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FISH AND FISHERIES RESOURCES OF GUJARAT STATE - AN INTRODUCTION

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Introduction

Gujarat is fifth largest state by area and ninth largest state by population of India, situated on the west coast of India. Fish and fisheries are the most important components for the financial growth, employment and development of Gujarat as it has largest costal line in India, its maritime climate, creek, marshy land mangrove forest etc. are gift of nature which provide great potential for the development of aquaculture. It pretentions of 1600 km long coastline, 1.64 lakh sq. km continental shelf and 2.14 sq. km exclusive economic zone. From these marine water resources it produced about 8.35 lakh tonnes of fishes and ranked 1st position in the country. In last few year Inland fish production also shown remarkable growth (1.34 lakh tonnes) in that leading district are Vadodara, Tapi, Surat and Narmada.

The people residing along the coastal belt of the state the river lake and reservoirs have been found traditionally engaged in fishing for immemorial time. In Gujarat total 1058 fishing villages are there out of that 280 are marine fishing village, 116 are inland fishing village and 82 are estuarine fishing village. As per 2007 census population of fisherman is 5.59 lakh out of that 2.18 lakh are active fisherman. For the smooth functioning of the fish landing process 107 marine fish landing centers developed by the state all along the coast.

Fishery resources of Gujarat

Fishery resources of Gujarat broadly classified as marine fishery resources inland fishery resources and brackish water fishery resources.

Marine fishery resources

The day when Gujarat acquired its constitutional existence that time fishery department had started for fisheries development in the state. After long journey and many ups and downs Gujarat fishery is known by its own contribution in Indian economy. Gujarat cover about 20.00 % coastline, 32.03 % of continental shelf of the country and gulfs (gulf of Cambey and Gulf of Kutch) created suitable environment for the fisheries development. Exclusive economic zone of Gujarat is estimated to be 2,14,060 sq.km and among the biggest ports of India Kandla and Porbandar port is also situated in Gujarat. Nowadays, Gujarat acquired first position in marine fish production and in the export of marine product and considering top most state among all maritime state of the country. The marine catches of the state is mainly consisting of Bombay duck, Ribbon fish, Shrimp, Pomfret, Cat fish, Squid cuttlefish, Jew fish, Lobster, Seer fish, Silver bar, Hilsa, Shark etc.

Inland fishery resources

Gujarat has about 2.28% water resources and 6.39% geographical area of India. The inland fisheries resources is mainly accomplished by rivers and canals with 4.81 lakh km followed by 347659 ha reservoir, 12000 ha derelict water and only 1.00 lakh ha of brackish water. The central and southern part of Gujarat containing about 80% surface water resources while remaining 20% resources

contained by rest of three-quarters of the state. All the major river of the state like Narmada, Tapi, Mahi, Sabarmati, and Poorna are originated from eastern part of the state and ended up in Arabian Sea in the west. The total length of the river of the state is estimated to be 3865.00 km. People who live near this river used to depend on fishing for their livelihood and use traditional mean of fishing. Sardar Sarovar on Narmada, Vallabh Sagar on Tapi are one of the biggest projects in southern Gujarat and these are primarily constructed for power generation and irrigation purpose but currently they playing important role in fisheries production. State has its own fish seed hatchery near Vallabhsagar reservoir (Ukai) and near Sardar Sarovar reservoir (Nana Kakdi Amba). These inland fishery resources of Gujarat mainly comprises of fish fauna commercially very important are major carps *Labio rohita*, *Catla catla* and *Cirrhina mirgala*, minor carps *Tor tor*, *Labeo frimbriatus*, *Labeo calabasu*, *Labeo bata* and Catfishes (*Mystus senghala*, *Mystus aor*, *Mystus cavasius*, *Wallago attu*, *Clupisoma garua* etc.

Brackish water fishery resources

The water current tidal amplitude or oceanic movement of Gujarat coast is comparatively high than other parts of western coast which create vast stretches of marshy and saline lands creek lands all along the coastal part of the state. Preliminarily it is reveal that 89,341 ha is found more suitable for development of brackish water fish culture in the state whereas it having good brackish water fish culture potential with 3.76 lakhs coastal fallow land. For the sustainable development of brackish water fish culture land lease policy of the state was framed in the year 1987 and it was revised in 1994 and 2007.

Infrastructure

The majority of the fishermen of the state follow traditional and old fishing method design and type of gear and craft depend on the need, climate and local condition of the fishing areas. Fishermen use dug out canoes, plank, build loadhya, machhavas, wahans etc. With the help of this old and traditional craft fishermen can catch fish up to 5 km and 20 m depth. Use of motorized traditional crafts began in 1953 at Jaleshwar village (Veraval) of the state. The state of Saurashtra receives some low H.P. OBMs and IBEs under technical cooperation mission (TCM) aid from the USA. The first OBMs introduced were of 3 HP only subsequently from 1961 to 1966 introduction of higher HP OBMs was very intensive with an average rate of addition of about 98 boats per year. OBMs hardly received any policy support in any other state. Introduction of OBMs not only increased the production and raise the income but also improve the living standards of the poor sections of the fishermen. The seventh plan confined with the motorization of the traditional crafts. As per 2003-2004 census the state has 31000 boats of which 18635 boats were mechanized and 12365 boats were non-mechanized. In this year annual growth rate of mechanized boats were -5.25 while the growth rate of non-mechanized were 18.55%. In all 35532 boats operate near Gujarat coast in year 2017-2018 out of which 25612 boats were mechanized and 9920 boats were non-mechanized. In this year growth rate of mechanized boats was 0.027% while for non mechanized growth rate was -0.01. The growth rate of mechanized boats in 2010-2011 was 65.39% and for non mechanized boats were 34.60%.

Landing center and harbor facilities

From ancient time Gujarat was the developed port for the business and triad. Its geographical location favorable climatic condition made it the busiest trading centre and port. As we know fish is highly perishable food item. Quality control of fish basically depends on landing centre, harbor facility and cold storage facility. Beside this important infrastructure facilities other facility like repairing and maintenance of the boats, processing and freezing plants, fish meal manufacturing

plant, boat building yard, terminal division of fish harbor to keep watch on the movement of boats are included under the infrastructure. Government had developed many harbor and landing center to boost up the fishery industry in Gujarat. Today Gujarat has total 1058 landing centre including marine, inland and estuarine center. The first harbor in Gujarat was built in Veraval with the help of fund provided by UNDP and FDA international organization. In fifth year plan more emphasis was laid on the construction of harbor and fishing harbor. Under the World Bank project Mangrol and Veraval were develop as full fledged harbor. In 1991 another full fledge harbor was develop at Porbandar. All three harbors are provided with terminal division facility to channelize their activity and increase their function. Government has sanctioned Jakhao fishery project with 100% central support and Mangrol phase-11 with 50% central support.

Fisher flocks

People of Gujarat who live near the coast or river basically engaged themselves with fishing or other profession related with fishing. We can classify fishing profession as Actual fishing 73.04 %, marketing 16.62 %, net marketing repairing 9.93% hatchery 0.22% ornamental fishing 0.05 % and miscellaneous is 0.09 % Though Gujarat is traditionally vegetarian state but it is one of the most important fish producer state in India. It is noted that the exploitation of the resources is limited by the weakness of fish catching methods and inadequacy of the fishing harbors and fish landing facilities.

Government understand the important of this industry for the economical growth of state hence announced as well as launched many schemes for the rapid development of fisheries to uplift fishermen social life increase export of marine products and develop fish-based industry. The main objective of first three-year plan was to increase fish production by mechanization of traditional fishing craft while the exploitation of unstrapped resources was under taken during the fourth plan by introducing small and medium sized trawlers. From 1978 onwards subsidies on mechanized boats of 14.8 m and above were discontinued and an interest loans with moratorium was concentrating its attention on the development of harbors and jetty facilities and ice plants, freezing plants and approach roads.

Fish production and export

Gujarat rank first in marine fish production among all the maritime state of the country. In last two decades marine fish catches in Gujarat has gone up by three times. The total fish production was 654572 tons in 2003-04 while in 2017-18 it reaches to 8.35 lakh tones. Out of that 1.34 lakh tones was the contribution of the inland fisheries and rest (7.01 lakh tones) from marine. Shrimp culture has also shown remarkable growth in Gujarat fishery. Its contribution is very important as it is directly exported to the foreign country due to its demand so it stands as a source of foreign currency. During 2005-2006 shrimp production were 66520 metric tons which was the record production of shrimp from its beginning that time its contribution was 10.02% in Gujarat fishery. In 2017-2018 shrimp production was 55323 metric tons with 6.62% contribution in Gujarat fishery.

At the time of separate state formation of Gujarat, fishery sector of the state was very confined fish product which was exported to its neighboring country were either dried or in the fresh form. Gujarat fishery export trade has undergone great change over the year. In 1973 first time export of processed marine fish was started when a processing plant came into existence at Veraval. After that the drastic change came in the processing, freezing, fish curing sector which not only increase the quality of export fish but also increases the demand of Indian sea food in the overseas country. In the initial stage the surplus fish mainly sundried or salt cured were sent to Mumbai, from where

they were exported to neighboring country like Sri Lanka, Malaysia, Hong Kong, Singapore etc. The exported fish product mainly consists of Ribbon fish, Jew fish, Cat fish, Bombay duck etc. the system was changed after 1971 when trawl fishing was totally introduced in the state. Last 10 years were the golden year for the Gujarat fishery as state gives its consistent contribution in Indian export fishery. The state has exported 188 metric tons of processed fish worth Rs. 1264.61 crore in the year 2006-2007. That year contribution of Gujarat in the export fish was 30.71% in term quantity while 15.12% in term of money value with respect to Indian export fishery. In 2017-2018 marine product exported from Gujarat was 312586 metric tons amounting 955.68 crores money value. This year contribution of Gujarat was 22.7% in term of quantity while 11.24% money value with respect to Indian export fishery.

Government schemes for fishery development

The state government has introduced new schemes, programmers from the year 2006-07. Special attention has been given to provide infrastructure facilities to this activity. Plan provisions made in the last three years are given below. The GFCCA was set up in 1956 as apex fishery cooperative institution. It is engaged in different fishery activities like fish procurement and marketing, fish processing, storage export, boat building fishing gear, running net marketing plants, dry fish trade, sale of diesel etc. the member ship of GFCCA consist of 72 primary cooperative societies and individual fisherman in 1985-86. In the year 1995-96 primary cooperative 197 and 2225 individual fishermen were the member of GFCCA. The authorized capital is Rs.3 crore and paid up is 85.46 lakh. GFCCA has branches in Veraval, Delhi, Daman, Valsad, Diu, Jamnagar, Valod and Bilimora. Fishery society of Gujarat at district level is very active organization as it involves tribal as well non-tribal member. As per the 2011 census 232 district cooperative are working in the state.

Table 1. Fisheries resources of India and Gujarat

S.N.	Item	Unit	Details	
			India	Gujarat
1	Total geographical area	Square Kilometer	3287263	196024
2	Coastline	Kilometer	8118	1600
3	Continental shelf	Square Kilometer	530000	184000
4	Area of EEZ	Square Kilometer	2020000	214000
5	Brackish water Area	Hectare	1240000	376000
6	Fishing villages / towns	Numbers (2003)	3322	970
7	Fishermen house hold	Numbers	756212	88,358
8	Fishermen population	Person	16096975	140327
9	Active fishermen	Person	4000000	218000
10	Marine landing centers	Numbers	1537	217
11	Inland landing centers	Numbers	-	665
12	Estuarine landing centers	Numbers	-	88
13	Mechanized fishing fleet	Numbers (2003-04)	53684	18,369
14	Non-Mechanized fishing fleet	Square Kilometer	-	11,784
15	Reservoir Area	Million Hectare	3.15	0.286
16	Ponds/ Tanks	Million Hectare	2.414	22,000
17	Rivers and canals	Kilometer	195210	3685

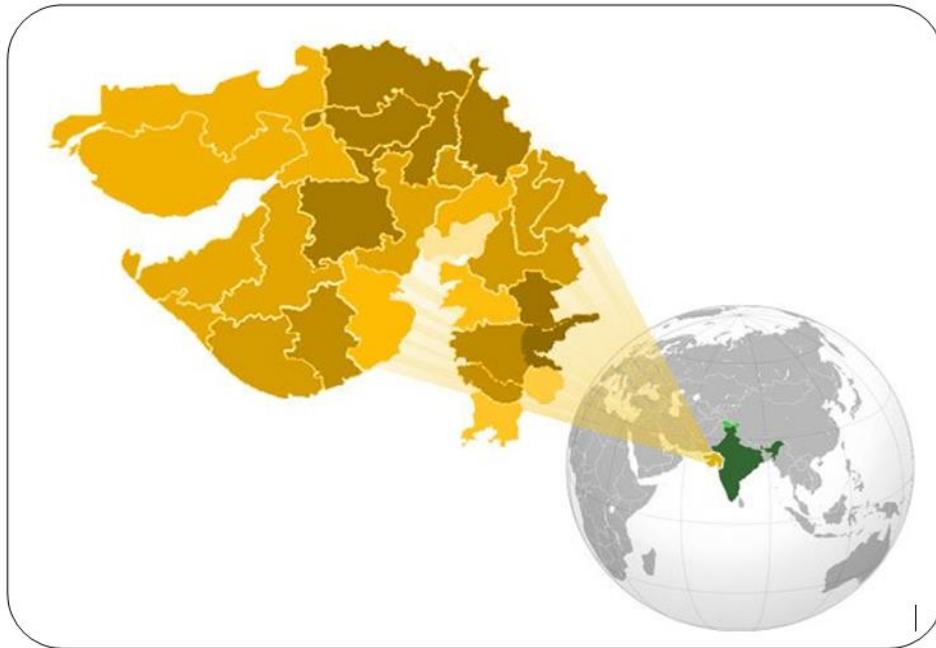


Figure 1. Map of Gujarat

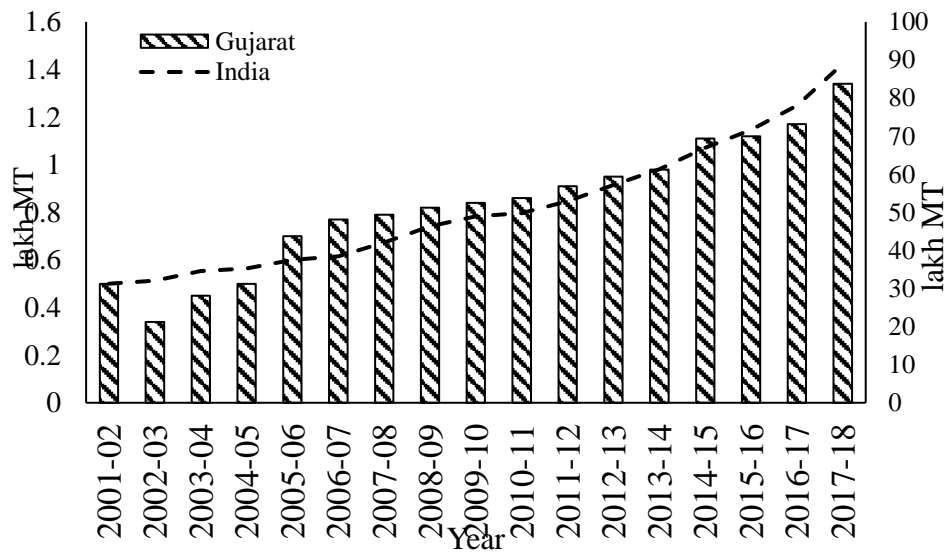


Figure 2. Inland fish production (Lakh MT) of India and Gujarat

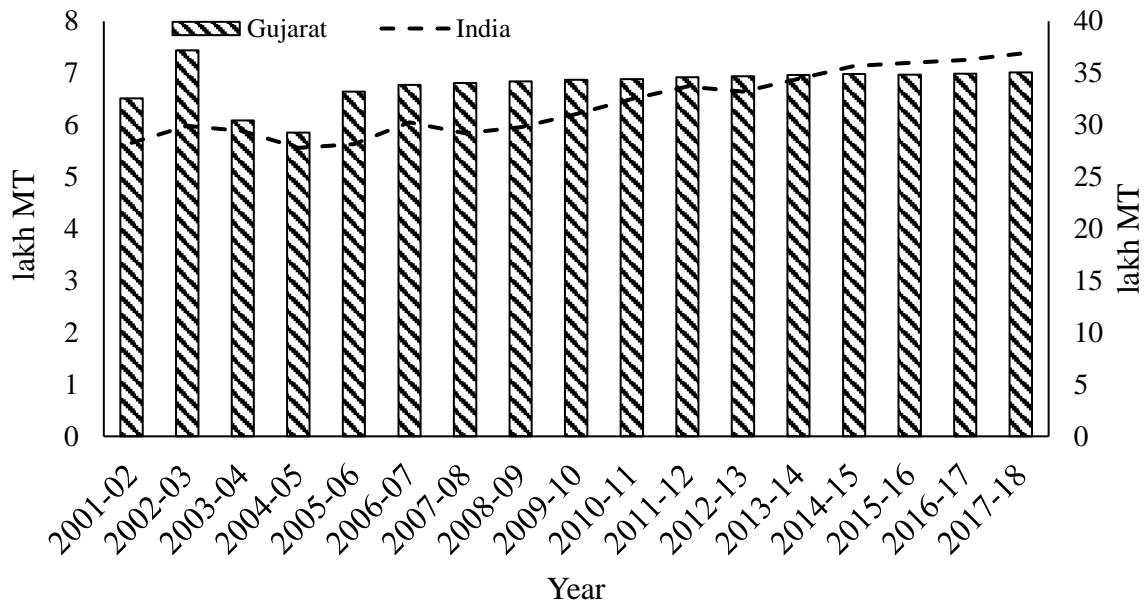


Figure 3. Marine fish production (Lakh MT) of India and Gujarat

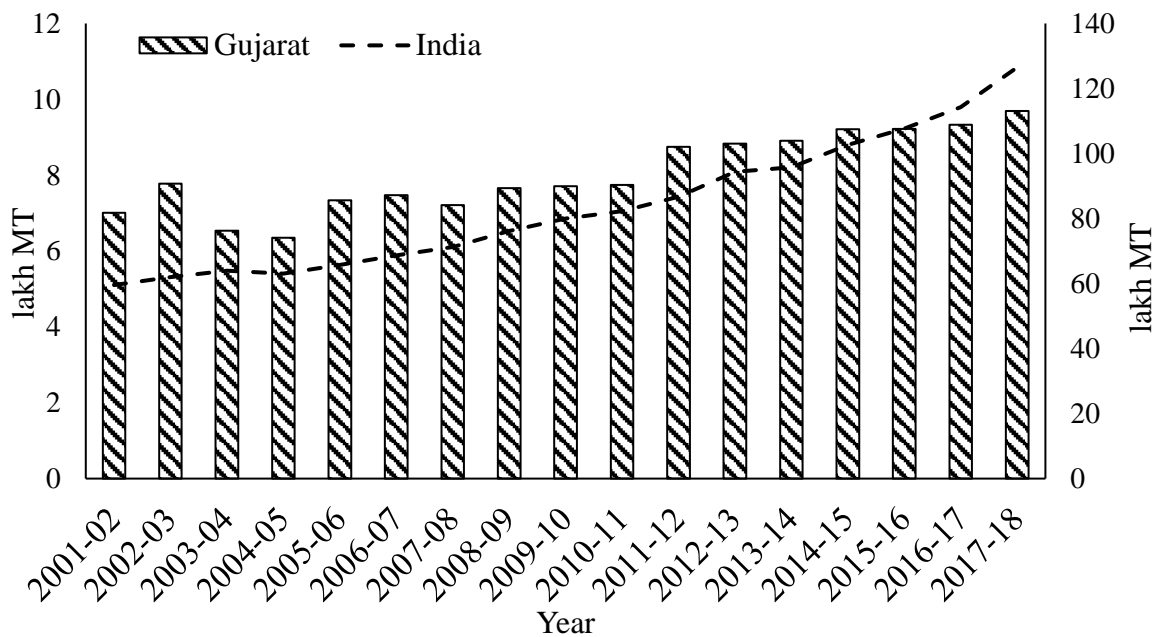


Figure 4 Total fish production (lakh MT) of India and Gujarat

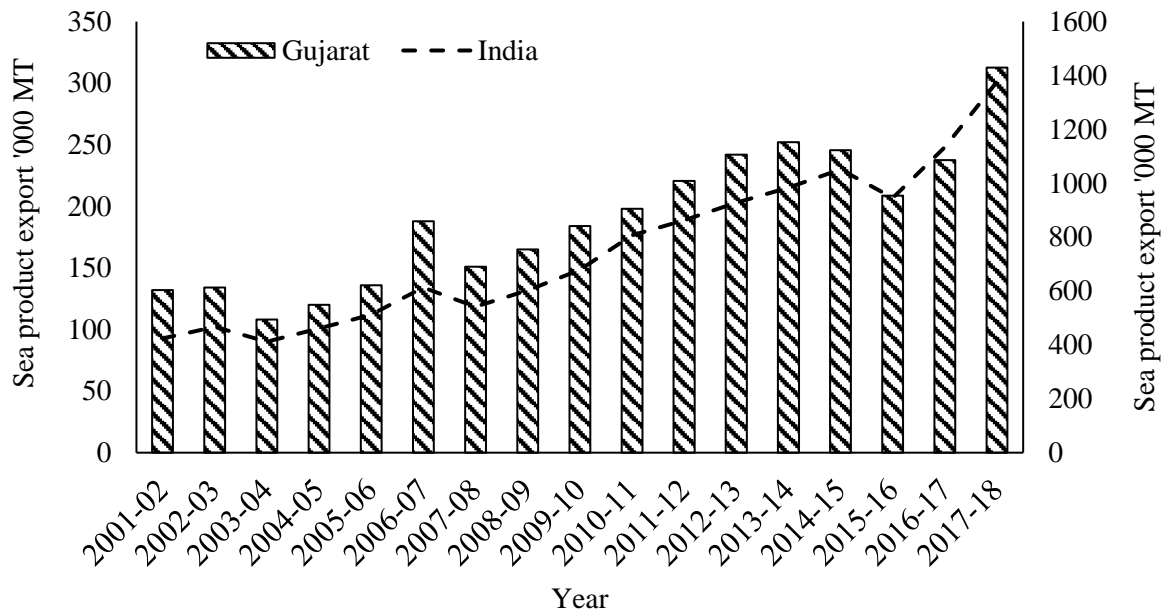


Figure 5. Sea product export (quantity) of India and Gujarat

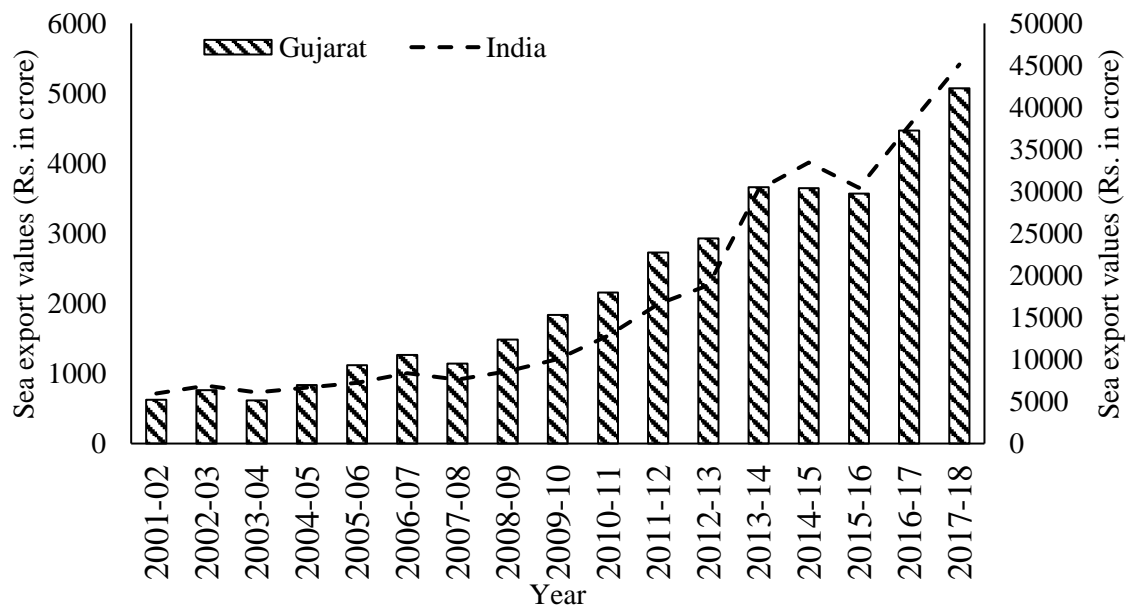


Figure 6. Sea product export (values) of India and Gujarat