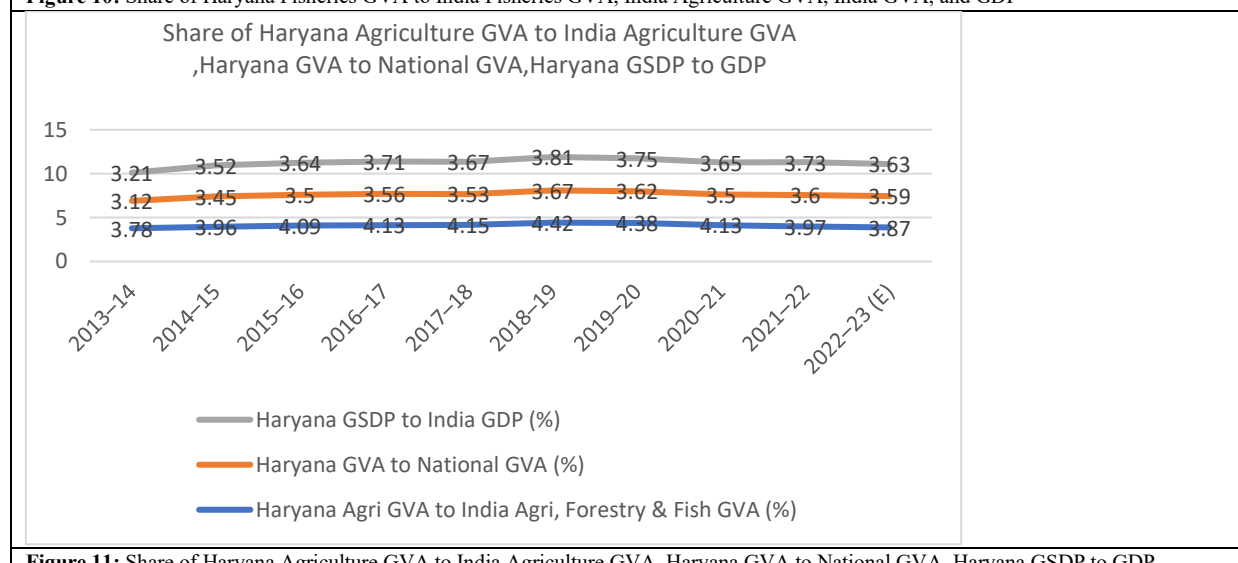


Figure 11: Share of Haryana Agriculture GVA to India Agriculture GVA, Haryana GVA to National GVA, Haryana GSDP to GDP

Table: 3 Gross Value Added (Rs. In crore) by Economic Activity, Haryana (2013-14 to 2022-23)

Year	Crops	Forestry & Logging	Fisheries	Livestock	Agriculture, Forestry & Fishing	State GVA	GSDP
2013-14	35334.49	3637.34	767.25	21014.53	60753.61	283236.39	314223.91
2014-15	35974.25	3897.24	900.64	22804.49	63576.61	334969.11	370534.51
2015-16	36565.73	3984.38	1003.17	24468.93	66022.21	367408.00	413404.79
2016-17	40805.48	2871.82	1178.37	26410.92	71266.59	403610.94	456709.11
2017-18	42060.40	3372.29	1567.94	29289.36	76289.98	424458.28	482036.15
2018-19	43055.93	3735.75	1537.34	34676.02	83005.04	466926.40	532996.04
2019-20	43070.85	4286.89	1558.17	38476.28	87392.20	478883.19	545123.96
2020-21	42852.67	4233.86	1705.98	37041.97	85834.48	443895.30	499643.32
2021-22	40614.75	4387.43	1728.78	38584.41	85312.37	496760.77	559921.63
2022-23 (Est.)	39302.12	4671.22	1774.66	40048.15	85796.44	521909.40	584170.87

Source: Authors' own calculations

Table 4 Comparative Share of Haryana in National Economic Activity (2013–14 to 2022–23)

Year	Haryana Fisheries to India (%)	Haryana Fisheries to India Agri GVA (%)	Haryana Fisheries to India GVA (%)	Haryana Fisheries to India GDP (%)	Haryana Agri GVA to India Agri, Forestry & Fish GVA (%)	Haryana GVA to National GVA (%)	Haryana GSDP to India GDP (%)
013–14	1.00	0.05	0.01	0.01	3.78	3.12	3.21
014–15	1.10	0.06	0.01	0.01	3.96	3.45	3.52
2015–16	1.11	0.06	0.01	0.01	4.09	3.5	3.64
2016–17	1.18	0.07	0.01	0.01	4.13	3.56	3.71
2017–18	1.37	0.09	0.01	0.01	4.15	3.53	3.67
2018–19	1.24	0.08	0.01	0.01	4.42	3.67	3.81
2019–20	1.20	0.08	0.01	0.01	4.38	3.62	3.75
2020–21	1.26	0.08	0.01	0.01	4.13	3.5	3.65
2021–22	1.17	0.08	0.01	0.01	3.97	3.6	3.73
2022–23 (E)	1.10	0.08	0.01	0.01	3.87	3.59	3.63

Source: Authors' own calculations

Table 4, Figure 10,11 The comparative analysis of economic activity reveals that Haryana's fisheries sector, though relatively small at the national level, maintained a consistent contribution of over 1% to India's total fisheries GVA during the decade. This peaked at 1.37% in 2017–18, reflecting notable growth in inland aquaculture within a landlocked state. In terms of Haryana's fisheries GVA share in India's agriculture GVA, the contribution remained modest, ranging from 0.05% to 0.09%, suggesting that while fisheries are growing within Haryana, their national agricultural footprint is still limited. When assessing total economic contribution, Haryana's state GVA accounted for 3.12% to 3.67% of India's national GVA, and its GSDP contributed 3.21% to 3.81% of India's GDP, with the highest share in 2018–19, a reflection of sustained industrial and agricultural performance. Meanwhile, Haryana's agriculture GVA alone contributed 3.78% to 4.42% of India's total agriculture, forestry, and fishing GVA. This indicates that Haryana, despite its limited water resources, has a robust Agri-economy and a growing presence in allied sectors like fisheries. Overall, these indicators point to Haryana's rising economic influence, especially within agriculture. The steady share of fisheries GVA in national aggregates though small signals long-term potential, particularly if inland aquaculture continues to expand under policy support.

Conclusion

India's fisheries sector showed strong and consistent growth. Fish production nearly doubled, and fisheries GVA rose from ₹76,815 crore to ₹1,61,821 crore, increasing its share in agriculture GVA (4.77% to 7.31%) and national GVA (0.85% to 1.11%). Haryana, despite being a landlocked state, achieved notable progress. Its fish production increased from 1.17 to 2.12 lakh tonnes, and fisheries GVA grew from ₹767 crore to ₹1,775 crore. The sector's share in Haryana's agriculture GVA rose from 1.26% to 2.07%, aided by aquaculture development and policy support. Although production dipped in 2018–19, possibly due to early disruptions before COVID-19, the sector remained resilient, maintaining growth even during the pandemic. Haryana contributed 1.0%–1.37% to India's fisheries GVA and about 4% to national Agri-GVA, while its overall GVA and GDP share held steady between 3.5%–3.7%. To sustain this momentum, targeted investments in infrastructure, hatcheries, cold chains, and disease control are essential, particularly for inland states like Haryana.

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