



Short Review Paper

Pradhan Mantri Matsya Sampada Yojana- A way towards sustainable development

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Abstract

Sustainable development focuses on developing the current scenario without affecting the needs of the future generation. Atmanirbhar Bharat is a step toward realizing the sustainability objectives, such as eradicating inequality, improving health care and education and reducing poverty. In the current paper, Atmanirbhar Bharat is analysed through PMMSY. The study tries to determine PMMSY's achievements and progress. It also examines how production and exports have increased over time and how these two factors relate to one another. According to the study, fisheries productivity increased significantly in the years 2017-18 with 11.13% annual average growth but declined in 2020-21 (-2.08%). The relationship between production and export exhibits a strong positive correlation.

Keywords: PMMSY, Annual Growth Rate (AGR) and GVA.

Introduction

By addressing today's needs without compromising the capacity of future generations to do the same, sustainable development satisfies the present. Every country needs to focus on goals of sustainable development which is a vital action for all the nations. Recognition of Poverty, Providing Health and Education and Inequality reduction and other deprivations shall go hand-in hand with the growth of the economy. The growth shall be brought without creating distraction for any section of the society. Atmanirbhar Bharat is one such initiation taken by Government of India to bring sustainable growth. Atmanirbhar Bharat also known as Self-reliant India was introduced on 12th May 2020. For the intent of rehabilitating from the Covid-related economic recession, Government of India sanctioned Rs. 20 lakh crores for the scheme that is equal to 10% of India's Gross Domestic Product¹ Atmanirbhar Bharat is supported by the economy, infrastructure, system, demography, and demand, which together make up its five pillars. Many plans have been put into place in an effort to make the country and its citizens autonomous and self-sufficient in every aspect².

The Indian economy is based on agriculture as more than 70% of Indian Economy is dependent on Agriculture sector. Investing in agriculture not only helps solving the problem of hunger and malnutrition but helps in increased production, poverty reduction, proper utilisation of water and energy etc. the reforms that are brought in Agriculture sector are farmers would receive Rs. 1 lakh crore in Agri Infrastructure Funds for Farm-Gate Infrastructure program for the Formalization of Micro Food Businesses worth Rs. 10,000 crore (MFE), The PMMSY scheme for fisherman has been approved for 20,000 crore

rupees over 5 years a fund for the development of animal husbandry infrastructure was created for Rs. 15,000 crores to assist private investment in infrastructure for cattle feed, value addition, and dairy processing, a total of Rs. 4000 crore will be spent on the promotion of Herbal Cultivation³.

PMMSY is the scheme introduced for upholding the fisheries sector in India. India is the major exporter of fisheries. More than 2.5 crore of Indian population is dependent on fishing⁴. There is need to study the progress that is achieved in fisheries sector after the introduction of scheme.

Literature Review

Salim, Safeena, & Athira, 2015 studied on Does India Really Need to Export Fish: Reflections and Upshots- The study's goal is to look into how prices were realised on both domestic and foreign markets. Using primary and secondary data on fish production, consumption, distribution, and exports on a global scale, the study has developed macroeconomic estimations. According to the Classical Demand Theory, the study has shown that urban consumers are undoubtedly willing to pay a greater price. The decomposition analysis indicates that "quantity effect" rather than "price effect" is mostly responsible for the realisation of export value⁴.

Maurya Upadhyay & Prasad, 2018 performed an analysis of the state of Uttar Pradesh fish production trends. Only 48.97% of the state's total aquaculture resources were used for fish production, according to the report, while the remaining 41.03% were left unused. It suggests that fish production may expand horizontally. The discovery of a strong significant association

between two fish seed production and fish output supports the proponent of high-quality seed production for greater sustainable fish production in the state⁵.

Radhakrishnan, Tesfom, Krishnan, & Sivaraman, 2018 studied on Development and Indian Fish and Fisheries Products Export Performance, the report examines the performance of the Indian fish and fisheries goods export throughout the previous five decades, including its growth and volatility. The findings indicate that export growth rates for seafood have been increasing with instability⁶.

Salim & Kumaran, 2022 studied on Indian domestic fish consumption: Challenges and Opportunities, it is concluded that, It is found that value addition is one of the potential ways to increase profitability as the fish processing sector gets increasingly competitive. Value-added product marketing is extremely advanced, sensitive, expensive, and dynamic. In order to improve the marketing strategy for the value addition of seafood goods, proper steps must be taken. The success of marketing value-added items heavily depends on the appearance, packaging, and display⁷.

Objectives of the study: The paper aims to study PMMSY- a way to sustainable development. The sub-objectives are: i. To study Self-Reliant India through PMMSY, ii. To analyse the annual growth rate in fish production and fish and fish product exports, iii. To investigate the relationship between Fish Production and Fish Export.

With its multifaceted initiatives, The Blue Revolution primarily focuses on boosting the productivity of inland and marine aquaculture and fishery resources⁸. India contributes 7.58% of the world's total fish production, making it the greatest fish producer in the world. According to the Handbook on Fisheries Statistics 2020, the states with the highest per capita fish consumption are Tripura, Kerala, Manipura, Odisha, and Assam, with annual per capita consumption of 29.29kg, 19.41kg, 14.1kg, 13.79kg, and 11.72kg, respectively⁹. It has added 14.13% growth in Gross Value Added during 2018-19. During 2019-20 the export of Fish products has reached to 12.90 lakh tonnes. Frozen Shrimp accommodates of about 73% exports in fish products from India in 2019-20 compared to 69% in 2018-19 in value. Japan, the United States, China, South East Asia, and the Middle East are the countries who majorly imports Fish products from India¹⁰. The statistics shows that fisherman population including fish farmers, fish workers and fishers is 2,80,63,537. Which consist of Male 1,56,65,630 and female 1,23,97,907¹¹.

Announcing the launch of PMMSY in September 2020. It seeks to close important production gaps in fish, boost productivity by incorporating innovation and contemporary technology, enhance post-harvest infrastructure and management, and create a framework for effective fisher management and fisher welfare. raising awareness of the need to utilise fishermen's potential in a

way that is sustainable, responsible, inclusive, and equitable. The two separate parts of PMMSY are the Central Sector Scheme (CS) and the Centrally Supported Scheme. The Centrally Sponsored Scheme (CSS) Component is further divided into groups that are beneficiary and non-beneficiary oriented. The policy foresees an increase in export and fish production by the financial year 2024-25.

Table-1: Financial allocation and expenditure (Rs. in crores)¹⁴.

Budget Components	FY	Budget Estimates	Revised Estimates	Actual Expenditure
PMMSY	2021-22	560	700	699.72
PMMSY	2020-21	1000	1200	737.85

The Table-1 represents the Financial Allocation and Expenditure for the financial year 2021-22 and 2020-21. It is found for the financial year 2021-22 actual expenditure equates the budgeted estimates whereas during the financial year 2020-21 actual expenditure is less than the budgeted expenditure.

The goal of Indian government is to reach \$ 5 Trillion Economy. For the financial year 2022-23 the GDP is estimated to be at 6.5% by world bank. PMMSY is one step towards achieving \$ 5 Trillion Economy¹².

Achievements of Pradhan Mantri Matsya Sampada yojana Physical achievements

3363 tares of pond arear approved under inland aquaculture, 1073 Biofloc units and 1323 Nos of RAS have been sanctioned, 10990 Numbers of cages, 126 hectares pens in reservoirs and other water-bodies approved and 120 numbers of fish/prawn hatcheries approved.

Fishermen Welfare: In order to preserve fishing resources, 1074 fishermen's replacement boats and nets, 648462 fishermen's families' livelihoods and nutritional support, and 29 extension and support services are provided.

Fisheries Infrastructure: 131 number of ice plant/cold storages sanctioned, 152 numbers fish feed mill or plants, fish transportation facilities like 1946 motor cycles, 1414 bicycles with Ice Box, 828 Auto Rickshaws, 376 insulated trucks, 69 refrigerated have been sanctioned, there are currently 999 units of fish retail markets, 81 fish kiosks, including ornamental kiosks, 918 value-added enterprise units, Aquatic Healthcare, 4 disease health centers, 2 mobile centers, and 1 aquatic referral lab.

Ornamental Fisheries: 725 ornamental fish rearing units have been approved, 58 Integrated Ornamental fish units have been approved, Seaweed Cultivation, 41000 Monoline tube net approved for seaweed culture, 23000 rafts approved for seaweed cultivation, Coldwater Fisheries, 20 Ha Area of New Pons, 491

New Raceway units, 6 Trout hatcheries and construction, 4 RAS units.

Development in North East Regions: Rs. 165.841 crore Total project cost with central share Rs. 83.07 crore, 300 Ha construction og new ponds, 574.76 Ha Integrated Fish Farming, 290 Biofloc units, 172 ornamental Fisheries units, 31 Hatcheries, 30 Rw-circulatory Aquaculture System (RAS), 40 Feed mills, Other Important Activities, 368 sagarmitra, 18

Matsya Seva Kendra, 3 Integrated Development of Reservoir, 1 Modern Wholesale Market^{13,14}.

The Table-2 and Figure-1 show the production of marine and inland fish in India from 2010-11 to 2020-21. The production of fish has seen positive annual growth in all the years except in the 2020-21. It has recorded high in 2017-18 with 11.13% total annual growth¹⁵.

Table-2: Trend of Fish Production in India⁹.

Year	Fish production (in Lakh Tonnes)			Annual Average Growth Rate (Percent)		
	Marine	Inland	Total	Marine	Inland	All India
2010-11	32.5	49.81	82.31	4.7	1.78	2.91
2011-12	33.72	52.94	86.66	3.75	6.28	5.28
2012-13	33.21	57.19	90.4	-1.51	8.03	4.32
2013-14	34.43	61.36	95.79	3.67	7.29	5.96
2014-15	35.69	66.91	102.6	3.66	9.04	7.11
2015-16	36	71.62	107.62	0.87	7.04	4.89
2016-17	36.25	78.06	114.31	1.14	8.63	6.12
2017-18	37.56	89.48	127.04	3.61	14.62	11.13
2018-19	38.53	97.2	135.73	2.58	8.62	6.84
2019-20	37.27	104.37	141.64	-3.2	7.37	4.35
2020-21	37.9	100.79	138.69	1.69	-3.43	-2.08

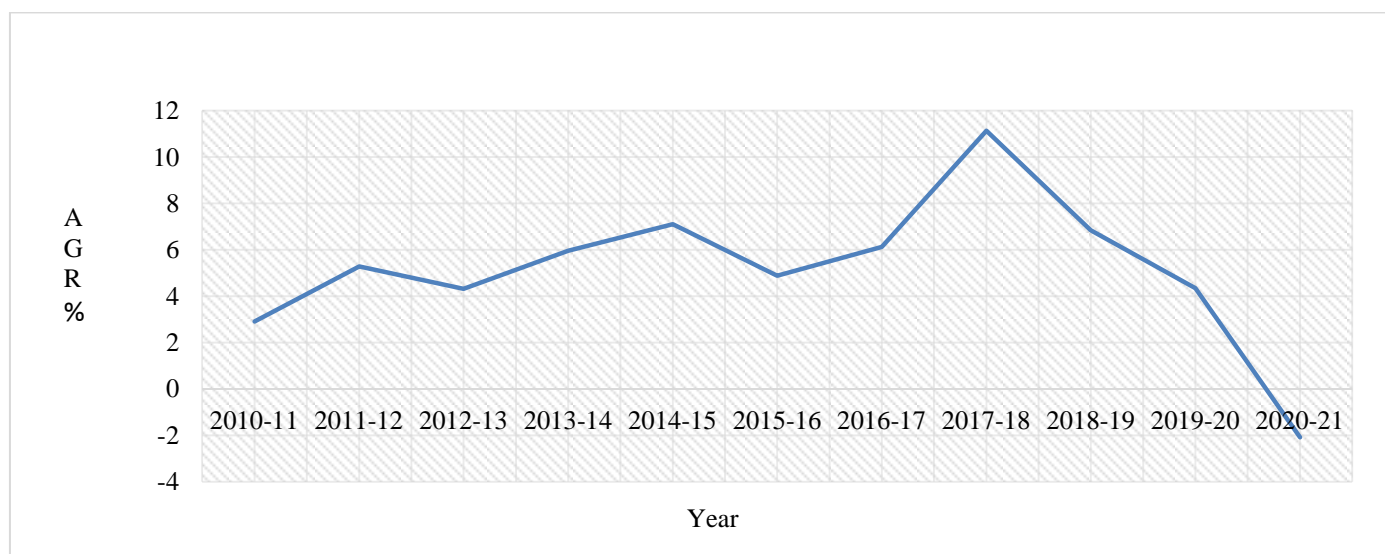


Figure-1: AGR (%) of fish production in India.

Table-3: Trend of Export of Fish and Fish Products⁹.

Year	Quantity (Tonnes)	Value (1 Crore)	US Dollar (\$: Million)	Annual growth rate (%)	
				Quantity	Value
2010-11	813090.85	1,29,01.47	2856.92	19.85	28.39
2011-12	862021.41	1,65,97.23	3508.45	6.02	28.65
2012-13	928214.67	18856.26	3511.67	7.68	13.61
2013-14	983755.56	30213.26	5007.7	5.98	60.23
2014-15	1051243.49	33441.61	5511.12	6.86	10.69
2015-16	945891.9	30420.83	4687.94	-10.02	-9.03
2016-17	1134948.09	37870.9	5777.61	19.99	24.49
2017-18	1377243.7	45106.89	7081.55	21.35	19.11
2018-19	1392558.89	46589.37	6728.5	1.11	3.29
2019-20	1289650.9	46662.85	6678.69	-7.39	0.16
2020-21	1149341	43717.26	5956.42	-10.87	-6.31

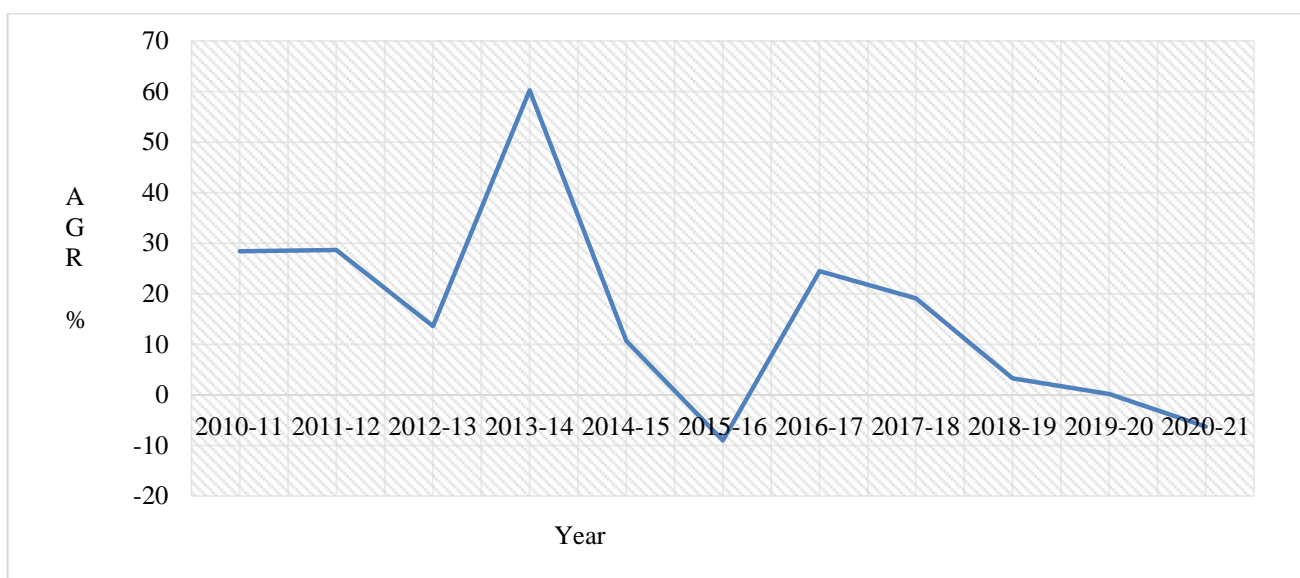


Figure-2: AGR (%) export of fish and fish products.

The Figure-2 and Table-3 show the export trend for fish and fish products from 2010 to 2011. The result of Annual growth rate (%) shows that the export of fish production is in increasing trend in 2010-11 and 2011-12, it reduced in 2012-13 to 13.61% again there was drastic rise to 60.23% in 2013-14. While it is negative during year 2015-16. Thereafter it is increasing in a declining rate. Although the Pradhan Mantri Matsya Sampada Yojana is introduced in 2020-21 to promote the blue revolution

in India, its effect on export has seen zero impact since the growth of fish export is in negative during the year 2020-21¹⁵.

The Table-4 shows the correlation between Production and Export, it is found that the correlation between both the variables is strong positive correlation. As correlation coefficient is 0.9617.

Table-4: Correlation Matrix

Production	Exports	
1.0000	0.9617	Production
	1.0000	Exports

Table-5: Simple Regression Model (OLS, using observations 1995-2021 (T = 27) Dependent variable: d_Log_E

	Coefficient	Standard Error	t-ratio	p-value	
Constant	-8.20847e-05	0.0166722	-0.0049	0.99611	
d_Log_P	1.32231	0.772665	1.7114	0.09940	*

The effect of fishing production on exports of fish and fish products is investigated using a simple regression model. At the first difference, the variables are discovered to be stationary. Using the Augmented Dickey Fuller test, stationarity is examined. As the P-value is less than 0.10, the results show that Production has a statistically significant impact on Exports at the 10% level of significance. Exports and production have a positive relationship. It implies that if production rises by 1%, exports will rise by roughly 1.32% as well¹⁶.

Findings

The findings of the study shows that Rs 20,000 lakh crore is allocated for Atmanirbhar Bharat which is 10% of India’s Gross Domestic Product, PMMSY is introduced to bring blue revolution through sustainable development by providing Rs. 20,000crores to the scheme, Union budget 2021-22 allocated Rs 1220.84 crore to the fisheries department the yearly growth rate of fish production was determined to be greater in 2017–18 with 11.13% and lowest in 2020–21 with a fall in growth rate to -2.03%, according to the trend of fish production and export. The annual growth rate of export of fish and fish product is found to be high in 2013-14 with 60.23% and lowest in 2015-16 with negative 9.03%.The relationship between production and export is strong positive relationship, to investigate how fish production and exports are impacted by one another; a simple regression model is employed. Production has a significant impact at a 1% level of significance, according to the p-value, the co-efficient value showed that if production increases by 1% then exports shall also increase by 1.32% approximately,

Conclusion

India has targeted to achieve \$5 trillion economy by 2025. Recently, International Monetary Fund announced that India has surged past the UK and became 5th largest economy in the world based on GDP. The aim to achieve dollar 5 trillion economy by 2025 is possible by keeping GDP between 8%-9% annually. Self-reliant India is one such scheme which uplifts the economy by making the pillar of Atmanirbhar Bharat stronger. PMMSY is the scheme introduced for upholding the fisheries sector in

India. India is the major exporter of fisheries. The relationship between production and export is strong positive relationship. The trend of fish production and export showed that annual growth rate of production is found to be higher in 2017-18. The annual growth rate of export of fish and fish product is found to be high in 2013-14. By utilising a basic regression model and PMMSY, the present study focuses on the relationship between fish production and fish export in India and further researches can take into account more factors including governmental initiatives that boost fish production and exports.

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