

*Extension Bulletin*

## ***Women Fish-preneur Promotion Programme***



ICAR-Central Institute of Fisheries Technology (CIFT)  
Veraval Research Centre  
Matsyabhavan, Bhidia, Veraval-362 269, Gujarat



2018

*Extension Bulletin*

***Women Fish-preneur Promotion Programme***

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**ICAR-Central Institute of Fisheries Technology (CIFT)**

**Veraval Research Centre  
Matsyabhavan, Bhidia, Veraval-362 269, Gujarat**



**2018**





## PROJECT SUMMARY

Project Title:	Livelihood enhancement of ' <b>Sidi tribal women and Kharwa fisherwomen</b> ' of Veraval in Gujarat through the implementation of improved fish post-harvest technologies
Catalyzed and Supported by:	Science for Equity Empowerment and Development Division (SEED) Department of Science & Technology (DST) Ministry of Science and Technology Government of India
Name of the Institution & Address:	ICAR-Central Institute of Fisheries Technology (CIFT) Veraval Research Centre, Matsyabhavan, Bhidia, Veraval, Gujarat-362 269
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Duration	Three years
Date of commencement	7 <sup>th</sup> March, 2017
Expected date of Completion	6 <sup>th</sup> March, 2020

## BRIEF DESCRIPTION OF THE PROJECT

The present project is aimed to transfer the methods of 'hygienic ways of fish pre-processing, renewable energy based hygienic drying using hybrid solar dryer designed by ICAR-CIFT, improved packaging and labelling of processed fish and preparation of value-added products from fishes' to women of two backward communities, 'the Sidi tribal community and Kharwa fishermen community' of Veraval region in Gujarat for their livelihood enhancement. 'Kharwas', the fishermen community, form a sizable part of the local population in the coastal regions of Gujarat like Veraval. 'Sidis', or 'Habshis' is a unique tribal group with African ancestry, who have been transported to Gujarat as slaves in an easterly slave trade, controlled mainly by Arabs. The Sidis are considered to be the most backward class in Gujarat and majority of them are living below poverty line. It is envisaged that the project will create impact in women empowerment, income generation, livelihood security, self employability and socio cultural changes among coastal fishermen community and Sidi tribal community.

## OBJECTIVES

- ♦ Imparting hands on training on the 'renewable energy based hygienic fish drying using hybrid solar dryer designed by ICAR-CIFT' to the tribal and fisher women groups of Veraval, Gujarat
- ♦ Establishment of hybrid solar fish drier unit designed by ICAR-CIFT in the selected area for the target group
- ♦ Providing training on 'improved packaging and labelling methods' and 'hygienic handling of fish, sanitation and pre-processing activities' for producing better quality fish
- ♦ Providing training on 'preparation of diversified value added fishery products' to expand the market
- ♦ Establishment of vacuum packing unit & value-added products preparation unit for the benefit of target group
- ♦ Socio-economic upliftment & empowerment of women of beneficiary communities by giving expertise in low cost high value fish post harvest technologies.

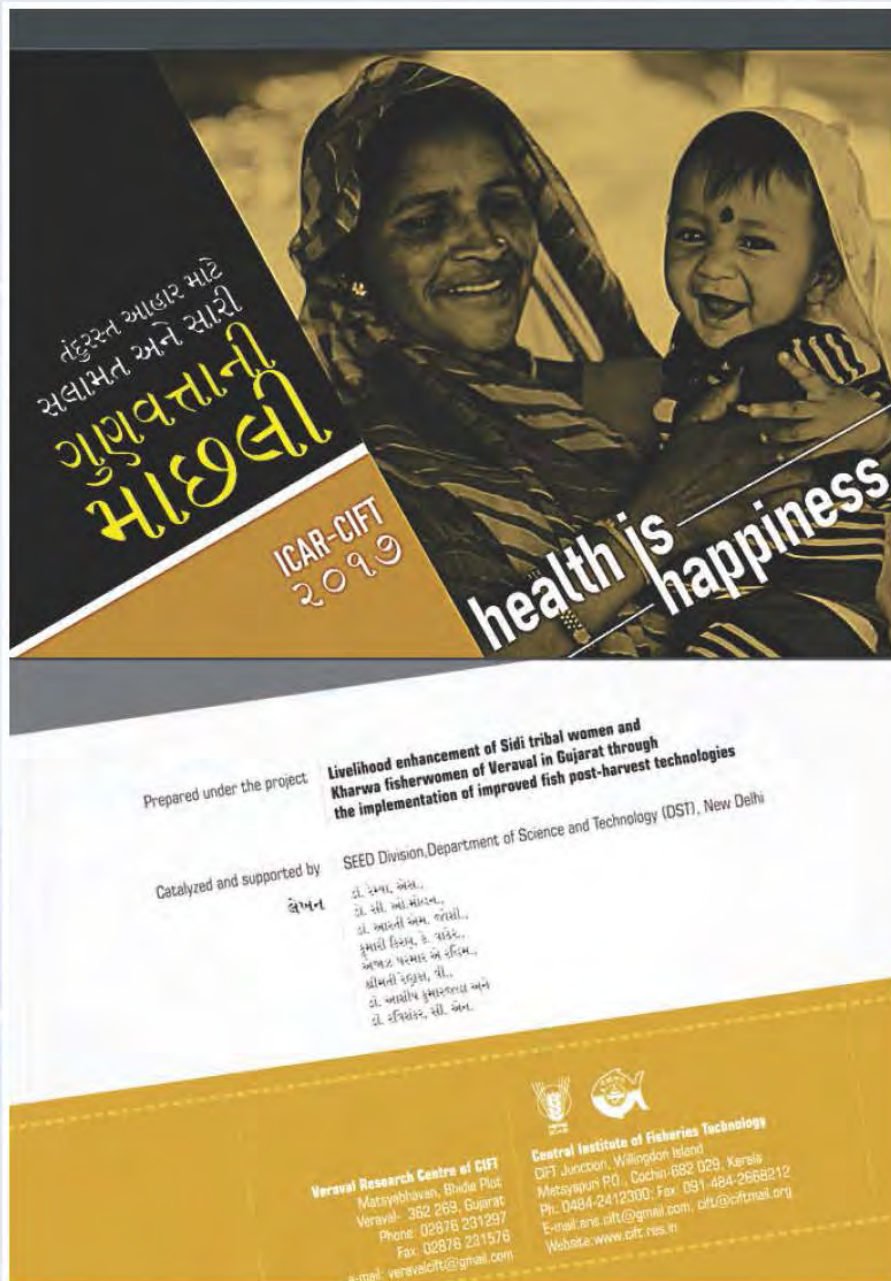


## TRAINING CURRICULUM

The Central Institute of Fisheries Technology is the only national institute under the Indian Council of Agricultural Research that is dedicated to research and extension activities in fisheries harvest and post harvest sectors. There are various improved fish pre-processing, processing and packaging methods available with ICAR-CIFT.

- 1. Renewable energy based fish processing systems such as hybrid solar fish dryers:** CIFT has introduced a hybrid solar drying system for hygienic production of dry fish by using environment friendly and freely available renewable solar energy. Continuous drying of fish is possible in this system with the help of LPG, biogas, biomass or electricity back up, where the fish can be dried in unfavourable weather conditions without spoilage and maintaining its nutritional values.
- 2. Improved packing and labelling methods of dried fish products:** Packaging is an important aspect of any food to protect it from external environment as well as to enhance its shelf life and marketability. Many studies have been conducted and published by the scientists in the packaging section of the Fish processing division of ICAR-CIFT on the effect of improved packaging techniques like vacuum packaging in extending the shelf life and improving the quality of fish and fish products.
- 3. Value addition:** Processing adds value to the harvested resource. It has been one of the strengths of the Institute and various new products have been standardized that can be taken up by entrepreneurs at various scales of production.
- 4. Protocols for good hygienic practices for fish pre-processing:** The production of consistently high quality seafood product requires implementation of a thorough cleaning and sanitizing routine that is aimed at reducing the amount of bacteria entering seafood before, during and after process. The insufficient technical know-how and facilities is a major drawback in Veraval. So the fisherwomen engaged in pre-processing activities should be taught about the pre-processing protocols for production of safe and quality fish.

Brochures/leaflets were prepared in local language (Gujarati) and in English regarding safe and quality fish production, renewable energy based improved hygienic fish drying using solar dryer, vacuum packaging, packaging and labeling of dried fish products and preparation of different value added products.



**Plate 1:** Brochure on 'Safe and quality fish for healthy eating' in Gujarati



### CAPACITY BUILDING/SKILL DEVELOPMENT / TRAINING PROGRAMMES

Sl. No.	Title	Duration	Date	Beneficiary
1.	Workshop on development of entrepreneurial skill to empower women from backward communities	1 day	14/11/2017	Sidi Tribal women
2.	Workshop on Safe and quality fish production	1 day	15/11/2017	Sidi Tribal women
3.	Workshop on development of entrepreneurial skill to empower women from backward communities	1 day	17/01/2018	Kharwa Fisherwomen
4.	Workshop on Safe and quality fish production	1 day	18/01/2018	Kharwa Fisherwomen
5.	Training/Skill development programme on renewable energy based hygienic fish drying methods	2 days	27/02/2018 - 28/02/2018	Sidi Tribal women
6.	Training/Capacity building programme on improved packaging and labelling methods for producing better quality fish	1 day	08/03/2018	Kharwa Fisherwomen
7.	Training on improved packaging and labelling methods for producing better quality fish	1 day	27/03/2018	Sidi Tribal women





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Veraval Research Centre, Bhidia-362 269, Veraval, Gujarat



**Workshops on**  
**'Development of entrepreneurial skill to empower women from backward communities'**  
**&**  
**'Safe and quality fish production'**



**From 14<sup>th</sup> to 15<sup>th</sup> November, 2017**

**Catalyzed and supported by SEED Division,  
Department of Science and Technology (DST), New Delhi**

**Plate 2:** Banner of workshops on 'Development of entrepreneurial skill to empower women from backward communities' & 'Safe and quality fish production'



**Plate 3:** Dr. S. M. Zofair talking on 'Women entrepreneurship and possibilities in the fish processing sector'



**Plate 4:** Release of brochure on 'Safe and quality fish for healthy eating'



**Plate 5:** Trainees with Faculty and Guests





**Plate 6:** Demonstration of hygienic handling of fish



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Veraval Research Centre, Bhidia-362 269, Veraval, Gujarat



### ***Workshops on***

***'Development of entrepreneurial skill to empower women from backward communities' and 'Safe and quality fish production'***



**FROM 17<sup>TH</sup> TO 18<sup>TH</sup> JANUARY, 2018**

**Catalyzed and supported by SEED Division**

**Department of Science and Technology, New Delhi**

**Plate 7:** Banner of workshops on 'Development of entrepreneurial skill to empower women from backward communities' & 'Safe and quality fish production'



**Plate 8:** Practical session in progress



**Plate 9:** Demonstration of preparation of value added fishery products.





**Plate 10:** Shri. Jagadish Bhai Fofandi, President, Veraval-Patan Joint Municipality talking on 'Development of entrepreneurial skill in the area of fish processing for women empowerment'



**Plate 11:** Shri. Tulsi Bhai Gohel, President, Boat Owner's Association distributing certificates to the trainees

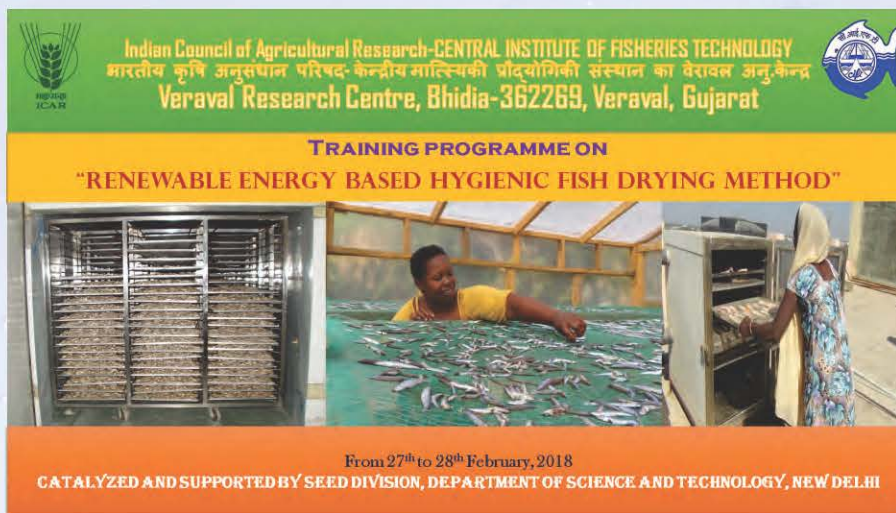


**Plate 12:** Shri. Piyush Bhai Fofandi, President, Seafood Exporters Association of India, Gujarat Chapter talking to the participants during the workshops



**Plate 13:** Dr. Ashish Kumar Jha, SIC, Veraval RC of ICAR-CIFT talking on nutritional significance of fish





**Plate 14:** Banner of the training programme on “Renewable energy based hygienic fish drying method”



**Plate 15:** Shri. Ram Adhar Guptaji, Deputy Director, MPEDA talking about the significance of renewable energy sources during the inaugural ceremony



**Plate 16:** Practical session in progress



**Plate 17:** Drying in ICAR-CIFT designed hybrid Solar Dryer





**Plate 18:** Preparation of Value added fishery products



**Plate 19:** Certificate distribution to the trainees by Shri. Lakham Bhai Bhensla, Patel, Kharwa Samaj, Veraval.



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Veraval Research Centre, Bhidia-362 269, Veraval, Gujarat



***Training Programme on***  
***'Improved packaging and labelling methods for producing better quality fish'***



**Catalyzed and supported by SEED Division,  
Department of Science and Technology (DST), New Delhi**

**Date: 8<sup>th</sup> March, 2018**

**Venue: Veraval RC of ICAR-CIFT**

**Plate 20:** Banner of training programme on 'Improved packaging and labelling methods for producing better quality fish'



**Plate 21:** Dr. Remya. S explaining about the significance of packaging and labelling





**Plate 22:** Trainees with faculty and guests



**Plate 23:** Value added fishery products prepared by the trainees.



**Plate 24:** Certificate distribution to the trainees by Dr. Nimisha Makhanasa, Chief Guest of the women's day function



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 Veraval Research Centre, Bhidia-362 269, Veraval, Gujarat



### Training Programme on 'Improved Packaging and labelling methods for producing better quality fish'



**Catalyzed and supported by SEED Division,  
 Department of Science and Technology (DST), New Delhi**

Date: 27<sup>th</sup> March, 2018      Venue: Veraval RC of ICAR-CIFT

**Plate 25:** Banner of training programme on 'Improved packaging and labelling methods for producing better quality fish'





**Plate 26:** Dr. Remya. S explaining about improved packaging and labelling methods for producing better quality fish



**Plate 27:** Dr. Ashish Kumar Jha talking about new packaging methods



**Plate 28:** Fish pickle prepared by trainees





**Plate 29:** Dr. Divu. D, SIC, VRC of ICAR-CMFRI distributing certificates to the trainees



**Plate 30:** Trainees with faculty and Guests

### **Setting up of solar energy based fish drying unit, value added products preparation unit and packaging unit**

There is a huge demand for dry fish in the domestic and foreign markets. Gujarat is already famous for fish drying activities. Fishes dried in different parts of Gujarat are sold in the local markets, other domestic markets like north-eastern Indian states and foreign markets. So the fishes dried by the women groups using solar dryers and packed by vacuum packaging machine will definitely find a place in the market as branded products meeting approved quality standards. The increased awareness of consumers regarding the usefulness of fish as a source of nutrition and the changing demands for newer and convenient products that are easy to cook or consume will help to find domestic market for value added fish products like fish pickle in Gujarat and other parts of the country. Hence, after providing training, Solar dryer and Vacuum packaging machine was intended to provide to the groups for starting a hygienic dry fish unit. They will be also supported for constructing a fish value added products preparation unit. The same can be used as a demonstration unit of improved processing technologies and a source of employment for the local people.



## PART II:

### TECHNICAL DETAILS OF THE PROJECT

#### Introduction

Gujarat is one of the most important maritime states of the country owing to its extensive marine fishery resources. Among the nine maritime states in India, Gujarat stands first in marine fish production and seafood export in terms of quantity. Gujarat has a coastline of 1600 km which is the longest among all the maritime states and accounts for nearly 20 % of coastline of India. It has a broad continental shelf area of 1, 64,183 sq. km forming nearly 33 % of that of India and an Exclusive Economic Zone of 2.14 sq. Km, which is nearly 11 % of that of the country. Fisheries sector of Gujarat contributes 1.69 % to the GDP of the Gujarat state and the sector employs over 4, 00,000 people directly and indirectly.

Veraval is one of the major fishing harbours in India. It enjoys a long coastline, lined with beaches. Fisheries have always been the main industries in Veraval and are dominated by the Kharwas (The fisher folk). The fishing is done both on traditional boats and trawlers. Veraval also has a large boat making industry. Veraval is home to a large number of fish processing factories (Around 80), which export prime quality seafood to USA, Japan, China, SE Asian, Gulf and EU Countries. The seafood-industry, which started through government initiative, is in its prime now and many importers are attracted towards Veraval from around the globe. Regional research centres of CIFT and CMFRI situated at Veraval have done yeoman Service in the development of fisheries sector in Gujarat.

#### THE 'SIDI' TRIBES

'Sidis', or 'Habshis' is a unique tribal group with African ancestry and lives in South Asia. According to the latest census, their total population size in India is about 0.25 million, with Gujarat having the majority of them. It is known that 'Sidis' have been in the region of Gujarat for many hundreds of years, with new immigrants arriving from diverse African locations over the passage of time. The majority are thought to have been transported to India as slaves in an easterly slave trade, controlled mainly by Arabs, that long predated the better known Atlantic slave trade existing for centuries before European powers even knew to navigate the Indian Ocean and continued even into the early twentieth century. The Sidis of six



districts in Rajkot Division of Saurashtra have been designated as Scheduled Tribe (ST) since 1956 and along with four other tribal groups, the Sidis of Saurashtra have since 1982 been further accorded the status of 'Primitive' group.

Majority of Sidis of Gujarat live in six districts and they are concentrated especially in the villages of Talala taluka extending upto Veraval of Junagadh district. There are around 50 households in Veraval, with an average family size of 5. The Sidis are considered to be one of the most backward classes in Gujarat and majority of them are living below poverty line. Farm-based activities constitute the main source of livelihood for the inhabitants of the Sidi population. The food insecurity and malnutrition is a common phenomenon in the Sidi tribal areas. As the single source of livelihood, traditional farm incomes are not enough to meet even subsistence needs. As such, women of poor tribal families in Gujarat are forced to combine traditional cultivation with the collection of minor forest produce, maintaining small livestock and migration to urban areas for wage labour during the lean season. They are not involved in the fisheries related post harvest processes because of lack of knowledge and the fisheries activities in the Veraval region are dominated by fishermen communities like Kharwas. There is a need to raise awareness and skills amongst the tribal women about hygienic fish processing activities and production of value added fish products as a source of income. With adequate technology transfer and proper support, it is possible for the tribal women to generate cash income quickly and with less risk.

#### **THE KHARWA FISHING COMMUNITY**

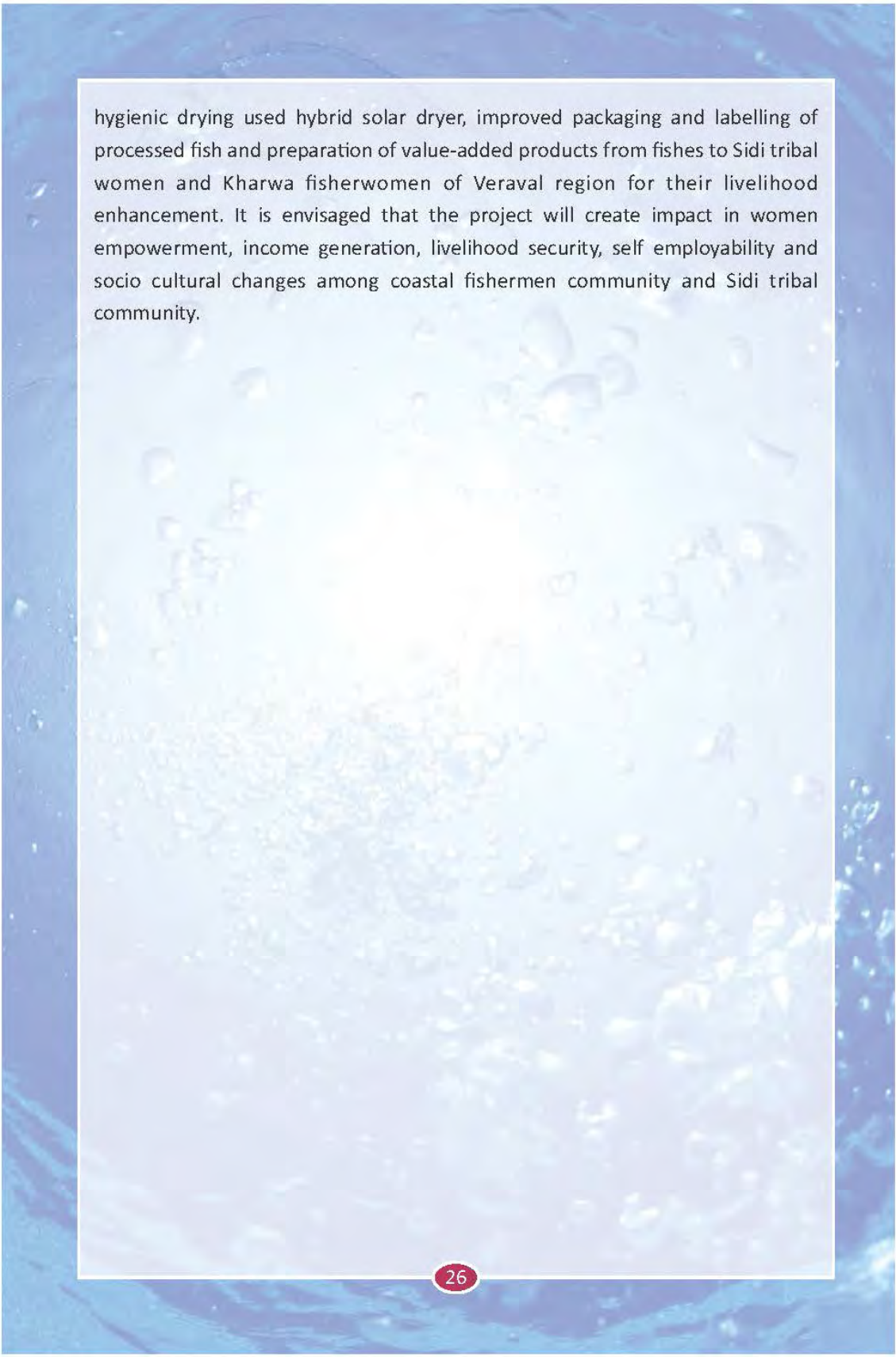
In Veraval, the Kharwas form a sizable part of the local population. The fish harvesting and post harvesting operations are done mainly by the Kharwa fishing community in Veraval. Veraval old light house is one of the coastal fishing villages in Veraval. According to a survey conducted by Central Marine Fisheries Research Institute (CMFRI, 2010), there are around 3074 Kharwa fishermen families in this village with an average family size of 4.86. The Female: Male sex ratio is 907 females per 1000 males and the total number of adult female is 4839. The educational status of the women in the Kharwa community is very poor. Almost all of them are involved in fish pre-processing and processing activities mainly peeling and curing, fish marketing and net making/repairing.



### PRESENT PROJECT

Important commercial varieties of fishes are caught in large quantities in the fishing areas of Gujarat. But, the Sidi tribal women are still depending on agricultural related activities for their livelihood due to lack of awareness and proper guidance. With adequate technological support and trainings, they can venture into fish post harvest technologies for earning a better income with less risk. The Kharwa fisherwomen, belonging to one of the backward classes in Gujarat, are already involved in fresh fish selling in the local market, peeling and processing activities such as fish drying. But, the fishes are pre-processed, processed and packed in poor hygienic conditions and ultimately will be sold at a very low price in the market. For instance, fisher women selling fresh fish cannot store fish even for a day due lack of cold storage, which forces them to sell fish for lower price towards end of the day. Fisher women engaged in drying depend on the traditional dry fish processing in unhygienic conditions till today. This will have an impact on the quality of fish processing and contributes to wastage. There are other fish related micro enterprises such as value added products like fish pickle making, which has not been explored to its full potential. Although the demand for such kind of products is huge, women did not emphasise much on this venture due to lack of skills and marketing opportunities.

Fish is a highly perishable commodity which requires proper handling, processing and distribution, if it is to be utilized in a cost effective and efficient way. Improvement in the fish handling practices and proper preservation will enable to tackle the post harvest losses coupled with enhanced value realization. Technological interventions are essential for better utilization of fishery resources for better profitability. There are various improved fish pre-processing, processing and packaging methods available with ICAR-CIFT. However, due to lack of awareness and finance, fisher women never exploited these techniques. So, the technologies developed by the fisheries research institutes should be transferred to the end users through training programmes, demonstration of advanced technologies, workshops, seminars etc. The training will not only teach these women better and more profitable ways to process fish but it will also give them increased confidence and self-esteem. So, the present project is aimed to transfer the methods of hygienic ways of fish pre- processing, renewable energy based



hygienic drying used hybrid solar dryer, improved packaging and labelling of processed fish and preparation of value-added products from fishes to Sidi tribal women and Kharwa fisherwomen of Veraval region for their livelihood enhancement. It is envisaged that the project will create impact in women empowerment, income generation, livelihood security, self employability and socio cultural changes among coastal fishermen community and Sidi tribal community.





