

# **Report to** **PADI FOUNDATION**



## **Grant No. 103**

**Whale Shark Research Project – India  
Research - Conservation - Ecotourism  
Development**

**Submitted June 18, 2001  
by**

**Shark Research Institute  
P.O. Box 40  
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**REPORT ON THE OBJECTIVES SPECIFIED BY SRI  
FOR STUDY OF WHALE SHARK INDUSTRY  
AT VERAVAL, GUJARAT, INDIA  
*By Arun and Alka Patil***

**OBJECTIVES**

**(A) Details of exporters:**

All exporters of marine products have to register with the Federal Ministry of Commerce and are listed in a directory brought out by “Marine Products Export Development Authority” (MPEDA). A study of the latest edition of the “**Exporters Directory**” showed that no exporter has been listed as dealing with “whale shark meat”; although it is known that quite a few deal exclusively with this item. The list of exporters given below is based on discreet inquiries with people within the trade. It has not been conclusively verified. The contact details of the firms are taken from the directory.

**Firms listed in the directory:**

1. Amar Cold Storage

Address : Fish Market, Porbandar, 360575, India.      CEO : Mr S. Tejudeen

Tel : 91 286-242501 / 242502      Fax 245519

Category : Manufacturer Exporter,      Place : Porbandar      Capacity : 161 Ton / day

2. Amison Food Ltd

Address : Amison House, Rameswaram Road, Karuvelipady, Cochin, 682005, Kerala

CEO : Mr AH Mohamed Babu ,      Local person at Veraval : Mr. Basheer

Tel : 91 484-224250      Fax 224008

Category : Manufacturer Exporter,      Place: Edakochi & Veraval, Capacity : 65.5 Ton / day

3. Jinny Marine Traders

Address : 1306/1311 GIDC Estate, Veraval 362269

Tel : 91 2876-31339      Fax 31787      CEO : Mr. Kenny Thomas

Cat : Manufacturer Exporter      Place : Veraval      Capacity : 37.5 Ton / day

4. Salet Seafood Pvt. Ltd.

Address : NM Chiralaya Bldg, Sudama Rd., Porbandar, 360 575,

CEO : Mr Karsanbhai Salet, Tel : 91- 484 – 234851/52 Fax 232020

Cat : Manufacturer Exporter, Place : Veraval & Jamnagar Cap: 52 Ton / day

5. Balihari Cold Storage

Address : 1315, GIDC, Veraval 362269, CEO : Mr Harkishan P. Vanik

Tel : 91- 2876 – 42450 Fax 40082,

Cat : Manufacturer Exporter, Place : Veraval Cap : 36 Ton / day

6. MRH Trading Co

Address : 1017 GIDC Veraval 362269, CEO : Mr Anil Nair

Tel : 91 – 2876 - 31770 Fax 31265

Cat : Manufacturer Exporter, Place Veraval Capacity Not given

**Firms not listed with MPEDA:**

1. M/s Darbar Impex, Veraval

Note : Reported to be backed by Chinese / Taiwanese capital

2. M/s Sagar Samrat, Porbandar, CEO Mr. Karsanbhai

Note : Specializes in whale shark skin export.

3. M/s Makki Sea Foods, Owner Mr. Munir Makki

Note : He is a sub-dealer in whale shark fins, liver oil and salted meat. Exports as well as supplies to newly developed Indian market. At least 8 sub-dealers of similar level, specialized in whale shark business, are understood to be operating in Veraval. However, contact details could not be obtained.

4. Mr. Kalu

Note : He is reported to be operating on a big scale as a link between boat-owners and factories without having a registered company or office.

Although whale shark killing has so far not been banned in India, there appears to be a stigma attached to dealing with whale shark products. After Mr. Mike Pandey's film shot in Veraval, there is a resentment among the whale shark industry that 'outsiders' and

‘foreigners’ are snooping around for evidence to impose a ban on killing of ‘whale sharks’ which will jeopardize the trade in a product with very high profit margins.

#### **Quantity of whale shark exports :**

As noted above, none of the known whale shark product exporters admit officially of dealing with these items. Attempts to find out the quantity of their export brought out negative, vague or embarrassed responses. At this stage, it is not possible to find this information directly from the parties concerned.

The MPEDA also brings out a publication called “**Statistics of Marine Product Exports**”. A study of the latest copy of this publication indicates that, although there are scores of marine products listed, ‘whale-shark meat’ does not appear in the data. Discussions with Mr. Patra, Deputy Director, at the Veraval office of MPEDA, revealed that whale-shark meat is invariably exported as frozen meat and, therefore, appears under “Frozen shark meat”. Since no other shark meat is understood to be exported from India, it is safe to assume that the data under this sub-head represents ‘whale-shark meat’. This conclusion is further supported by the fact that countries like Taiwan, Hongkong and China are the major destinations for frozen shark meat.

The data for 1994 – 98, extracted from the above publication, is given in **Table 1** (Page 20). The nearest port to Veraval is Porbandar. The details of export of ‘frozen shark meat’ from Porbandar (which represents whale-shark meat) are given in **Table 2** (Page 20). We contacted the MPEDA headquarters by email and got the whale-shark meat export data for 1999 and 2000 which has been added to the Table 2. Efforts are in hand to see if further data can be obtained from them.

Other whale shark products can not be separately identified in the official data.

The local MPEDA office refused to entertain queries regarding quantity of export by individual firms or their export destinations. Even the data for period beyond 1998, being collected by that office for Veraval and surrounding areas, was not revealed since it has not been published as yet.

## **(B) Data on whale shark landings**

Inquires about whale shark industry with Mr. Joe Kizhakudan of Central Marine Fisheries Research Institute (CMFRI) as well as scientist of Central Institute of Fisheries Technology (CIFT) at Veraval produced vague responses. During these discussions, it was observed that the CMFRI data is obtained by observations on selected days and then extrapolated. Since whale shark landings do not follow any pattern, this method appears unreliable. The CIFT data is collected by their field staff who relies on the visits to the landing point and information from fishermen. This method appears more reliable. We talked to Mr. HV Pungera, Laboratory Assistant in CIFT, who has been collecting the information on whale shark for the last 3 years. Data obtained from his notes is given at **Table 3** (*Page 21*). It will be seen that he has recorded the amounts of auction bids for each whale shark landing from January 2000. These amounts can be considered proportionate to the size / weight of the whale shark.

We got reference to two very relevant papers published in the ‘Indian Journal of Fisheries’ (IJF) and “Current Science.” Details of whale shark landings at Veraval from 1988 to 91 are extracted from the paper entitled “ Whale Shark Fishery off Veraval” by Mr E. Vivekanandan of CMFRI in IJF are given at **Table 4** (*Page 23*). The paper published in the Current Science entitled “ Whale Shark in the Indian coast – Need for conservation” by Mr. Praveen of CIFT has summarized the landings of whale sharks at Veraval from 1988 to 1998. This data is given at **Table 5** (*Page 24*).

## **Relationship with exporters**

The approach to the exporters owning factories was made through **Mr. KP Thomas** who is the President of the Gujarat Branch of the ‘Sea Food Exporters Association’. We learnt that Mr. Thomas was the pioneer in establishing the whale shark industry at Veraval through his company Jinny Marine Traders by locating buyers in Taiwan for the whale shark meat that was coming in through occasional catches but had no demand locally. He told us that the rate at which the industry grew was beyond his imagination. When he realized that the whale sharks are being exploited beyond sustainable levels, he stopped trade in the whale shark products. We have managed to establish a good rapport with Mr. Thomas and also with his son Kenny.

The only other big exporter with whom we could establish rapport was with **Mr. Anil Nair** of M/s MRH trading. Discussion with him in his office indicated that he wasn't very happy dealing with whale shark meat, but the profit margins are too big for him to ignore this market. He also indicated that if a ban on whale shark killing is enforced, he would shift to other products. The frozen samples obtained by us were from his factory.

We could not establish contact with other big exporters in the available time.

Meeting with the sub-dealers of whale shark meat was more difficult since they were mostly semi-literate people. They do not have the sophisticated refrigeration units. As such, they either act as middlemen for the bigger exporters or preserve the meat by salting it before their eventual sale. Most of them are not listed with the government monitoring agency. We managed to establish a good rapport with **Mr. Munir Makki**. His set up consists of a large drying area, a twin tank for producing liver oil and a hut serving as office. He permitted photography and most of the shots of the dried fins and liver tanks are from his setup. The fresh / salted samples and liver oil were also obtained from him. We feel he will be a valuable contact for grass-root information on whale shark industry at Veraval.

Our final conclusion about Veraval exporters matches with that Ms Marie Levine that they are basically businessmen who are opposed to the ban on whale-shark killing but they would adopt to the situation when ban if the ban is enforced. A mafia-like situation definitely does not exist at Veraval.

## RESEARCH

### 1) Whale shark tagging :

Discussions with various officials indicated that there is no Government department recognized as the sole authorizing agency for tagging. Tagging of birds is carried out by Indian NGOs routinely. Mr. Joe Kizhakudan of CMFRI said that they have done tagging of prawns earlier. So, it seems possible that the tagging could be done as a collaborative operation between CMFRI and SRI. The decision would be taken at the level of Director, CMFRI whose contact details are given below.

#### **Dr. Mohan Joseph Modagil**

Director, HQ CMFRI

Post box 1603 , Ernakulam , 682014 , Kerala, India.

Tel. : Office : 91-484-394863 /391407      Fax 394909

Second approach to the tagging operation is typically Indian and more practical. Since tagging is basically a non-invasive operation, it can be carried out discretely. The guiding principle is “if you don’t ask, nobody can say no”. Talking to some of the scientists, it emerged that some of them have doubts that if a ‘foreign agency’ is involved, the tags may even be used to clandestinely record offshore sea data. We may therefore consider carrying out tagging during the diving for whale shark tourism package.

### 2) Occurrence of whale sharks tags:

The poster in the local language about the tags attached by SRI on whale sharks was downloaded from website along with photograph of an actual tag (*See Appendix E*). Hundreds of Xerox copies of this poster were distributed among boatmen, whale shark carcass cutters and lower level government officials connected with whale shark data collection. A copy was put on the notice board of Koli boatmen’s association. Copies were also handed over to exporters Mr KP Thomas and Mr Nair during our meeting with them. We have added our Goa address on the poster as contact address since that would be easier for the local population. Also we have announced cash award of 500 Rupees for the reporting person which may be a more powerful incentive for the poorer finders more than



the feeling of contribution to a conservation effort. So far we have not received any feedback.

### **3) Measurements and Tissue Samples :**

We find that whale shark occurrence at Veraval seems to vary every year. Mr. Mike Pandey had recommended mid May as the ideal period for whale sighting. Whereas, we found that the landings of whale sharks had tapered off by the second week of May. In fact 15 May to 15 September is officially declared by the government as a closed season during which the fishermen are prohibited from venturing in the sea. They are likely to be fined if caught by the coast guard. The subsidy on diesel is not available during this period making fishing trips costlier. The insurance cover is also withdrawn. In spite of these factors, there are stray boats going out for fishing.

We did manage to get flesh samples of a juvenile whale shark on 20 May (*Page 25*). Our contact with exporters yielded 5 samples from frozen stock available with one of them. The contact with the middlemen / sub-dealer yielded three salted meat and the liver oil samples. These are likely to be the most contaminated samples since working conditions at this location were unhygienic. The cyclone conditions thereafter dried up the fishing trips completely and we had to hastily come out of Veraval area when the storm headed towards the Saurashtra coast. The samples in glass vials were filled with ethanol and bigger flesh samples were packed in plastic bags with salt as per instructions received from Ms Levine. However, courier agencies are not ready to handle this package due to a specific ban by US customs on all flesh samples and since ethanol is considered as a inflammable liquid.

We could not locate any whale shark jaws. Even for the shark landed on 20 May, we only got access to the meat and could not find out which dealer had taken the rest of whale shark products.

It is not clear if SRI needs larger number of samples than what we have collected. As an investment, we have paid a retainer to one of the officials engaged in recording the whale shark data and left glass vials, plastic bags and ethanol with him. He has been promised reimbursement of shipping costs for sending samples to Goa. The reliability of this source is

still to be ascertained. Otherwise, the only way to get flesh samples is to sit at the jetty throughout the day waiting for the unpredictable whale shark landings. Remote control does not work because the fish is disposed of within 2 to 3 hours of it reaching the jetty.

#### **4) Eco-tourism assessment :**

The whale shark landings have been reported all along the Saurashtra coast from Dwarka to Jafarabad. However, the whale shark meat processing facilities are located only at Veraval. The fishermen therefore prefer to tow the whale shark to Veraval jetty. So the data showing lesser number of landings at other places on Saurashtra coast may be misleading. Discussions with a cross-section of boatmen indicated that Veraval would still be the best location to set out for whale shark sighting.

Since Veraval is full of foul fish smell during the fishing season, we have located a hotel just outside the town. It is built on a huge plot of farmland with a decent swimming pool. Rooms are spacious with air-conditioning and individual sunbathing verandas. Owner has agreed to spruce up the rooms and we can accommodate around 40 guests in A/C rooms on twin sharing basis. Catering can be organized as per our requirement. The nearest airport is Rajkot, which is about three and half hours drive from Veraval. Ahmedabad is not a good staging point since the drive to Veraval would be too long.

It is the beautiful island of Diu, located just 90 km away from Veraval, which makes the package very attractive due to its far better infrastructure (*Page 54*). Diu is a Union territory, which means that the main hurdle of prohibition in force all over the state of Gujarat is not applicable to Diu. It has beautiful beaches superior even to Goa. The beach-side hotels are excellent. The island has a distinct Portuguese touch since it was part of their colony along with Goa and Daman. A private airline connects Diu with Bombay directly so that further driving is eliminated. Superiority of infrastructure suggests that Diu could be the base for our eco-tourism project. It may be possible to set out for search of whale shark from Diu itself. There would not be any limitations on the number of guests Diu can handle simultaneously since the availability of AC rooms is very large. Cars and buses are available locally for hire.

Finding a boat for our purpose proved to be the most difficult aspect. The whale shark fishing industry and expertise is exclusively restricted to the 'Koli' community of the fishermen. Even the wealthy factory owners could not enter this closely guarded profession indirectly by advancing loans to buy fishing boats. So, at least initially, we have to depend on hiring boats along with its crew from this community. For this purpose, we established contact with Mr. Solanki, who is the "Patel" (head ) of the Koli boat association. He invited us to a meeting of prominent community members. It appears that all boats tie-up with a processing factory for the entire fishing season from mid September to mid May. It is difficult to hire boats for a shorter period of say 2 to 3 weeks since it would involve breaking their ongoing contract. Mr Solanki indicated that it might be possible for him to arrange a boat with crew from mid March to end of the season in mid May which, in his opinion, is the time for maximum sightings of whale sharks around Veraval. It would be necessary to indicate our requirement before commencement of the next fishing season in September 2001. The boat can be modified to provide shelter, chairs and other basic comforts. The arrangements for carrying dive cylinders, accessories and ladder for getting in and out of the boat can also be organized. We can also plan to put additional safety equipment and communication sets as added precautions. But the boat will still remain a far cry from a sleek live-aboard. Since the whale sharks are sighted fairly close to the shore, we don't expect long boat rides for the guests. So, I presume, this would be acceptable. We can improve the amenities as we go along.

Since the ban on the whale shark killing was not yet confirmed, the mechanics of operating the boat for our eco-tourism project was discussed with Mr Solanki. The problem envisaged was that, as soon as the whale shark is sighted, all boats would converge on it for the prize catch. The chief confirmed that he would instruct all the boats to keep off the tourism boat if it reaches the whale shark first. They would keep off as long as the dive flag is flown on the mast.

It's not very clear if the ban on killing of whale shark will be in place by next season and how effective it will prove to be. It would be in the interest of the long term conservation effort that the local fishermen community benefits from tourism activity and views it as a beneficial alternative. We would therefore like to advise against bringing in sophisticated

boats for tourism purpose from outside at least in the initial phase. The expertise of spotters who are able to operate even in moonlight will also be very valuable for our purpose.

There are quite a few tourist attractions nearby. The ancient temple of Somnath, the excavated ruins of Lothal (of the Mohenjodaro period) and the Asiatic lion sanctuary of Gir are some examples. We have also established the possibility of organizing ethnic dances, music and crafts as night entertainment. The beaches of Diu, in our opinion, would be the star attraction.

We would be able to put in place a professional package covering all aspects of the whale shark tourism project including diving and work out the costs after receiving further inputs from SRI and prepare a 'power point' presentation of such a package.

# **Appendix A**

## SRI ACTION ALERT

**"The whale shark massacre in India is an extinction level event."**

*Mike Pandey, documentary filmmaker and producer of Shores of Silence - Whale Sharks in India, November 2000, Mumbai, India*



**"If the slaughter of whale sharks along the coast of India continues unchecked, the species will be ecologically extinct within two years at most."**

*Prahlad Kakar, Director, Marine Watch Reef Conservation, November 2000, Mumbai, India*

**"If whale sharks are to be saved from extinction, it will be the sport divers of the world that save them."**

*Marie Levine, Executive Director, Shark Research Institute*

**"Let's give our children, grandchildren and future generations a precious gift: the opportunity to swim with whale sharks."**

*Sandeep Unnithan, India Express Newspaper*

**Last year (2000) 1,200 whale sharks were slaughtered along a 20km stretch of the Gujarat (India) coast. None of the sharks were consumed in India; their fins and flesh were exported to Asian markets.**

Some sad things you can't do much about, but this isn't one of them. SRI has the staff and experience in development of whale shark ecotourism. PADI Foundation and Project Aware are providing partial funding for this initiative.

## **Appendix B**

Subj: For Ms Marie Levine, Executive Director: Co-operation in the field of Marine Conservation  
Date: 11/21/2000 2:23:23 AM Eastern Standard Time  
From: niwsgoa@goa1.dot.net.in (NIWS)  
To: SRILevine@aol.com (Diving -Levine -sport diver)

It was a pleasure and a privilege to have met you during your fax trip to India. The work being done by Shark Research Institute is of immense importance. I, on the behalf of Ministry of Tourism, Government of India and National Institute of Watersport, would like to offer whatever contributions we can make to strengthen the efforts of SRI.

We had brief discussions on this aspect with you during which it emerged that NIWS can be of help in the following aspects :

- 1) Nodal point for collection of data related to shark bites / sighting of whale shark.
- 2) Creation of public opinion against killing of whale sharks and initiating the process for legislation against it's killing through Ministry of Tourism.
- 3) Introduction of whale shark related eco-tourism off Gujarat coast.
- 4) Generation of know-how for tagging of whale sharks by participation in the shark expeditions.

I look forward to joining hands with SRI in its conservation efforts.

Cdr. Arun Patil  
Principal

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----- Headers -----

Return-Path: <niwsgoa@goa1.dot.net.in>  
Received: from rly-yd02.mx.aol.com (rly-yd02.mail.aol.com [172.18.150.2]) by air-yd04.mail.aol.com (v77.14) with ESMTMP; Tue, 21 Nov 2000 02:23:23 -0500  
Received: from goa1.dot.net.in (goa1.dot.net.in [202.54.17.30]) by rly-yd02.mx.aol.com (v76\_r1.19) with ESMTMP; Tue, 21 Nov 2000 02:22:39 -0500  
Received: from niws ([210.212.161.163])  
by goa1.dot.net.in (8.11.0/8.9.3) with SMTP id eAL7R5c03337  
for <SRILevine@aol.com>; Tue, 21 Nov 2000 12:57:05 +0530 (GMT)  
Message-ID: <00d001c0538b\$bb92e620\$90a1d4d2@niws>  
From: "NIWS" <niwsgoa@goa1.dot.net.in>  
To: "Diving -Levine -sport diver" <SRILevine@aol.com>  
Subject: For Ms Marie Levine, Executive Director: Co-operation in the field of Marine Conservation  
Date: Tue, 21 Nov 2000 12:08:49 +0530  
MIME-Version: 1.0  
Content-Type: multipart/alternative;  
boundary="-----\_NextPart\_000\_0083\_01C053B3.CE9CAE40"  
X-Priority: 3  
X-MSMail-Priority: Normal  
X-Mailer: Microsoft Outlook Express 5.00.2314.1300  
X-MimeOLE: Produced By Microsoft MimeOLE V5.00.2314.1300



# **Appendix C**

## Objectives

1. Assess the existing infrastructure for development of whale shark based ecotourism:
  - a. How viable is ecotourism locally? If most of the tourists come from Amedebad or Mumbi, how will tourists get to the area?
  - b. Will tourists need to rent a car for their stay? If so, what are the costs?
  - c. Number & quality of air-conditioned rooms available for local tourists & international tourists.
  - d. Proximity to beach, boat launch & restaurants.  
According Lonely Planet guide, Veraval may not have attractive dive areas or resorts. If this is the case, are there other locations that would be more suitable? If so, what is available in these areas with regard to accommodations, boats, side trips?
  - e. Find boats that would be suitable platforms for viewing or diving with whale sharks. If considered for diving they must have shelter for underwater cameras and boarding platforms.
2. Get the names and contact numbers of the exporters of whale shark fins, flesh & skins. Meet with them and find out the amounts of whale shark material they are exporting, to whom and where is it being sold, HOW much they are exporting and if the amount has declined. (We need to know if whale shark numbers are declining). THIS IS HIGH PRIORITY.  
  
Establish a good relationship with the exporters; they are potential investors in a whale shark ecotourism industry.
3. Find out who in the government we should apply to for a permit to tag whale sharks.
4. Check with fishermen regarding occurrence of tagged whale sharks. We do not need to recover the tags if you can photograph them and record their identification numbers.
5. Measurements & Tissue Samples:
  - a. We need measurements of the width of the leading edge of the first dorsal fin from a variety of whale sharks. (A researcher in Australia hopes to deploy a satellite tag that clamps on the first dorsal fin.)
  - b. We need small (1/4" x 1/4") samples of whale shark flesh for mtDNA analysis to determine if the sharks are a unique breeding pool in the

Arabian Sea. Each sample should be placed in a small vial filled with ethanol.

- c. We need some samples 1" x 1" of whale shark flesh from a variety of sharks. (These can be packed in a lot of salt and sealed in plastic bags.)
- d. If at all possible, collect one or more whale shark jaws. These can be packed in salt and wrapped in plastic and sealed. (It will be impossible to remove all the flesh and they will be really smelly, but the smell may be minimized if the bags are completely sealed with heavy tape.)

And document, document, document everything you see and hear about the whale shark industry: names, numbers of sharks, sizes and sexes of sharks caught, why the fishermen think they come to this area, and names & contact information of people that may be helpful (to SRI / marine conservation / development of dive ecotourism / getting this legislation passed ) now and in the future.

# **Appendix D**

**TABLE 1****Country / Item wise exports of marine products, Item : Frozen shark meat****Source: Statistics of Marine Products Exports 1998 , page 66**

	1994	1995	1996	1997	1998
<b>A ) China</b>					
Qty in Tonnes	-	48	24	24	136.1
Value in Rs Lakhs	-	12.15	6.47	6.39	53.25
Value in \$	-	25, 850	13,765	13, 595	1,13,300
<b>B) Hongkong</b>					
Qty in Tones	-	32.75	18.52	18.04	37.6
Value in Rs Lakhs	-	10.3	6.21	6.43	17.17
Value in \$	-	21,915	13,210	13,680	36,530
<b>C) Taiwan</b>					
Qty in Tones	-	408	55.23	34.02	162.2
Value in Rs Lakhs	-	118.71	17.79	13.54	78.21
Value in \$	-	2,52,575	37,850	28,810	1,66,405

**TABLE 2****Port / Item wise export, Item : Frozen shark meat****Source : Statistics of Marine Products Export 1998, Page 264**

	1994	1995	1996	1997	1998	1999	2000
<b>Porbandar</b>							
Qty in Tonnes	44	240	45.6	-	139.96	671.9	663.6
Value in Rs Lakhs	6.19	68.16	14.72	-	60.42	274.20	1032.88
Value in \$	13,170	145,020	31,320	-	128,550	583,405	2,197,620

Note : 1) The figures for 1999 and 2000 were obtained from the statistics section of MPEDA by Email and have not been published so far.

2) 1 Lakh = 100,000

**TABLE - 3****LANDINGS OF WHALE SHARKS AROUND VERAVAL****Source : Notes of Mr HV Pungera, Lab Asst., Fishing Technical Section, CIFT, Veraval**

Month	Location	Date	Number	Details	
				Wt in Tonnes	Cost in Rs. (Lakh)
<b>Sept, 00</b>					
	Jaleswar	14 to 17	50		
	Rupen,	15 to 18	60		
	Bhidiya	15	25		
	- do -	16	15		
	- do -	17	10		
	- do -	18	7		
	- do -	19	11		
	- do -	20	5		
	- do -	21	1		
	- do -	22	5		
	- do -	23	2		
<b>Dec, 00</b>	Bhidiya	6	1	1	
	- do -	18	2		
	- do -	19	5		0.25 to 0.80
	Mul-dwarka	19	40		
	Dhamlaj	20	2		
	Bhidiya	21	14		
	Muldwarka	21	15		
	Bhidiya	22	4		
	- do -	23	6		
<b>Jan, 01</b>	Bhidiya	21	1		
<b>March, 01</b>	Bhidiya	2	1	-	1.8
	- do -	3	6		

Month	Location	Date	Number	Details	
				Wt Tonnes	Cost in Rs (Lakh)
	- do -	4	1		
	- do -	6	1		
	- do -	23	1	2	0.23
<b>April, 01</b>	- do -	3	1	N/K	1.5
	- do -	4	5		0.16, 0.8, 0.9, 1.25, 1.75
	- do -	5	3		1.75, 1.5, 0.6
	- do -	6	15		0.6, 0.7, 1.5, 0.95, 0.47, 1.1, 0.5, 0.75, 0.4, 0.65, 1.4, 0.85, 0.93, 1.15, 1.25
	- do -	7	4		0.8, 1.2, 0.45, 0.9
	- do -	8	3		0.85, 0.6, 1.0
	- do -	9	4		1.5, 1.0, 1.0, 0.2
	- do -	10	1		0.95
	- do -	11	2		1.45, 1.35
	- do -	12	2		0.2, 0.25
	Una, Diu	13	1	4	0.75
	Bhidiya	17	1	0.5	
	- do -	26	1		1.0
	- do -	27	1	0.5	0.057
	- do -	30	6		1.2, 0.6, 0.7, 0.25, 1.8, 0.8
<b>May 01</b>	Bhidiya	1	2		0.9, 0.02
	- do -	2	2		0.65, 0.5
	- do -	3	4		0.7, 0.6, 0.9, 0.65
	- do -	18	1		0.08
	- do -	19	1		0.08

**TABLE 4**

**LANDINGS OF WHALE SHARKS AT VERAVAL 1988 –1991.**

**Source : Indian Journal of Fisheries March 94**

<b>Year</b>	<b>Month</b>	<b>Captured</b>	<b>Observed</b>	<b>Length in mtrs.</b>
<b>1988</b>	March	40	8	7.0 - 11.6
	April	25	12	5.6 – 12.0
	May	51	4	9.5 – 11.6
	June	23	- nil -	
	<b>Total</b>	<b>139</b>	<b>24</b>	<b>5.6 –12.0</b>
<b>1989</b>	March	40	2	-----
	April	55	15	-----
	May	55	3	-----
	<b>Total</b>	<b>150</b>	<b>20</b>	-----
<b>1990</b>	March	NK		-----
	April	53	9	-----
	May	108	- nil -	-----
	June	12	- nil -	-----
	<b>Total</b>	<b>173</b>	<b>9</b>	-----
<b>1991</b>	March	NK		
	April	24	3	9.1 –11.0
	May	114	17	8.5 –12.0
	June	48	19	8.5 –11.0
	<b>Total</b>	<b>186</b>	<b>39</b>	<b>8.0 –12.0</b>
	<b>Grand Total</b>	<b>648</b>	<b>92</b>	<b>5.6 –12.0</b>



**TABLE 5****YEARWISE OCCURRENCE OF WHALE SHARKS IN INDIA**

Source : Current Science Aug 2000

<b>Year</b>	<b>Number</b>	<b>%</b>
<b>1888-98</b>	1	0.1
<b>1898-1908</b>	2	0.1
<b>1908 -18</b>	1	0.1
<b>1918-28</b>	0	0.0
<b>1928-38</b>	3	0.2
<b>1938-48</b>	2	0.1
<b>1948-58</b>	4	0.2
<b>1958-68</b>	10	0.5
<b>1968-78</b>	18	0.9
<b>1978-88</b>	221	11.2
<b>1988-98</b>	1708	86.7
<b>Not Known</b>	4	0.2
<b>Total</b>	1974	100

**NOTES RE: SPECIMENS SENT TO SRI FROM VERAVAL**

1. ‘N’ series specimens are from sub-dealer without access to refrigeration. The meat is salted and stored in open unhygienic conditions. Contamination level is highest for N1, N2 and N3.
2. ‘V’ series specimens are from cold storage of factories with high degree of cleanliness. However, cleanliness before arrival at factories is doubtful.
3. N4 specimen was taken ‘fresh’, within 2 hours of slaughter, after its transportation to the sub-dealer. Contamination level is as low as is possible in Veraval field conditions.
4. The dates recorded for ‘V’ series are approximations, whereas for ‘N’ series dates are accurate.
5. Two specimens of cartilage are also enclosed.
6. All specimens were collected at Veraval, India. Sex of the sharks was not recorded by the fishermen. Total mass of the shark can only be estimated from the weight of the meat recorded for N series specimens (heads, skin, liver and fins were removed prior to transport to the sub-dealer). These data were not available for the V series specimens.

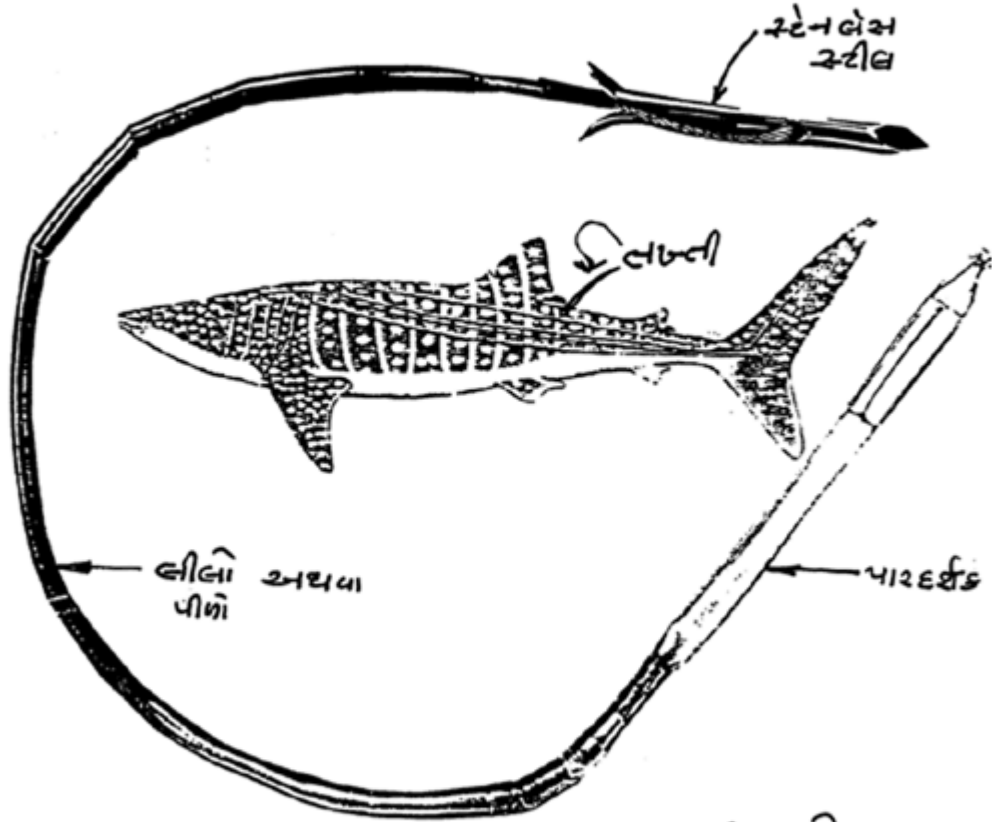
<b>Factory Frozen Specimen</b>	<b>Date (Approx)</b>
V1	02 May
V2	08 May
V3	01 May
V4	07 May

<b>Specimen of M/s Makki</b>	<b>Date</b>	<b>Remarks</b>
N1	10 May 01	Salted Specimen
N2	13 May 01	Salted Specimen Fish Size: 400 kg meat
N3	19 May 01	Salted Specimen Fish Size: 800 kg meat
N4	20 May 01	Fresh Specimen Fish Size: 900 kg meat
N5	(7)	Whale shark liver oil

# **Appendix E**

# સૂચના : ઇનામ

શાર્ક રીસર્ચ ઈન્સ્ટીટ્યુટે ૨૫૦ વહેલ શાર્ક ઉપર  
હીન્દી મહાસાગરમાં લખ્લી લગાવી છે

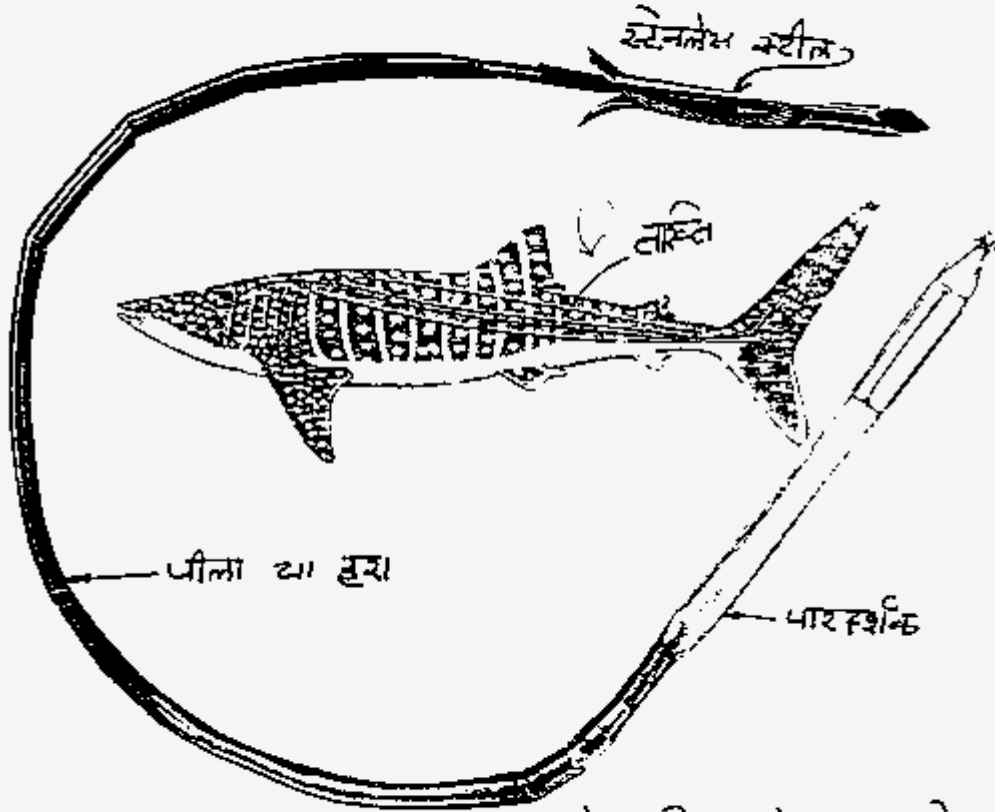


આપને આવી લખ્લી ત્રણ, તો અત્રારી પાસે  
નોંધણી કરવા માટે લઈ આવો (તમે લખ્લી રાખી શકો  
છો પરંતુ અત્રારી માટે એવું જરૂરી છે.)  
આપનો મદદ માટે આભાર

Poster in Gujarati

# सूचना : सूनाम

शार्क इन्वर्टेब्रटने डीनी भङ्गाभङ्गरे अँसी लरुतीथीं  
२५० प्लेक शार्कके लङ्गरे है।



अगर आपके अँसी लरुती भीले तो हमारे पास ले  
आइये हम इन्वर्टेब्रटने डीनी भङ्गाभङ्गरे अँसी लरुतीथीं  
है, अगर हमें देखना ज़रूरी है (आप लरुती इस शकते  
आपकी भङ्गाभङ्गरे लीचे धन्यवाद)



Whale shark tag used by Shark Research Institute in the Indian Ocean



Close up of the tag anchor. It is 2" long and made of stainless steel. An identification number is engraved in the side.

# **Appendix F**





**Photo 1:** View of the fleet of fishing trawlers in the Veraval harbor. The entire fleet is in the harbor because of the government ban on fishing from 15 May to 15 September.



**Photo 2:** A typical locally-made wooden fishing trawler showing space available on the deck. Some of them are marginally longer / wider by a few feet. The hatches seen in the front are for insulated containers for ice and the fish catch.



**Photo 3:** This fishing trawler was hired by the coast guard on a four-month contract for enforcing the fishing ban. Note the yellow polyethylene make-shift shelter and plastic chairs. It is possible to incorporate modifications such as a better shelter for larger number of chairs and ladder.



**Photo 4:** A wooden fishing trawler under construction at Veraval harbor by local craftsmen.





**Photo 5:** The office and ceremonial seat of the Patel (Chief) of the Koli community boat association. All disputes related to fishing are resolved by the Patel without referring them to the police or civil court. The person seen in the photo is he full-time secretary of the chief.



**Photo 6:** Mr. Munir Makki of Makki Sea Foods showing off dried whale shark products. We found him street smart but quite a straightforward person. Alka's presence made establishing our bonafides simpler since as a rule people here were not used to dealing with ladies at the workplace.



**Photo 7:** Whale shark fin sets lying around in thatched storage space.



**Photo 8:** Whale shark fin sets lying around in a thatched storage space.





**Photo 9:** Whale shark fin sets lying around in thatched storage space.



**Photo 10:** The twin tanks are used for producing liver oil. The pieces of liver were dumped into the tank and exposed to sunlight. No chemicals were added except a little soda. A simple hand operated pump was used to fill up the drums from these tanks after about a week (or earlier as per demand). This is an improvement over the method shown in Mike Pandey's film where the liver is shown being cut into strips and stuffed into the drums directly.



**Photo 11:** The locally manufactured multipurpose diesel operated rickshaw is used for carrying men as well as cargo. Here it is shown carrying the fresh meat of the juvenile whale shark landed on 20 May 2001. The head, fins, liver and skin had already been sold to another subdealer.



**Photo 12:** The magnificent temple of Somnath at sunset. The ancient Hindu temple of Somnath which is located just 6 kms away from Veraval is considered one of the holiest Shiva temples in the country. For better views, visit their website at [www.somnath.org](http://www.somnath.org).

# **Appendix G**

**Thursday**

31 May 2001

## **Whale shark notified as protected species**

**The Times of India News Service**

NEW DELHI: The Union government has issued the formal notification extending the shelter of the Wildlife Protection Act to the largest fish, the whale shark. This is the first time a fish species has been put in Schedule I of the Act.

With Wednesday's notification, it will now be an offence to capture or kill the whale shark, described as the gentle giant of the sea. Traders will get a month to declare stocks.

Environment ministry officials say they plan to organise a workshop to debate means of raising awareness among fishermen and others on the need to protect the whale shark, rather than concentrate on mere enforcement. Promoting 'dive tourism' or whale shark watching to give fishermen an alternative means of livelihood, as some conservationists have suggested, would need inter-ministerial coordination.

At least some officials are hoping social justice minister Maneka Gandhi, a wildlife enthusiast, will pursue this - they credit the 'quick' decision to extend protection to the whale shark, something conservationists have been pressing for, to the lead taken by her.

Anusuya Basu, spokesperson for WWF-India, which has done a study on the whale shark trade off the Gujarat coast, says they are ready to help the government any way they can. "A lot more work has to be done," she says.

Several countries, like the US, Australia and the Philippines, have already banned the whale shark trade. India, till now, had done nothing.

This docile creature is mainly hunted off the Gujarat coast for export - to the South-East and Far East, even Britain and the US. Off Gujarat, at least 1,200 are killed in the peak, six-week fishing season, according to Mike Pandey, who won the Green Oscar for his film on the whale shark.

All the fish parts - meat, fins, liver, cartilage, skin and viscera - are used commercially. But, says Vivek Menon of the Wildlife Trust of India, the main item in commercial trade is the liver - its oil is used also for waterproofing ships and boats.

<http://www.timesofindia.com/310501/31indi10.htm>



**Sunday**

27 May 2001

## **Govt steps in to protect the whale shark**

**Chandrika Mago**

NEW DELHI: In a move that would make conservationists jubilant, the Union government is set to extend the shelter of the Wildlife Protection Act to the largest living fish, the whale shark. This is the first time a fish species is being put in schedule I of the act.

Killing and capturing the whale shark, described as the gentle giant of the sea, would then be an offence calling for prosecution. Several countries, like the US, Australia and Philippines, have banned the whale shark trade. India, till now, had done nothing to regulate the trade.

The formal notification should be issued "quite early", says an environment ministry official. It is expected next week.

This docile creature is mainly hunted off the Gujarat coast for export - to south-east Asia, Japan, even the UK and US. Off Gujarat, at least 1,200 are killed in the peak, six-week fishing season, maintains Mike Pandey, who won the Green Oscar for his film on the whale shark.

WWF-India, which has done a study on the whale shark trade, says Veraval in Gujarat is the main processing centre. All the fish parts - meat, fins, liver, cartilage, skin and viscera - are used commercially. But, as Vivek Menon of the Wildlife Trust of India explains, the main item in commercial trade is the liver - the oil being used also for waterproofing ships and boats.

Protection for the whale shark is something conservationists have been pressing for. The Union government was originally a little reluctant, one because fisheries is a subject handled by the agriculture ministry and two, because officials were doubtful whether they would be able to enforce any law on this.

Conservationists are not particularly keen on penal enforcement. As Wildlife Trust of India's Ashok Kumar put it, what they would recommend is that the fishermen be encouraged to take up whale shark watching. WWF-India has suggested turning the entire area off Gujarat into a marine sanctuary, developing "dive tourism" into an industry that can provide an alternative livelihood to fishermen, converting them into protectors of the whale shark. Australia has done it. So could India.

So far, not too much is known about this fish. It is speculated the whale shark lives almost a hundred years and doesn't reach sexual maturity till the age of 30. These fish are found in all tropical and warm temperate seas other than the Mediterranean, surviving on plankton and small fish - the largest recorded whale shark was about 18 metres.

<http://www.timesofindia.com/today/27indi21.htm>

# **Appendix H**





# Ports of Gujarat



# Tourist map of Gujarat



# Gujarat

## FACTS & FIGURES

<b>Area</b>	: 1,96,024 sq km
<b>Population</b>	: 41,309,582
<b>Religion</b>	: Hinduism (89.48%), Islam (8.73%), Others (1.79%)
<b>Maximum Temperature</b>	: 42°C
<b>Minimum Temperature</b>	: 14°C
<b>Capital</b>	: Gandhinagar
<b>Languages</b>	: Gujarati, Hindi, English
<b>Per Capita Income</b>	: 16,251 (at current prices in 1997-98)
<b>Urbanization Ration</b>	: 34.49%
<b>Best Time to Visit</b>	: October to March
<b>Literacy Rate</b>	: 61%

## ▼ INTRODUCTION

Over the ages, Gujarat has seen a succession of races-settlers as well as conquerors-and amalgamated their cultures into its own. The result has been a wonderful fusion of new ideas and old world traditions. Rich in crafts, history and natural beauty, this home state of Mahatma Gandhi continues to attract artists, scholars, intellectuals and businessmen from the world over.

## GEOGRAPHICAL INFORMATION

### Location

Situated on the western coast of the Indian Peninsula, the history of the state goes back to 200 BC. The state is bound by the Arabian Sea on the west, Pakistan and Rajasthan in the north and northeast, Madhya Pradesh in the southeast and Maharashtra in the south.

### Physical Features

On the basis of physiology and culture, Gujarat can be divided into several regions like **Kutch**, **Saurashtra**, **Kathiawad**, and Northeast Gujarat.

Kutch is situated on the northwestern border of the state bordering Pakistan with a maximum altitude of 300 meters and almost desert-like topography. The ridge of Jurassic sandstone in the central part of the region breaks into the landscape at several places. In the north is **Rann of Kutch**, a salt marsh and in the south is **Little Rann of Kutch**.

Between Saurashtra and **Khambhat** is Kathiawad with a maximum altitude of 180 meters and it is flanked by sandstones in the north. It is a region made up of Deccan lavas and cut across by the lava dykes.

The Central Kutch region extends to Northeast Gujarat and the region has low hills and small plains. Southeast Gujarat is an extension of the **Western Ghats** and receives the highest rain in the state.

**Climate** Gujarat has a tropical climate with hot summers and cold winters. The summer months are from April to June with temperatures ranging from 27°C to 42°C. Winters are better with a temperature variance of 14°C to 29°C. Monsoon touches the state in June and remain here till September.

**Flora and Fauna** Though Gujarat has relatively little forest cover left (9.61% forest cover), it still supports more than 40 species of animals-including the rare **Asiatic Lion**, wild ass and blackbuck. An assortment of birds and reptiles completes the tally of wildlife this state supports.

## HISTORY

Situated on the western coast of India, the name of the state is derived from **Gujjaratta**, which means the land of the Gujjars. It is believed that a tribe of Gujjars migrated to India around the 5th century AD. The real cultural history of these people, however, is believed to have begun much earlier. Many Indus Valley and Harappan centers have been discovered in the state like **Lothal**, Dholavira, Rangpur, Lakhavala, Amri, and Rozdi and established the earliest known history of Gujarat to around 3000 BC to 2200 BC. At that point of time, Lothal was the main port of this civilization. With the advent of the Yadava tribe led by **Lord Krishna**, some 3,500 years ago, came the



glorious days for Gujarat. It was followed by 100 years of Lord Krishna's rule.

It is believed that **Ashoka**, the Mauryan king extended his kingdom to Gujarat. The fall of the Maurya Empire led the small kingdoms to establish their power in this state from time to time. The state achieved a high level of prosperity during the time of Solankis from the 9th century. In the 12th century AD, **Allauddin Khilji**, the Sultan of Delhi defeated the Waghela king of Gujarat and a long era of Muslim rule over Gujarat started. The Marathas ended the Muslim rule in the 18th century only to be handed over to the **British** in the early 19th century. Surat was the center of the first factory of the East India Company in India and after the First War of Independence in 1857, the region came under the British monarchy along with the rest of the country.

Gujarat was a part of the erstwhile Mumbai state till 1960, when the people of Gujarat decided to have their own state on the basis of their distinct language and culture. This led to formation of the two new states of Gujarat and Maharashtra.

## PEOPLE

**Ethnicity** There are four groups of people who came to inhabit this land at different points of time and now form the majority here. Jats came from a place in Iran called Half (to be known latter as Jat) and they were herders by occupation. Around five hundred years ago they came to Kutch and Sind in search of new grazing pastures and settled there. Those who joined agriculture called themselves Garasia Jats and those who continued their ancestral occupation were known as Dhanetah Jats, and those who chose to study the Koran became Fakirani Jats.

The **Harijan** is the name given by Mahatma Gandhi to the Meghwals, who originally came from Marwar in Rajasthan. They are the masters of weaving cotton and wool as also embroidery and appliqué work.

The **Ahirs** came with Lord Krishna from Gokul in Uttar Pradesh. Most of the communities of Ahirs began with selling ghee and milk and are now spread all over the state.

The **Rabaris** are a nomadic tribe always wandering with their herds. The origin of this tribe has been traced back to Sind and Afghanistan though many aspects of this tribe still remain a puzzle for anthropologists. This tribe has been classified into three distinct groups, namely Vagadia, Dhabaria, and Kachhi. Women of this tribe engage themselves in making beautiful embroidery pieces while the men spend their time tending to their camels and sheep.

**Arts and Crafts** Crafts in Gujarat are a way of life, a process that transforms even the most mundane object of daily use into a thing of beauty. The skill of the Gujarati craftsperson-be it a weaver or a metalworker, a woman who embroiders for herself or a potter who creates pieces of art out of clay-is bound to leave one spellbound.

traditions here, from robust folk textiles to fine brocades. The most popular textile styles are Airakh prints of Kutch, Sodagiri of Paithanpuri, and Bandhej of Jamnagar. Patola silk sari from Patan, Pichwais of Lord Shrinath, Tanchoi or silk brocade from Surat, and tie and dye of Jamnagar are quite famous all over India and abroad too.

**Wood carving** is another important craft in Gujarat, evident in the many elaborately carved temples, havelis (mansions) and palaces as well as objects of daily and ritual use. **Utensils** are another area where the craftspersons of Gujarat have excelled. Gujarat is also famous for its **terracotta** work, especially votive terra-cotta figurines which one can find by the hundreds at small shrines built in forests, along roads, outside villages, on lonely hill-tops and under large trees, especially in south Gujarat. **Jewelry** is yet another fascinating craft in Gujarat. Each tribe or clan has different types of ornaments and each of them has retained the uniqueness of these ornaments.

**Music and Dance** Gujarat has a rich tradition of song, dance and drama. **Ras, Garba,** and **Bhavai** that are popular Gujarati folk dance forms, have their origin to the ancient period of Lord Krishna. The Ras dance is actually a form of Ras Leela in which different childhood antics of Krishna at Gokul and Vrindavan are enacted. Dandia Ras is performed during the Navratri Festival and men and women both join in a dance circle with small sticks known as dandia. Usha, the granddaughter of Lord Krishna, is considered as the first dancer of the form called Lasya or Garba. This dance is performed by women around a pot called Garbo, filled with water.

Gujarat has a great tradition of music and it has given the country some of the best talents in the field. **Tansen** and Baiju Bawra, greatest of all the musicians in India, were from this part of the country. Narsinh Mehta, the writer of the famous bhajan 'Vaishnava jan to tene kahiye', was also Gujarat's contribution to Indian music. Famous Indian ragas like Gujjar Tod, Bilaval, Khambhavati are all said to be named after Gujarat, Veraval, and Cambay.

**Fairs and Festivals** **Navratri**, literally nine nights, is celebrated for the 10 days preceding the festival of Dussehra-usually in October. The most eagerly awaited festival of the year, which celebrates harvest time, Navratri is an occasion when both rural and urban Gujaratis worship the nine incarnations of the Mother Goddess, Shakti, denoting cosmic energy.

Closely following **Dussehra** is the famous festival of lights, Diwali, which also has its genesis from the same epic-Ramayana. Interestingly, it is the only Hindu celebration which falls on Amavasya, a moon-less night in the lunar calendar.

Celebrated on January 14, the festival of Makar Sankranti heralds the kite-flying season and the International Kite Festival is held in Ahmedabad on that day every year.

Celebrated as the birthday of Lord Krishna, **Janmashtami** usually falls in the months of July/August and is celebrated with great fervor in Gujarat. Tableaux showing scenes from Lord Krishna's life are modeled and displayed in homes and temples. The most common of these depicts Krishna as a babe in the cradle.

The small hamlet of **Tarnetar**, about 75 kilometers from Rajkot, is the site for

one of Gujarat's most well known annual fairs, held here during the first week of Bhadrapad (September-October). This three day long fair is primarily a 'marriage mart', called swayamwar, where gaily attired young men, in their traditional attire, come to be chosen by village belles dressed in colorful finery.

Other festivals of Gujarat include the **Bhavnath fair, Dang Darbar, Saputara Summer Festival, Madhavrai fair, and Desert Festival.**

### Cuisine

Gujarati cuisine is a vegetarian gourmand's dream come true. It is a vegetarian wonder with complete nutrition derived from leafy vegetables prepared in innumerable variations and subtly flavored with spices. Simple, practical, down-to-earth and wholesome, Gujarati cuisine truly reflects the heart of the state.

Gujarati cuisine is primarily vegetarian, the main reason for which is the Jain and Buddhist influences. However, the goodness of millet, yogurt, buttermilk, coconut, groundnut, sesame seeds and jaggery makes sure that this non-meat cuisine is not lacking in proteins.

## INFORMATION

### ECONOMY Infrastructure

<b>Number of Phones</b>	: 7,02,303
<b>People Per Phone</b>	: 58.52
<b>Phone Services</b>	: DoT, HFC Bezeq
<b>Cellular Services</b>	: Birla Communications
<b>Domestic Airports</b>	: 10 (Ahmedabad, Bhavnagar, Bhuj, Jamnagar, Kandla, Keshod, Porbandar, Rajkot, Surat, Vadodara)
<b>International Airports</b>	: 1 (Ahmedabad)
<b>Cities linked</b>	: Bangalore, Calcutta, Delhi, Madras, Mumbai, and Vadodara
<b>Road length</b>	: 68,900 km
<b>National highway length</b>	: 1,572 km
<b>Ports</b>	: 41
<b>Industrial zones &amp; parks</b>	: 263

**Export processing zones** : 1

**State-identified priority sectors** : Ancillary Development, Electronics, Garments, Gems and Jewelry, Handlooms, Leather

### Industry

One of the most industrialized states in India, Gujarat attracts the cream of domestic and multinational investment flowing in the leading sectors of the economy.

The important minerals produced into the state are agate, bauxite, dolomite, fireclay, fluorite, fuller's earth, kaolin, lignite, limestone, chalk, calcareous sea sand, perlite, petroleum and natural gas, and silica sand.

### Agriculture

The state is the main producer of tobacco, cotton, and groundnut in the country. Gujarat also contributes inputs to industries like textiles, oil and soap.

### Incentives

1. Capital investment subsidy of between 20% and 35%, up to Rs 3 million, for tiny and SSI units
2. Exemption of 100% from fixed capital for 14 years for prestigious units of Category-I
3. Subsidy of 40% of fixed capital up to Rs 200,000, for entrepreneurs belonging to disadvantaged groups
4. Seven-year sales-tax relief of up to 100% of fixed capital for Category-I; 80% (5 years) for Category-II
5. Sales-tax deferment of up to 125% of fixed capital (9 years) for Category-I; 100% (7 years) for Category-II
6. Un availed portion of sales-tax incentives for new promoters reviving sick units
7. Deferment of 125% of fixed capital (15 years) for Category-I units; 100% (13 years) for others
8. Subsidy on 50% capital investment on social infrastructure projects
9. New scheme for promoting small and ancillary units on the basis of local resources and skills
10. Special incentives for purchase of environment-friendly plant and machinery
11. Exemption for 100% Export Oriented Units from purchase and sales taxes on capital goods procured within the state
12. Fast-track clearances for export-oriented projects

## TOURIST CENTERS

**Ahmedabad**, the city of **Ahmed Shah** (the medieval ruler of Gujarat), is known for its rich past and its association with Mahatma Gandhi. The city offers the traveler a unique style of architecture, which is a blend of Hindu and Islamic styles (Indo-Saracenic style of architecture). The monuments of Ahmedabad mainly date back to the 15th century. Ahmedabad has been known for its industry since medieval times. Presently it is famous for its textile mills and is often referred to as the 'Manchester of the East'.

**Gandhinagar**, situated about 25 kilometers north of Ahmedabad, is the newly built capital of Gujarat. Gandhinagar, named after Mahatma Gandhi, has been built on a grid pattern. The presence of abundant foliage here has earned it the title of the 'Green Capital'.

**Jamnagar** is situated in the Saurashtra region of Gujarat around 302 km from Ahmedabad. Major sites here include the Lakhota Fort, Kotha Bastion, Willington Crescent, Solarium, Jamsaheb's Palace, and Rozi and Bedi ports.

**Patan** lies further north of Jamnagar, founded during the 9th century. Originally known as Anhilwad Patan, the city is famous for its architectural wonders built during the rule of the Solanki dynasty. The Rani Udayamati vav (step well) and the Sahastralinga Lake are some of the tourist attractions here.

To the south of Ahmedabad lies the city of **Vadodara**, Gujarat's cultural capital, which has a long tradition of music, fine arts and education. The credit for this cultural awareness goes to Maharaja Sayaji Rao Gaikwad who made primary education mandatory for both boys and girls and encouraged artistes.

A favorite hill resort for the people of Vadodara, Pavagadh is believed by many to be the chunk of the Himalayas that was to be carried by Hanuman to Lanka.

Lying at the base of the Pavagadh hill is **Champaner**, the ancient capital of Sultan Mahmud Beghara. The Jama Masjid here is considered to be one of the finest in the State.

Further south of Vadodara lies the important trading center and port of ancient India called **Surat**. Today, Surat is an important center for textiles, zari (gold and silver threadwork) and diamond cutting and polishing.

**Saputara** -literally, the Abode of Serpents-is Gujarat's best-known hill resort, situated atop the second highest plateau in the Sahyadri range and in the midst of thick forests.

Founded by a Rajput chief in the 16th century, **Rajkot** had been the scene of many a clash between the Mughals and the British. Located in the center of the peninsula further northwest of Surat, the city is mainly known for the handicrafts it produces. Especially famous are its bead and mirror work, tie and dye (bandhani), silk embroidery and appliqué work.

To the southeast of Rajkot is the city of **Bhavnagar**, originally the capital of a state of the same name and ruled by the Suryavanshi Rajputs from Marwar. The prime attraction here is a Mahadev Temple.

To the west of Bhavnagar, situated at the base of the Girnar Hills is **Junagadh**. Its special claim to fame is the rock edict of Emperor Ashoka, dating back to 250 BC.

One of the biggest attractions about five kilometers from **Junagadh** is Uperkot. The fort atop the Uperkot hill, originally constructed by the Rajputs, has an ornamented triple gateway. Equally fascinating are the Buddhist caves and stupa all dating back to 100-700 AD.

Further west of Junagadh, situated along the coast is **Porbandar** -the birthplace of Mahatma Gandhi.

Known popularly as the gateway to Kutch, **Bhuj** is the most important town in this region. An old walled city, the gates of which (in olden times) were locked from dusk to dawn, it encloses within itself not only the palace but also the entire bazaar and a lake too.

Situated in Junagadh, near the port town of Veraval, **Somnath** is probably one of the best-known pilgrimage centers of Gujarat.

Yet another pilgrimage for which this state is known, is the holy town of **Dwarka** lying on the northern tip of the Saurashtra peninsula, at the confluence of the Gomti River and the Arabian Sea.

One of the most sacred pilgrimage centers for the Jain community, situated in Junagadh district, are the 16 marble temples atop the 1,118-meter high **Mount Girnar**.

The architectural grandeur of many of the 863 Jain temples at **Palitana** has few parallels. Located on the 600 meter high Shatrujaya Hill, this cluster of temples, dedicated to various Jain saints and deities, is yet another important place of pilgrimage on the Jain circuit.

## HOW TO REACH

### By Air

Gujarat has 10 domestic airports apart from an international airport at Ahmedabad. Most of the domestic airlines operate out of Ahmedabad connecting it to rest of the country.

### By Rail

Gujarat has a good railway network that not only connects the state internally but connects the state to other places in India also.

### By Road

Gujarat has a better road network than most of the other Indian states and they are in a fairly good condition. The total road length in the state is 68,900 km out of which 1,572 km is the share of National Highway, making the state easily accessible.

The Gujarat State Transport Corporation and private operators operate regular buses to all the major destinations of the state from most of the larger cities.

# Daman & Diu

## FACTS & FIGURES

**Population** : 102,000

**Languages** : Gujarati, Marathi, Hindi, English

**STD Code** : Daman 02638; Diu 02875

## THE EXOTIC TWINS

Known for their beaches and exotic liquors, these twin islands are a tourist's haven for escaping the cacophony of mundane life. Be it the rich historic past or the faint songs of the anglers, everything in Daman and Diu assist in creating a paradise for one in search of tranquility. The forts and churches of the past, and the pubs of today, combine to engender a strange ambience of nostalgia and experience.

## LOCATION AND CLIMATE

Daman and Diu lie on the edge of the southern borders of Gujarat, which is situated in western India. The northern side of the isolated island, Diu, facing Gujarat, is a tidal marsh and saltpans, while the southern coast alternates between limestone cliffs, rocky coves and sandy beaches. This wind beaten and somewhat arid island is filled with quarries built by the Portuguese rulers. The rocky and sandy interior reaches a maximum altitude of 29 meters above sea level, and palms and coconut trees strew this island. It is about 786 km from Daman and is bound by Chasi River on the north and the Arabian Sea on the other three sides. Its total area is about 33 sq. km. and is connected to the mainland by two bridges. Daman is an underdeveloped town, with a tropical flavor and its beaches are very welcoming. It was earlier called by the name of Damao and is bound by the Kolak River on the north. The northern part is called Little Daman or Nani Daman and is filled with restaurants while the southern part is called Moti Daman or Big Daman and is known for its ancient architecture. Both the islands enjoy typically maritime climate. The islands are always welcoming to tourists and throughout the year one can enjoy a pleasant atmosphere.

## THE PAST

Both these islands are associated with the Portuguese attempts of colonization and one can see its evidence in the rich architecture. These foreign invaders seized Daman in 1531 and formally took it over by 1559 from the last Gujarati king. Attempts to take over Diu had begun from 1531 but the Portuguese were successful only by 1535 taking advantage of the internal conflict of the king and the Mughal emperor, Humayun. After the peace treaty in 1539, the Portuguese took over full control of the island. Both the islands came under Indian rule by as late as 1961.

## PLACES TO VISIT

In Daman, one can visit the Fort of St. Jerome at Nani Daman, where there is a Jain temple as well. The 17th-century-old Se Cathedral and the Church of Our Lady of Rosary in Moti Daman are also worth a visit, and one can see the exquisite Portuguese carvings on the walls of these churches. Built in ancient Gothic style, these are a feast for the eyes. The stately Light House, the amusement park and the Gandhi Park at Daman jetty are also places of interest. Among the beaches, Devka beach is the most famous. Others include the Jampore beach, which is of interest to the swimmers and is very near the Gujarat border. The lake garden of Satya Nagar Udyan is famous for its fountains and promenades. In Diu, the Zampa Gateway is of particular interest. It has carvings of lions, angels and a priest and has a chapel inside with an inscription dating back to 1702. The artificial Zampa waterfall is also attractive. St. Paul's Church is the only active church till date. Nearby is the old St. Thomas's Church that has now been taken over by the authorities and converted into the Diu Museum. The Church of St. Francis of Assisi has been converted to a hospital. The Marwar memorial commemorates the victory over the Portuguese. The massive fort built in 1541 is now weathered and weak. It is of major tourist interest. Other places include Jallandhar and Gangeshwar temple. The Nagoa beach is the most famous in Diu. Gomptimata, Chakratirth and the beautiful Sunset Point are the other famous beaches. The Jama Masjid is also famous.

## SITES NEARBY

The 1000-feet-high hill resort of Saputara near Daman is quite famous. The name means the Abode of Serpents and one can see a holy serpent image on the banks of the river Sarpaganga. To visit Mahal Bardipara Forest Wildlife Sanctuary (60 km) and the Gira Waterfalls (52 km) Saputara is a popular base. Fudam, near Diu town, has a big church dedicated to Our Lady of Remedies. At the western frontiers of the island, Vanakbara has a Church to Our Lady of Mercy, a fort, a lighthouse, and a fishing fleet.

## HOW TO REACH

The tourist office in Daman (Tel. No.: 55104) is near the bus stand. Daman is provided with an airport and is connected to Baroda and Mumbai. Only traveler's cheques are exchangeable. The main railhead is Vapi, which is 10 km away. Vapi is about 170 km from Mumbai and 90 km from Surat. Buses and auto rickshaws are available to Daman from Vapi. For Diu, there are regular air services of Gujarat State Airlines that fly to Mumbai. The nearest railhead is Delwada, 8 km from Diu. It is located between Una and Ghoghla. For road services, Una is the access point and there are direct buses from Bhavnagar (180 km), Veraval (90 km), and Talaja. There is a ferry service from Vanakbara to Kotla village, from where one can get buses to Kodinar. Auto and cycle rickshaws are available to commute within the city. Cycling is the most common mode of local transport. The tourist office is on Bunder Road (Tel. No.: 52212). One can exchange money at slightly lower rates in the banks.



## WHERE TO STAY AND WHAT TO EAT

In Daman, most of the cheap hotels are located on Seaface Road. There are many decent places to stay at the beach sites. In February, Daman is known for its papri, which are boiled, sweet and salty peas. Crab and lobsters are delicacies in October. The streets of Daman have bars that sell beer, Scotch whisky and feni. Tody is also found in abundance. In Diu, rates of hotels are high in the peak season of October to June. Most restaurants have their own eating joints. Food in Diu can be very cheap to expensive. Good seafood and Chinese dishes deserve special mention. With some luck, one can also taste Parsee food here.

## LOOKOUT FOR

One is forbidden to take alcohol out of Daman into Gujarat unless there is a permit. The local police authorities are quite strict about the implementation of prohibition.

