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*Aquaculture Facilities and Equipment is a practical resource on the technical aspects needed for experts in the field to understand a high-performance aquaculture facility, its design and form, and the materials and systems used within the facility. The book is written at a level suitable for both field experts and students alike. It includes topics such as pond construction machinery, pumps for aquaculture, aeration for aquaculture, fish feeders, filtration systems in aquaculture, hatchery, raceways and tanks, and cage and pen culture. This book is based on 30 years of research that is presented as a useful reference to enhance efficient aquaculture production. It will be very helpful for experts working in related fields of fishery development and for those teaching fishery science and engineering courses. Includes numerical equations for solving practical problems within an aquacultural facility Combines knowledge of aquaculture science that is supported*

by relevant engineering inputs that boost production Presents information on different types of traditional breeding, including hapa breeding, glass jar incubators, bundh breeding, induced carp breeding, hypophysation, and GnRH based inducing agents

Climate change has emerged as the most pressing global challenge of the 21st century and it has a dramatic effect on natural ecosystems and environment. Intelligent mitigation strategies to minimise climate change impacts can result in advanced, novel technologies; healthier aquatic ecosystems and higher food security and well-being for humans. The book includes 45 Chapters by expert authors, covering (i) Hydrometeorology and hydrology, (ii) Natural hazards and disaster risk management, (iii) Aquaculture, (iv) Changing biodiversity scenarios, (v) Capture fisheries, (vi) Food and nutritional insecurity, (vii) Climate change and socio-economic scenarios, and allied areas. It is hoped that this volume will further our understanding and research achievements in the field of climate change and its consequences

and facilitate the synthesis of information on how climate-related changes will influence oceans, marine and inland ecosystems, hydrological cycles, fisheries and aquaculture and coastal communities and will be immensely useful to planners, scientists, conservationists, environmentalists, academicians, students and all those who are directly or indirectly involved in the study of impact of climate change and mitigation measures Note: T& F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

Biotechnology, particularly eco-friendly enzyme technologies, has immense potential for the augmentation of diverse food products utilizing vast biodiversity, resolving environmental problems owing to waste disposal from food and beverage industries. In addition to introducing the basic concepts and fundamental principles of enzymes, *Enzymes in Foo*

*Food Borne Pathogens and Antibiotic Resistance*

*Aquacultural Facilities and Equipment*

*Ecology and Environment*

*Aquatic Health and Aquaculture*

*Improved fisheries productivity and management in tropical reservoirs*

In all the developing countries, the vast natural resource have great potentials for the production of fish. Natural water resource are categorized on the basis of altitude, temperature and salinity. The different fish species have adopted as per water ecosystem. Out of identified about 22000 fish species, only 10% belongs to freshwater. Only 107 species have been found suitable as culturable. Hence, major chunk of fish are not cultured by man but used by him as food or other uses. It is therefore, the natural fisheries is very important for human being and proper management and legislation are needed to have the sustainable production. The text of the book is written in simple language so as understandable by scientists, extension workers, students and farmers. References and literature for further reading have been given in the end. Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

The weak property rights regime governing the world's marine resources as well as the wide-spread large scale subsidization of the fisheries industry has led to serious depletion of global fish stocks. Against this backdrop, taking cognizance of developing country goals and concerns, the Fourth Ministerial Conference of the WTO held in Doha in 2001 mandated that negotiations over fisheries subsidies, formerly subject to the disciplines of the Agreement on Subsidies and Countervailing Measures, be

completed by 2005. In view of this development, a country like India with its vast and versatile fisheries resources has to take stock of the state of its fisheries sector, and develop a strategic response to the global debate on fisheries subsidies. This book aims to initiate that process. It begins by providing an overview of the current state of subsidization of the fisheries sector, both domestic and international, under various alternate definitions of fisheries subsidies. It then focuses on the domestic scenario, highlighting the Indian experience with fisheries subsidies and property rights regimes across both inland and marine sectors via the case method, and investigates the necessity and sufficiency of subsidies vis-à-vis an appropriate property rights framework in developing the domestic fisheries sector and resource base in a sustainable manner. Attention is then turned to the international scenario, with a review of selected international case studies which can inform domestic subsidy and property rights issues. This is followed by an analysis of the country submissions of the various major fishing nations in order to identify India's natural allies and competitors in international negotiations. The concluding chapter brings the pieces together. It first outlines a program of reforms to rectify the deficiencies in the existing domestic property rights and fisheries subsidy regimes, on the basis of intensive interactions with all sectoral stakeholders. Subsequently, it suggests negotiating strategies for India in forthcoming WTO meetings. An epilogue sums up recent developments and issues. This publication covering latest technologies, issues and state of the art related to Electronic Resources Management will be of immense value to practicing

**librarians, students and teachers of library & information science, publishing industry, and IT professionals working in this area.**

**Journal of Aquaculture in the Tropics**

**Freshwater Aquaculture**

**An Imperative step in Aquaculture**

**Biotechnological Advances in Aquaculture Health Management**

**International Conference on Digital Libraries (ICDL) 2016**

This book provides comprehensive information on several dimensions of blue revolution in a structured form. Material provided in the book has been gathered from several relevant published sources and views expressed are based on practical field experience of the authors. Blue revolution would be one of the big game changers for the Indian economy. The subject of sustainable development of fisheries sector being very vast, concerted efforts have been made to accommodate all the relevant elements. Very little reading material with proper analysis is currently available and this book is expected to bridge the gap and project way-forward to achieve sustainable development of fisheries and aquaculture in India under the blue revolution. The book is organised under 13 chapters covering wide ranging subjects that include fish production, processing, marketing, exports/imports of fishery products; ecolabelling; role of industry in promoting sustainability in fishing and aquaculture; sustainability issues in marine/inland fisheries/aquaculture; and fisheries regulations and legislations. Information has been provided on Sustainable Development Goals(SDGs)

particularly SDG 14 (Life Below Water); components of blue economy; Government of India fisheries development initiatives; and executive summary of recently launched PMMSY. Emerging plant and cell-based seafood segment; overall impacts of climate change; and impact of recent pandemic COVID-19 on fisheries and aquaculture are discussed under separate chapters. Finally, a chapter on "Way Forward" is included that suggests practical management measures, technology infusion, technical interventions along with few innovative concepts and approaches towards achieving blue revolution. Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

Aquaculture and fisheries continues to be a sector that has not received adequate attention for its contribution to food security goals across the globe. This sector is predicted to grow at a fast rate in the next 40 years. In the Indian context, the government has prioritized the aquaculture and fisheries sector by establishing an independent federal ministry. However, the public extension system in India still lacks resources and strategies to address the needs of fish farmers and fishers. This has created a space for the private extension system to play a pivotal role in providing appropriate skills and training to farmers and fishers. Considering the present challenges in the aquaculture and fisheries sector, this paper proposes the creation of an Aqua-Chamber of Commerce (ACC) as a viable bottom-up approach to improve the performance of the sector by providing adequate support to private

extension system. Additionally, the ACC will also help in improving the public extension system, facilitating the business ecosystem and strategies, and advocating for major policy reforms in the sector.

The book covers various biotechnological research efforts and their applications in fisheries and aquaculture, especially in the area of fish breeding, health management, nutrition and culture. Application of the recent biotechnological tools, like Transcriptomics, Transgenesis, Nanotechnology, Metabolomics, RNAi and CRISPRi Technologies in the field of fisheries research are included in the book. Topics like conservation genetics for management of fishery resources are also covered in the book. It aims at addressing the growing need of the biotechnology in advancing the cause of aquaculture with a view to provide food and nutritional security to the world. This book will be of immense use to teachers, researchers, academicians, development officials and policymakers, involved in R&D of fisheries and aquaculture sectors. Also, the book serves as an additional reading material for undergraduate and graduate students of fisheries, marine sciences, ecology, aquaculture, and environmental sciences. The research in aquaculture biotechnology is likely to have significant impact on aquaculture and fisheries by way of supporting nutritional food security to the growing population.

Aquaculture in India

Sustainable Blue Revolution in India

Text Book of Crustacea

Bangkok, Thailand, 4<sup>th</sup> 6 September 2018

## Biotechnological Applications of Quorum Sensing Inhibitors

Papers presented at the 15th All-India Congress of Zoology, held at Jammu during 29-31 October 2004.

This publication is presented in two parts.

The objective of this book is to provide single platform for preparation of competitive examinations in Food Science and Technology discipline. The book contains about 10,000 objective questions on the subjects such as Food Chemistry, Food Microbiology, Food Engineering, Dairy Technology, Fruits and Vegetables Technology, Cereals Technology, Meat Fish and Poultry Processing, Food Additives, Foods and Nutrition, Bioprocess Technology, Food Packaging, Food Analysis, Functional Foods, Emerging Food Processing Technologies, Food Biochemistry and Miscellaneous topics. The book also contains subjective keynotes for above mentioned topics.

Impact of Climate Change on Hydrological Cycle, Ecosystem, Fisheries and Food Security

Assessment of Freshwater Fish Seed Resources for Sustainable Aquaculture

Recent Advances and New Species in Aquaculture

Inland Fisheries

Enzymes in Food and Beverage Processing

Crustaceans are distinguished from myriapods and insects by many more traits. A striking difference is seen in leg structure. The morphological characteristics

Taxonomy, Anatomy and Physiology of various

crustaceans including vital systems are the major part of this book. Varieties of Crustaceans have its economic values in captures and culture practices so their basic nature, structures functioning details are needed. Those lines are touched in this book. Contents: Introduction

Crustacea, Taxonomy of Crustacea, Body Plan and

Appendages, Digestive System, Excretion and Osmoregulation, Musculature, Respiratory System, Circulatory System, Nervous System, Sense Organs, Endocrine Gland and Hormones, Reproductive System, Economic Importance, Few Crustaceans.

This book discusses the practical applications of quorum sensing inhibitors for both human and plant health. Quorum sensing inhibitors that disrupt microbial biofilms can be employed to treat bacterial infections. The book describes the various bioactive molecules that can serve as quorum sensing inhibitors to combat deadly bacterial infections, in addition to several synthetic quorum sensing inhibitors. Quorum sensing is the mechanism through which bacteria develop antibiotic resistance. Intended to provide a clearer understanding of the practical applications of quorum sensing inhibitors, the book details how the problem of antibiotic resistance can be countered through the intelligent application of quorum sensing inhibitors. Aquaculture sector in Asia-Pacific has grown rapidly during the past four decades and contributed significantly to food security, nutrition, livelihood and overall socioeconomic development in the region. Meanwhile, disease problem has become increasingly challenging in aquaculture. Un-prudent and poorly controlled use of anti-microbial in animal disease control in aquaculture can have significant contribution to AMR risk. Although the control over the use of antimicrobial in aquaculture through some regulatory frameworks has been strengthened over the past decade in the region, it is far from adequate and effective in

many Asian countries. In order to support the members to effectively address AMR in aquaculture for public health and sustainability of the sector, FAO and Network of Aquaculture Centres in Asia-Pacific (NACA) jointly organized the regional consultation on AMR associated with aquaculture in Asia-Pacific on 4-6 September 2018. This publication documents the conduct of the regional consultation and its outputs, which identified major issues and gaps in tackling AMR issue in aquaculture and recommended desirable interventions and long-term strategy to effectively mitigate AMR risk related to aquaculture in the region. The document also includes the seven country case studies on status of use of antimicrobial in aquaculture and the efforts to manage the risks of antimicrobial resistance, which were presented at the regional consultation.

Smart Future: Knowledge Trends that will Change the World

Indian Trade Journal

Rural Development

Objective Genetics, Biotechnology, Biochemistry and Forestry

Conservation and Processing

In this book, Definition for Aquaculture, Sources for Aquaculture in India, Present status of Aquaculture in India have been detailed. The suitable culture fish and shell fish were described. Composite, Cage, Biofloc fish culture systems are discussed. The new updated information on fresh water, brackish water fish and shrimp culture methodologies are detailed. The disease science and their curative measures were classified and suggested. The post-harvest technologies, value

added seafood products and ornamental fish culture were also brought to attention. The importance of Aquaculture and its impact on socio-economic status of common man is described. Biotechnology has immense potential for resolving environmental problems and augmenting food production. Particularly, it offers solutions for converting solid wastes into value-added items. In food processing industries that generate voluminous by-products and wastes, valorization can help offset growing environmental problems and facilitate the sustainable use of available natural resources. Valorization of Food Processing By-Products describes the potential of this relatively new concept in the field of industrial residues management. The debut book in CRC Press's new Fermented Foods and Beverages Series, this volume explores the current state of the art in food processing by-products with respect to their generation, methods of disposal, and problems faced in terms of waste and regulation. It reviews the basic fundamental principles of waste recycling, including process engineering economics and the microbiology and biochemical and nutritional aspects of food processing. It discusses fermentation techniques available for valorization of food processing by-products, enzyme technologies, and analytical techniques and instrumentation. Individual chapters examine the by-products of plant-based and animal-based food industries. The book also delves into socioeconomic considerations and environmental concerns related to food processing by-products. It surveys research gaps and areas ripe for further inquiry as well as future trends in the field. An essential reference for researchers and practitioners in the food science and food technology industry, this volume is also poised to inspire those who wish to take on valorization of food by-products as a professional

endeavor. A contribution toward sustainability, valorization makes maximum use of agricultural produce while employing low-energy and cost-effective processes.

Freshwater Aquaculture – the study of breeding, rearing and commercialization of organisms, fish in particular, which inhabit in fresh water. Even though there remains some fragmentary information regarding the history of development of aquaculture in India but those seem to be far from being complete. In the present communication, the same has been given elaborately. The book concentrates on the culture technology of commercially important fresh water fishes.

Various types of culture techniques including Aquaponics, Bioflocs, Recirculatory Aquaculture Systems (RAS) apart from the conventional Cage culture, Pen culture, Integration of fish culture with other crops viz. paddy, vegetables, dairy, piggery, poultry etc. have been dispensed in detail. Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

Lok Sabha Debates

Research Trends on Fish & Fisheries in Mountain Waters of Eastern Himalayan Region

India

Antimicrobial Immune Response

Asian Fisheries Science

Infectious microbial agents such as viruses, bacteria, fungi, and parasites can cause pathological disorders and even death in organisms exposed to the environment. However, organisms have an immune system to control infection

caused by pathogens. The immune system is divided into the innate and the adaptive immune systems. The innate immune system is the first mechanism to respond to infections, whereas the adaptive immune system is based on immune memory. This book provides an overview of antiviral and antibacterial immune responses in different immune-reactive organs and across different animal species, from higher to lower vertebrates.

This book is an inclusive coverage of advances in aquaculture health management. It offers latest updates as well as explains the novel concepts and issues related to aquatic animal health management. To support the understanding of the concepts, there is extensive use of illustrations.

Chapters emphasize on the state of art techniques and hold great promise for the sustainable development of aquaculture. This book is of interest to teachers, researchers, aquatic biologists, capacity builders and policymakers. Also the book serves as additional reading material for undergraduate and graduate students of

aquatic sciences, marine sciences, biotechnology, ecology, and environmental sciences. National and international aquatic scientists, policy makers will also find this to be a useful read.

The present book has been designed to serve the students of Plant Breeding, Genetics, Biotechnology, Biochemistry and Forestry. In most of the books, the objective type questions judge the students on the basis of their ability to memorize, because of the way they are formulated. It is important to be able to remember the year of historical events, the scientists involved and who named what to make one remember the landmark contributions of the people on a particular subject. Along with these kinds of questions, majority of the questions in this book have been designed to assess the candidate's understanding of the subject. It is perhaps for the first time where questions have four to six choice statements, which are to be understood to find the right answer. One has to think and remember what he has learnt to be able to answer these questions.

There are some books on objective type questions on the subject of Plant Breeding and a very few on Genetics but there is hardly any book, which deals with Tissue Culture, Biotechnology, Biochemistry or Forestry. All these subjects are related as many postgraduate students of Genetics and Plant Breeding take Biotechnology as a minor subject whereas those of Biotechnology take Biochemistry or Genetics and Plant Breeding as a minor subject. Also, undergraduates in agricultural universities study courses on all these subjects including

Forestry

Electronic Resources Management in Libraries

DARE/ICAR Annual Report

Way Forward

Information Technology for Participatory Development

Regional Consultative Workshop on Antimicrobial Resistance Risk

Associated with Aquaculture in the Asia-Pacific

***This comprehensive, up-to-date text delivers the latest must-have information on species new to***

aquaculture and documents the most important technological innovations of the past decade. Every aspect of the growing field has been addressed with coverage spanning recent technological development, new species, recent changes and global trends. More specifically, you will find information on the culture of species such as barramundi, cobia, dolphin fish, spiny lobsters, slipper lobsters, mud crabs, penaeid prawns, Nile tilapia, yellow king fish, abalone, sea cucumber and sea urchin, seaweed, ornamentals and Indian major carps, fugu, mud skippers, cephalopods and blue fin tuna. The technological innovations and introduction of new species into aquaculture are critical to the evolution of the global aquaculture industry; an industry which is rapidly becoming one of the fastest growing in the world, having experienced huge advances across its many and diverse facets. *Recent Advances and New Species in Aquaculture* focuses explicitly on the ever-changing face of aquaculture, providing core scientific and commercially useful information on the

remarkable growth in aquaculture production and in the advancement of new technological tools. Written by many well respected international figures and drawn together and edited by Ravi Fotedar & Bruce Phillips, this exciting book is an essential purchase for anyone involved in or about to enter into the aquaculture industry. Libraries in all universities and research establishments where aquaculture, fish biology, aquatic and environmental sciences and fisheries are studied and taught will find this an important addition to their shelves. Recent Advances and New Species in Aquaculture is sure to become a key companion for all those studying aquaculture and a valuable source of reference for all personnel involved in the industry.

This book is dedicated to present different aspects of reproductive physiology and molecular endocrinology of commercially important as well as potential aquaculture fish species. The existing aquaculture generation is looking for species diversification for efficient utilization of available

*diverse water resources. The knowledge of reproductive physiology of fish will help in development of breeding strategy for use in commercial aquaculture. Reproductive system is highly coordinated and governed by means of complex network of nervous, endocrine system and environmental factor as well. This book emphasize on different key aspects of reproductive endocrine system such as basic gonadal biology in the events of climate vulnerability, sex determination, sex reversal, stimulatory hormones, inhibitory hormones and receptors, environmental and chemical factor guiding reproduction, puberty, neuroendocrine regulation of reproduction etc. This book further describes how reproduction is not just indispensable for the existence or survival of an individual, but it is important for the survival of species. Chapters also address the concerns of anthropogenic activities on fish and the aquatic environment lead main trouble on physiological and reproductive processes of aquatic animals. This book offers an attractive*

compilation of highly relevant aspects of current and future of aquaculture, especially in view of the growing awareness of aquaculture, to food scientists working on commercial fish, animal biologists, fish geneticists etc. This book is very timely, and relevant to the sustainable development goals. The contents would be relevant to policy makers, working towards blue revolution and blue economy.

This book presents a comprehensive overview of DNA barcoding and molecular phylogeny, along with a number of case studies. It discusses a number of areas where DNA barcoding can be applied, such as clinical microbiology, especially in relation to infection management; DNA database management; and plant -animal interactions, and also presents valuable information on the DNA barcoding and molecular phylogeny of microbes, algae, elasmobranchs, fishes, birds and ruminant mammals. Furthermore it features unique case studies describing DNA barcoding of reptiles dwelling in Saudi Arabian deserts, genetic variation studies in both wild and

*hatchery populations of Anabas testudineus, DNA barcoding and molecular phylogeny of Ichthyoplankton and juvenile fishes of Kuantan River in Malaysia, and barcoding and molecular phylogenetic analysis of indigenous bacteria from fishes dwelling in a tropical tidal river. Moreover, since prompt identification and management of invasive species is vital to prevent economic and ecological loss, the book includes a chapter on DNA barcoding of invasive species. Given its scope, this book will appeal not only to researchers, teachers and students around the globe, but also to general readers.*

*Indian Farming*

*Developing India's Strategic Response to the Global Debate on Fisheries*

*Subsidies (CMA Publication No. 236)*

*DNA Barcoding and Molecular Phylogeny*

*Recent updates in molecular*

*Endocrinology and Reproductive*

*Physiology of Fish*

*Advances in Fisheries Biotechnology*

This book discusses how to use the wastewaters, liquid biowastes and soils unfit for agriculture to economically viable aquaculture practices; and putting the emphasis

on, aquaculture posology, the science of quantification and administration of doses in aquatic health and aquaculture management. Broadly, aquaculture practices come across three types of problems each; in the context of water quality, and fin fish and shell fish diseases; and preventive, curative and noncurative diseases in fin fish and shell fish. Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

This Book, Putting Together Papers Presented At The Special Session On Information And Local Administration Of The National Seminar On Right To Information, Attempts To Deal With The Various Aspects Related To Information Technology For Participatory Development.

'Fundamentals of Agriculture' for competitive exams in agriculture discipline contains 6 chapters in volume I and 7 chapters in volume II covering all disciplines of agriculture. The chapters included General Agriculture, Agricultural Climatology, Genetics, Plant Breeding & Biotechnology, Plant Physiology & Biochemistry, Seed Technology and Agronomy in volume I and Soil Science & Agricultural Microbiology, Horticulture, Entomology, Plant Pathology, Agriculture Extension, Agriculture Economics and Agriculture Statistics in Volume II have given due importance and whole syllabus is covered as per ICAR/SAUs syllabus and guidelines. Each chapters contains very short types of descriptive questions. Recent precise information and development in the field of agriculture have been incorporated in the book. For the overall benefit of the student in the discipline of

agriculture we have made this book exclusively in such a way that it hands out not only solutions but also detailed explanations. Though these detailed and thorough explanation, student can learn the concepts which will enhance their thinking and learning ability. Thus this book may be useful not only to students but also teachers, researchers, extension workers and development officers for reference and easy answering of many complicated questions of all related disciplines of agriculture. Fundamentals of Agriculture covers the course contents of competitive examinations like IAS, IFS, PCS, ARS, Banking services, B.Sc./M.Sc./Ph.D. (Ag) admission, states and national levels of different competitions in agriculture. The entire book is prepared in most simple, clear, talking language, comprehensive and short descriptive types of questions so that the concepts could be easily understand by the readers in short times. Hence, this book can solve as a single platform for preparation of different competitive examinations in agriculture.

Valorization of Food Processing By-Products

A bottom-up approach for a private fisheries extension system: A framework and action plan for an aqua-chamber of commerce in India

Indian Journal of Fisheries

Universities Handbook

Fundamentals of Agriculture (Vol. 1-2)

Food is an essential means for humans and other animals to acquire the necessary elements needed for survival. However, it is also a transport vehicle for foodborne pathogens, which can pose great

threats to human health. Use of antibiotics has been enhanced in the human health system; however, selective pressure among bacteria allows the development for antibiotic resistance.

Foodborne Pathogens and Antibiotic Resistance bridges technological gaps, focusing on critical aspects of foodborne pathogen detection and mechanisms regulating antibiotic resistance that are relevant to human health and foodborne illnesses This groundbreaking guide:

- Introduces the microbial presence on variety of food items for human and animal consumption.
- Provides the detection strategies to screen and identify the variety of food pathogens in addition to reviews the literature.
- Provides microbial molecular mechanism of food spoilage along with molecular mechanism of microorganisms acquiring antibiotic resistance in food.
- Discusses systems biology of food borne pathogens in terms of detection and food spoilage.
- Discusses FDA's regulations and Hazard Analysis and Critical Control Point (HACCP) towards challenges and possibilities of developing global food safety.

Foodborne Pathogens and Antibiotic Resistance is an immensely useful resource for graduate students and researchers in the food science, food microbiology, microbiology, and industrial biotechnology.

The ICDL Conferences are recognized as one of

the most important platforms in the world where noted experts share their experiences. Many DL experts have contributed thought-provoking papers in ICDL 2016. These important papers are reviewed and conceptualized into ICDL on different areas of DL proceedings. The Proceedings have two volumes and over 700 pages.

This book contains a total of 25 unpublished research articles. In this edition, we have kept parity with each other's outcomes, concisely in a unique style to depict the trends of research in the mountain fishery sector. We have also appended a list of contributors at the end of the book. The strategies observed in fisheries and aquaculture developments in the mountain waters clearly reveal that the on-going dimensions are nothing but broad ecosystem-based approached where both subsistence and commercial expansion of the systems could be possible. The research trend also directs that several fishery components, like ornamental fisheries, recreational fisheries, integrated fish farming, freshwater crab fishery, shellfish aquaculture, etc., exist. They may also be strengthened in mountain waters to improve the economic status of the mountain regions. Thus for exploiting huge mountain aqua-resources, Arunachal Pradesh targets the ecosystem-based approach of raising native mahseers, like *Tor tor*, *Tor putitora*, *Neolissochilus hexagonolepis*, and

exotic species of trout in its mountain waters as a preliminary endeavour.

Objective Food Science & Technology, 2Nd Ed.

A Functional Approach