

Promoting Innovations in the Fisheries Value Chain for Improving Human Nutrition in South Asia

Edited by
Grinson George
Md. Baktear Hossain



SAARC Agriculture Centre (SAC)

South Asian Association for Regional Cooperation

Promoting Innovations in the Fisheries Value Chain for Improving Human Nutrition in South Asia

Edited by

Grinson George

Md. Baktear Hossain



SAARC Agriculture Centre

South Asian Association for Regional Cooperation (SAARC)

Promoting Innovations in the Fisheries Value Chain for Improving Human Nutrition in South Asia

Edited by

Grinson George

Md. Baktear Hossain

September, 2021

© SAARC Agriculture Centre 2021. All rights reserved. No part of this publication may be reproduced in any form or by any means, electronically, mechanically, by photocopying, recording or otherwise, without the prior permission of the publisher.

Published by The Director, SAARC Agriculture Centre, BARC Complex, Farmgate, New Airport Road, Dhaka 1215, Bangladesh (<http://www.sca.org.bd>).

ISBN: 978-984-35-0861-4

Citation:

Grinson George and Md. Baktear Hossain (Editors). 2021. Promoting Innovations in the Fisheries Value Chain for Improving Human Nutrition in South Asia. SAARC Agriculture Centre, Dhaka, Bangladesh, 232p

This book contains the country paper, invited paper and proceedings of the SAARC regional expert consultation meeting on “Promoting Innovations in the Fisheries Value Chain for Improving Human Nutrition in South Asia” held virtually during 23-24 November, 2020 by SAARC Agriculture Centre, Dhaka, Bangladesh. The experts for the country paper presentations were the representatives of their respective government of SAARC Member States. Other experts invited for technical paper presentation delivered talks in their official capacity on personal invitation. The opinions expressed/ images used/ tables presented in this publication are those of the authors and do not imply any opinion whatsoever on the part of the SAARC Agriculture Centre, specifically regarding the legal status of any country, territory, city or area or its authorities. It is implied that necessary permissions are taken by the authors for reproducing any of their content and any legal queries may be addressed to the authors.

Cover design: Ms. Sanjida Akhtar, SAC, Dhaka

Cover photos: Aruna Maheepala, NARA, Sri Lanka

Printed by: Momin Offset Press, Dhaka, Bangladesh

Price

US\$ 10 for SAARC Member States

US\$ 15 for rest of the world

Foreword



The fisheries and aquaculture sector are of fundamental importance to the South Asian region providing opportunities for generating revenue and employment, and contributing particularly to food and nutrition security, vital for rural people's livelihood improvement. I do evidently feel that the compilation of this valuable document on fisheries and aquaculture value-chain is an outstanding endeavour. The entire South Asian region is doing a commendable role in augmenting fish production and is setting an example in the world in terms of fish production in the region. It is indeed noteworthy to learn about the invaluable contributions of fisheries value-chain towards food and nutrition security of the region as a whole. But the length of the chain is longer and is increasing daily as it was perceived while reading this book. I do evidently realize that the technological interventions in different South Asian countries in improving the quality of the fish in the entire value-chain process are remarkable.

The South Asian region is reeling under the pressure of providing quality protein in the diet of its people. Fish seems to be a probable solution. Relishing culinary in fish seems to be a mind-boggling option left for the South Asians in terms of achieving nutritional security and the people in the South Asian region have special affinity to the fish and the variety of dishes it is offering. Therefore, the nutritional value in future in the region depends on the good quality of fish inculcated into the supply-chain. Understanding the nutritional superiority of the fish protein, let us strive for resolving the challenges in fisheries value-chain in the region by adopting suitable interventions beneficial to the farmers, end consumers as well as the entire network involved as intermediaries in the fish trade.

I take the privilege and great opportunity to congratulate Dr. Grinson George, Senior Programme Specialist (Fisheries), Dr. Md. Baktear Hossain and the entire team of experts of eight South Asian countries, eminent resource persons who greatly contributed and deliberated on the topic, and all others who worked for the successful compilation and completion of this valuable book. I would also like to thank all authors for their enthusiastic contributions. I am confident enough that this book will impress upon the policy planners and stakeholders in fisheries and aquaculture sector in upholding the goals and targets as envisaged in the Sustainable Development Goals (SDGs)-2030 of the United Nations (17 SDGs and 169 Targets).

Long live the spirit of the SAARC.

Dr. S. M. Bokhtiar

Chairman

Bangladesh Agricultural Research Council (BARC)

Dhaka, Bangladesh

Preface

South Asian aquaculture and fisheries is quite unique from the rest of the World. An enviable production of fish from capture and farming happening in this region is a testimony of the synergy between different integral components ably supported with technologies in the sector. Being a product, which has to survive a long supply chain, it was interesting to learn about the entire value-chain systems existing in aquaculture and fisheries in South Asia starting from the production to the end consumer.

The ideas for this book were initially conceived by Dr. Rudra, Senior Programme Specialist (PSPD), who prepared the concept note for a regional expert consultation meeting based on the inputs received from the SAARC Agriculture Minister's meeting on this topic. Based on the recommendations of the Governing Body, the programme was conceived with the support of the ex-Director Dr. Mian Sayeed Hassan and other SAARC Agriculture Centre (SAC) colleagues especially Dr. Younus Ali and from Ms. Ishrat Jahan, Director, Agricultural and Rural Development at the SAARC Secretariat and our beloved Mr. Shihab Uddin who was instrumental in communicating with the SAARC Secretariat, SAC and all eight-member countries in the South Asia. Though we had all intentions of having a physical meeting when the programme was conceived initially, the pandemic situation resulted in a virtual meeting. Despite the inherent disadvantages of a virtual meeting, the ideas were bubbling with learned nominated experts from different Member States contributing significantly to the process which eventually culminated in the form of this book.

Our technical knowledge was complimented by seniors and colleagues from the Indian Council of Agricultural Research (ICAR), India ably guided by Dr. J.K. Jena, Deputy Director General (Fisheries), ICAR, India. We specifically acknowledge Dr. C.N. Ravishankar and his team members from ICAR-Central Institute of Fisheries Technology, India who helped us overcome our lack of knowledge in certain areas of these deliberations. The challenges, possible solutions, technical interventions, policy guidelines, the entire process and its inherent pros and cons were discussed with the experts from different South Asian countries and renowned resource persons so as to come up with consolidated recommendations for the entire region which is a major output of this exercise. The completion process of this book was hampered several times with the pressure of COVID-19 pandemic which forced us to relax the dead-line. But we sincerely appreciate the contribution and time of all learned experts from the South Asian countries who strive with passion to do it earnestly.

Dhaka, Bangladesh

Grinson George
Md. Baktear Hossain

Contents

Foreword		iii
Preface		v
Chapter- 1	Promoting Innovations in the Fisheries Value Chain for Improving Human Nutrition in South Asia <i>Grinson George and Md. Baktear Hossain</i>	1
Country Papers		
Chapter- 2	Promoting Innovations in the Fisheries Value Chain for Improving Human Nutrition in Afghanistan <i>M. Anwar Sadaf and Sayed Naweed Hashimi</i>	10
Chapter- 3	Promoting Innovations in the Fisheries Value Chain for Improving Human Nutrition in Bangladesh <i>Hassan Ahmmed Chowdhury and Md. Mukhlesur Rahman</i>	23
Chapter- 4	Promoting Innovations in the Fisheries Value Chain for Improving Human Nutrition in Bhutan <i>Drukpolo and Munna Rai</i>	53
Chapter- 5	Promoting Innovations in the Fisheries Value Chain for Improving Human Nutrition in India <i>Ravishankar C.N., Swain S.K., Madhu V.R., Gopal Krishna, Gopalakrishnan A., Vijayan K.K., Das B.K., Lal K.K., Sarma D. and Jena J.K.</i>	73
Chapter- 6	Promoting Innovations in the Fisheries Value Chain for Improving Human Nutrition in Maldives <i>Adam Manik</i>	115
Chapter- 7	Promoting Innovations in the Fisheries Value Chain for Improving Human Nutrition in Nepal <i>Sumitra Laudari and Subhash Kumar Jha</i>	124
Chapter- 8	Promoting Innovations in the Fisheries Value Chain for Improving Human Nutrition in Pakistan <i>Wattoo M. J and Ali M. R</i>	144
Invited Papers		
Chapter- 9	Promoting Innovations in the Fisheries Value Chain for Improving Human Nutrition in Sri Lanka <i>Aruna Maheepala</i>	164
Chapter- 10	Technological Interventions in Harvest and Post-harvest Sector for Improved Utilization and Promote Entrepreneurship in Fish Value Chain <i>George Ninan, Madhu V.R. & Ravishankar C.N.</i>	184
Report of the SAARC Regional Expert Consultation Meeting		226
List of Participants		229
Virtual Regional Expert Consultation Meeting Photo		232