

ITEMS	SPECIFICATIONS
Dryer dimension (m)	4 × 3 × 2
Floor area (m <sup>2</sup> )	12
No: of trays	12
Tray material	Wood and iron mesh
Dryer fabrication material	UV stabilized transparent polythene sheet (200μ), black absorber sheet, CPVC and GI rod.
Inlet and exhaust fans	0.5 hp – 3 Nos.
Loading capacity (kg)	50
Approximate cost	Rs.67,000/- + GST
Purpose	Bulk drying of fish and fishery by-products

# LOW COST, ENERGY EFFICIENT AND ECO-FRIENDLY SOLAR TUNNEL DRYER FOR BULK DRYING OF FISH



## PUBLISHED BY

Dr. Ravishankar C.N., Director, ICAR-CIFT

## TECHNOLOGY DEVELOPED BY

Dr. Manoj P. Samuel, Principal Scientist and Head, Engineering Division

Dr. Murali S., Scientist, Engineering Division

Dr. Aniesrani Delfiya D.S., Scientist, Engineering Division

Smt. Alfiya P.V., Scientist, Engineering Division

Shri. Gopakumar G., Technical Officer

## For more information, contact :

The Director

ICAR - Central Institute of Fisheries Technology

CIFT Junction, Willindon Island, Matsyapuri P. O., Kochi – 682 029, Kerala

Ph: +91 484 2412300; Fax: +91 484 2668212

E-mail: aris.cift@gmail.com; cift@ciftmail.org

Website: www.cift.res.in



**ICAR - CENTRAL INSTITUTE OF FISHERIES TECHNOLOGY**

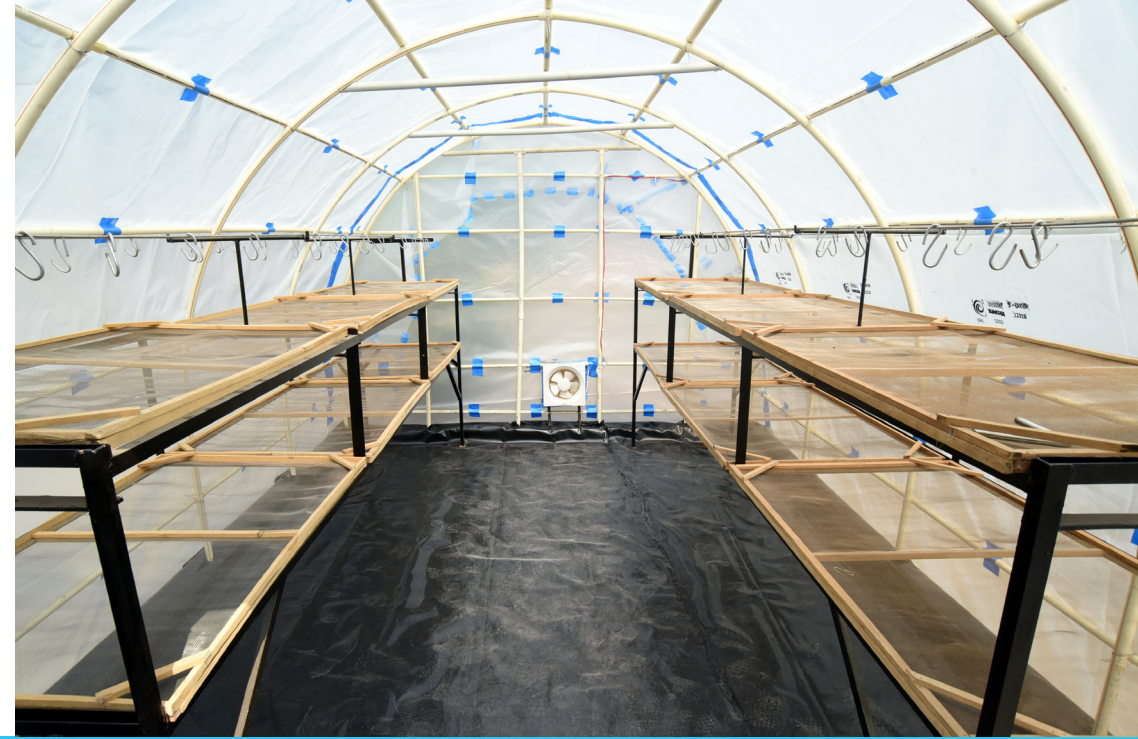
Matsyapuri P.O., Willindon Island, Cochin – 682029, Kerala, India

## SOLAR TUNNEL DRYER

Fisherfolk in India catch fish as major aquatic product to sell in the local market, and in case of over catch tremendous losses occur. Alternatively, fisherman could convert the excess catch into a value-added product *i.e.* dried fish. In India, 20 - 30% total catch of fish is dried for export and local consumption.

Drying preserves fish from decay by removal of moisture from fish, thereby arresting the growth of bacteria, action of enzymes, and chemical oxidation of the fat. Open air sun drying is the traditional method employed by fisherfolks in India to dry fish and fishery products, but it often results in inferior quality of product due to its dependence on weather conditions and vulnerability to the attack of dust, rains, insects, pests, and microorganisms. Also, it requires longer drying time.

ICAR-Central Institute of Fisheries Technology (CIFT), Cochin, has already developed low cost, energy efficient and eco-friendly dryers like Solar tray dryer, Solar cabinet dryer, Infrared dryer etc for uniform and hygienic drying of fishes. These dryers are also suitable for drying of agricultural products like fruits, vegetables, spices and condiments.



ICAR-CIFT developed a low cost, energy efficient solar tunnel dryer for bulk drying of fish and fishery products. This dryer can be used by fishermen or small-scale fish processing units for bulk drying during seasonal higher catch/excess landing of fish. The capacity of the solar tunnel dryer is 50 kg with the floor area of 12 m<sup>2</sup>. The materials of construction are UV stabilized transparent polythene sheet for roof cover, black absorber sheet for floor, supporting frames of CPVC and GI rod.

Three ventilator fans of 0.5 hp were provided for air inlet and moisture removal. The trays with tray holder were placed inside the dryer for spreading and hooking the fishes for drying. This tent dryer was designed as a stand-alone system as it does not require any external power source/ electricity. The fans were operated by means of a solar PV panel fitted on roof top of the dryer and associated battery setup. It is also of affordable cost (Rs. 67,000 + GST) and suitable to the Indian fisherfolks.

