

# Handbook on Fisheries and Aquaculture Technology

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The fishery sector is important from Indian economy view point as it contributes a source of income to a number of fishermen and has huge export potential. The systems and technology used in aquaculture has developed rapidly in the last fifty years. They vary from very simple facilities like family ponds for domestic consumption in tropical countries to high technology systems like intensive closed systems for export production. Much of the technology used in aquaculture is relatively simple, often based on small modifications that improve the growth and survival rates of the target species. Nowadays, the fish and fisheries industry is one of the fastest growing international commodity markets globally. Guaranteeing an adequate supply to this international market requires hundreds of thousands of fishing vessels and fish farms, as well as tens of thousands of fish processing workers, wholesalers and retailers in countries spread all over the world. The fishery sector thus generates employment and income for millions of people and in one of the major fields to venture. A wide range of aspects of fresh water aquaculture such as selection of species of fish and shellfish, construction and preparation of various types of fish ponds, control of aquatic weeds and predators, production of seed fish and their transportation, fish nutrition and fish diseases and their control pertaining to composite fish culture, air breathing fish culture etc. have been dealt with a length for easy adoption.

The major contents of the book are classification of fishes, general characters of fishes, techniques in fish identification, cold water fisheries of India, physical and chemical properties of fishery water, chemical constituents of fish, economic importance of fishes, fish in relation to human health, construction of fish farms, etc.

In this book you can find all the basic information required on the fundamental aspects of the fisheries and aquaculture technology with detailed information of their applications a wide variety of industrial processes etc. The book is very useful for research scholars, technocrats, institutional libraries and entrepreneurs who want to enter into the field of aquaculture technology.

## 1. Fish, Fisheries and Ichthyology

Fish

Fisheries

History of Ichthyology

## 2. Classification of Fishes

General Characters of Fishes

Major Groups of Living Fishes

Characterization of Living Fish Groups

Class Agnatha (Lampreys and Hagfishes)  
Subclass Cyclostomata  
Class Chondrichthycs (Sharks, Rays, Skates,  
and Chimaeras).  
Subclass Elasmobranchii (Sharks, Rays, Skates)  
Subclass Holocephali (Chimaeras).  
Class Osteichthyes (Bony Fishes)  
Subclass Sarcopterygii (Lungfishes and Lobefins)  
Subclass Actinopterygii (Higher Bony Fishes)  
Major groups of Extinct Fishes  
Class Cephalaspides (Osteostraci)  
Class Pteraspides (Heterostraci)  
Class Palaeospondyli (Cycliaae)  
Class Pterichthyes (Antiarchi)  
Class Coccostei (Arthrodira)  
Class Acanthodii

Teleostei

Division I. TAENIOPEDIA (Ribbon young)

Division II. ARCHAEOPHYLACES

(Ancient watchmen)

Division III. EUTELEOSTEI (Intensive Teleostei)

3. Fish Identification

Techniques in fish identification

Morphometric characters

Meristic characters

Descriptive characters

Key to the Identification of Fishes

Fisheries of India

5. Cold Water Fisheries of India

Trout

Mirror carp

The Tench (*Tinca tinca*)

Golden carp (*Carassius carassius*)

Mahseer

Barilius

Labeo

Garra

*Glyptothorax pectinopterus*

Programme of Fisheries

Development of fish in the Hills of

Uttar Pradesh

Composite culture

New Directions

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Lobster Fishery

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Composition of fish oil

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Liver-oil industry in India

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Flesh of Fishes contains

Mineral constituents

Carbohydrates

Enzymes

Pigments

Vitamins

Phospholipids

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By-products of fishes

Oils

Fish Protein

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Fish glue

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Controllers of diseases

Scavengers

As baits

An object of sports and entertainment

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Fish in Relation to Human Health

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Selection of Plants

Selection of Fish

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Adaptations in fishes

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Changes in external form and size of fish

Scale covering etc.

Paired fins (skeleton and musculature connected with them)

Caudal fin and its peduncle

Mouth, jaws and barbels

Eyes

Gill opening etc.

Air-Bladder

Skin and other modifications

Examples of Indian hill stream fishes

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Siluroids

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Basis of production :

Special adaptations of animals

planktonic life :

The relationship of zooplanktons to the environment:

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Coelenterata

Ctenophora

Nemertinea

Nematoda

Rotifera

Polyzoa

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Annelida

Mollusca

Crustacea

Echinodermata

Protochordates

Fishes

Amphibians

Characteristic features of zooplankton

as stated before are

Special adaptations of animals to

planktonic existence

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Fishing Vessels

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East Coast

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Large fishing boats

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Gear used in rivers

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Culture Practice

Yield and input rates

Costs and returns

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Carragheen Chocolate Blancmange

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Fish Farmers Development Agencies (FFDAs)  
Significance of Fisheries  
FreshWater Culture Fishery  
Need for the Study  
Objectives

## About NIIR

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