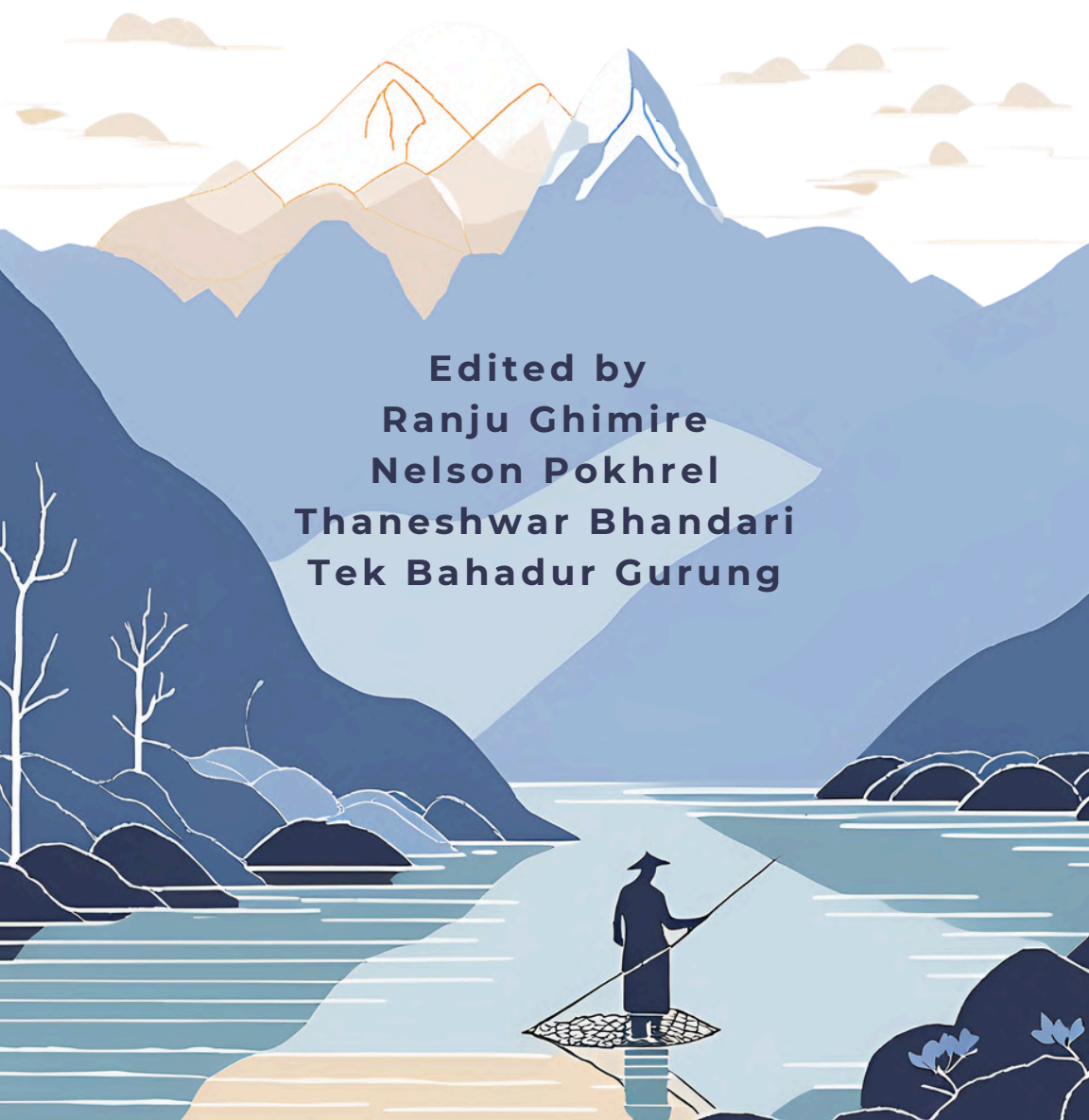


TBTI GLOBAL BOOK SERIES

THE BEAUTY & THE BOUNTY AT RISK

SMALL-SCALE FISHERIES OF NEPAL

Edited by
Ranju Ghimire
Nelson Pokhrel
Thaneshwar Bhandari
Tek Bahadur Gurung



The Beauty and the Bounty at Risk

Small-Scale Fisheries of Nepal

edited by

Ranju Ghimire
Nelson Pokhrel
Thaneshwar Bhandari
&
Tek Bahadur Gurung

Copyright © 2024 by R. Ghimire, N. Pokhrel, T. Bhandari & T. B. Gurung

All rights reserved

Published by

TBTI Global

This work is licensed under a Creative Commons Attribution-NonCommercial-No Derivatives 4.0 International License



TBTI Global Book Series
ISBN: 978-1-7390539-4-9



Too Big To Ignore Global (TBTI; toobigtoignore.net) is a research network and knowledge mobilization partnership supported by over 800 members from around the world. The network aims at elevating the profile of small-scale fisheries, arguing against their marginalization in national and international policies, and developing research and governance capacity to address global fisheries challenges.

TBTI Global Book Series is a publication series that highlights why we need to pay close attention to small-scale fisheries. The series will be of use to anyone interested in learning more about small-scale fisheries, especially about their important contribution to livelihoods, well-being, poverty alleviation and food security, as well as to those who are keen to help raise profile of small-scale fisheries in the policy realm.

Cover design by Vesna Kereži

Production manager for the TBTI Global Book Series: Vesna Kereži

Contents

Proposing Big in Small-Scale Fisheries to Establish Too Big...	1
The Beauty and the Bounty	11
Small-Scale Fisheries in the Face of Climate Change: A...	15
Community Responses to the Bote Livelihood Crisis and...	16
Harpan Fewa Fishery Cooperative of Pokhara Valley: Inspiring...	17
What Kind of Development?	18
Small-Scale Fisheries: Catalysts for Poverty Reduction, Food...	19
Notes on Status of Small-Scale Fisheries in Begnas Lake,...	20
Traditional Small-Scale Fishers and Their Livelihood around...	21
Small-Scale Fishing Communities, Fishing Gears and Fishing...	22
Importance of Fish Conservation and Ways to Minimize Fish...	23
Overview of Small-Scale Fisheries in Nepal	24
My Childhood Fishing Memories in Hill Streams of Mid Hills...	25
Women Fishers in Dry Fish Selling: A Case From Koshi Tappu...	26
Capture Fishery in Bote Community of Chitwan	27
Fish Diversity and Livelihood Status of Fishers at...	28
Sustainability of Malekhu Fish Eatery Market: Questions for...	29
Women Empowerment in Small-Scale Fisheries	30
Transition from Small-Scale Fishing to Small-Scale...	33
Fish Stock Assessment and its Management Practices in...	37
A Tragic Story of an Old Fisher: Livelihood Risk of Life and...	38
An Unknown but Pleasant Destiny as a Fisheries Scientist...	41
Fishing Gears Used by Fishing Community in Chitwan	43
Riverside Realities: Tribeni's Contribution On Communities	44
Local Indigenous Species of Fish caught by Ethnic Community...	45

Proposing Big in Small-Scale Fisheries to Establish Too Big To Ignore Hub for Land-Locked Countries

Tek Bahadur Gurung, Chiranjibi Bhattarai, Sarita Gautam, Ramanand Mishra, Thaneshwor Bhandari, Nelson Pokharel, Ranju Ghimire, Devendra Gauchan, Yam Bahadur Thapa, Hari Pant, Abhilasha Jha, Umita Sah, Shiv Narayan Mahato, Akbal Husen, Bharat Subba, Dilip Kumar Jha Sunila Rai, Suresh Kumar Wagle, Srishti Ghising, Madhav Shrestha, Dylan Rodger, William Bryce, Subodh Sharma, Pramod Rijal, Kailash Gurung, Rahul Ranjan, Hira Chudali, Narayan Gyawali, Manjurul Karim, Svein Jentoft, Ratana Chuenpagdee

Abstract

Small-scale fisheries represent one of the most important natural resource-based means of livelihood for Indigenous communities often known as fishers. The small-scale fisheries, especially for landlocked countries like Nepal, carry an extra weight as a significant portion of the population relies on aquatic resources. In this context, this paper revolves around the concept of small-scale fisheries and Too Big To Ignore (TBTI) and comprises situation analysis and explores options for establishing a TBTI hub in Nepal for the landlocked countries. For the purpose of the paper, relevant literature collection, desk-based review and key informant interviews were conducted. Additionally, sporadic observations of individuals, author's experiences and opinions also are used to inform and enrich the paper.

Evidences suggest that the small-scale fisheries were developed through age old traditions, traditional knowledge and practices as the community culture and that these fisheries still remain a popular means of livelihood among fishing communities in Nepal. Small-scale fisheries support communities through food and nutrition, employment and poverty reduction. Moreover, the small-scale fisheries represent a sustainable natural resource harvesting approach influenced by Indigenous wisdom that helps conserve aquatic biodiversity in aquatic and terrestrial environments. At the same time, sustainable management of such resources has become a difficult task in the face of market-based economy where traditional means of resource harvesting are replaced by modern licensing regimes. Consequently, the TBTI concept becomes crucially relevant. Therefore, we conclude that for healthy ecosystem and strengthening of community self-governance, sustainability and perpetuity of the small-scale fisheries in landlocked countries like Nepal is inevitable. We envision and seek the TBTI Global's collaboration with Nepal to develop policy and regulatory framework on small-scale fisheries and establish a TBTI hub in order to recognize the sector and uphold the Indigenous wisdom.

Key words: *Aquatic; terrestrial; ecosystem; balance; food security; self-employment*

Introduction

Small-scale fisheries represent primarily captured-fisheries, a traditional occupation to many communities. For some communities, it is the only source of income and livelihood easily available to them. It is also closely linked with Indigenous fisher's culture, tradition, practice, knowledge, and language, among others. Captured fishery, as one of the most important occupations, is notably in decline for the last 20-30 years due to several reasons, such as over exploitation and lack of appropriate legal and policy instruments and regulatory mechanisms, especially in inland waters (FAO, 2022). Small-scale fisheries have been hugely impacted by the rapid industrialization, urbanization, marginalization of fishers, mushrooming hydropower dams, and pollution, among others, and they have received lower priority in

most of the landlocked and coastal countries. Further deprivation of small-scale fishers has adverse impacts in terms of food and nutritional security, livelihood, employment and income, and education of children from the fishing families. Realizing the need to protect the small-scale fisheries from such adversities and blatant encroachments, the UN/FAO (2015) adopted a 'Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication' (the SSF Guidelines). The SSF Guidelines duly acknowledge that the small-scale fisheries are a very important source of food, nutrition, employment and livelihoods for millions of people around the globe for the realization of the right to food and nutrition (FAO, 2021). The small-scale fisheries have been facing an existential threat from increased encroachments, devaluations and neglect worldwide. In this context, Too Big To Ignore (TBTI) concept emerged from a global forum with an objective to bring awareness on the small-scale fisheries and offer 'Blue Justice' to stakeholders from coastal areas to headwaters of landlocked countries. The term Blue Justice was coined at the 3rd World Small-Scale Fisheries Congress in 2018 (Blythe et al., 2023) and it embraces the fact that Indigenous people, small-scale fishers and their traditions, languages, cultures and Indigenous knowledge are also present in the headwaters of landlocked countries.

Practices on captured fisheries in inland waters are poorly documented, especially under conceptual frameworks, though these fisheries contribute significantly to food and nutrition security, and self-employment opportunities to a major chunk of the world's population (Cooke et al. 2015; Funge-Smith, 2019; Lynch, et al. 2020; Gurung, 2022). The SSF Guidelines are crucially important for the landlock countries who do not have direct access to seafood and fishery resources. They are invaluable for inland headwaters where majority of the small-scale fisheries catches are for human consumption (FAO, 2015). At the same time, the realities on the ground are very different because of neglect and encroachment on the small-scale fisheries, mostly due to the rapid development activities and the management of waterbodies through licensing.

According to Jentoft and Chuenpagdee (2022), in order to achieve the

sustainability of small-scale fisheries, the appropriate arrangement of the three orders of governance become highly desirable. In most landlocked countries such institutions are generally either absent or, if at all present, are usually in rudimentary forms. Almost all institutions related to fisheries lack specific legal mandate and assigned responsibilities to govern small-scale fisheries. Therefore, establishing a TBTI hub can be an instrumental step in policy and institution fronts, especially for the landlocked countries as a way to fill the gap and achieve the three orders of governance as proposed by Jentoft and Chuenpagdee (2022).

Statement of the problems/ Challenges ahead / Theory of Change/ Assumptions/hypothesis

The landlocked countries do not have direct access to oceanic resources that offer a vital source of food and livelihood for coastal communities. Therefore, they have to rely on inland aquatic resources. A great number of Indigenous communities of landlocked countries directly depend on inland water resources, especially for capture fisheries, aquatic plants and animals. But the gradual shrinking of the small-scale fisheries' access to resources in landlocked countries has pushed the communities towards poverty, hunger, malnutrition and several other forms of marginalization. It is a matter of great concern as well as a global challenge within the context of Leave No One Behind guiding principle under the 2030 Sustainable Development Goals. Moreover, small-scale fisheries have been one of the least heard as well as most ignored areas of natural resource management in the arena of modern policies and practices in Nepal. Considering this fact, FAO, state parties and several other organizations adopted the SSF Guidelines in 2014 as a major tool to ameliorate poverty, hunger and malnutrition from the aquatic resource dependent communities. The aim is to promote awareness, sensitivity and education about small-scale fisheries, especially among the policymakers and other stakeholders in the landlocked countries. Considering the context and importance of small-scale fisheries, this paper considers and concludes

that the TBTI Global hub is an appropriate platform to promote small-scale fisheries in the landlocked countries and envisions a TBTI Global hub in Nepal as representative of a landlocked country. We expect that the Nepal hub should be relevant and strategically instrumental in order to foster small-scale fisheries in the landlocked countries. Consequently, we hope that as a result of these efforts a significant portion of the small-scale fisheries community would be better off economically, socially and culturally compared to nowadays.

Materials and methods

Qualitative methods of research were used to collect relevant literature and information in relation to the preparation of this chapter. Online resources were accessed from Google search and Google Scholar engines and selected using key words i.e., small-scale fisheries, SSF Guidelines, aquatic resources, landlocked countries, TBTI, SDGs. Previous research works and expert writings were collected from printed sources such as books, journals, magazines, official notifications from public and private libraries and archives. Key informant interviews were conducted with experts and members of fishing community to get deeper insights. Additionally, field observations, past experiences and opinions of authors are also utilized to inform and enrich the paper. Subsequently, the data were cleaned, curated and analyzed in the present form.

Results and discussion

The small-scale fisheries are poorly addressed in landlocked countries except few where existing law and policies (Giri, 2019). In many countries the policies have not given any adequate recognition to small-scale fisheries. According to FAO (2021), the small-scale fisheries are a very important source of food, nutrition, employment and livelihoods for millions of people around the world and thus particularly relevant to the realization of right to food, nutrition, health and employment. The fishery resources are renewable by

nature because they can rejuvenate and grow again and again if harvested sustainably (Freedman, 2018). The fisheries cannot be ignored because its contribution is significant to human health, ecosystem services, restoring self-employment opportunities to the substantial portion of fishers, peasants and ethnic population. Fisheries governance generates opportunities for self-employment, biodiversity conservation, gender inclusion, and social harmony. At the same time, the TBTI hub works on the small-scale fisheries adopting transdisciplinary approaches bringing scientists, practitioners and communities together.

A study conducted by IUCN (2004) showed that about 10.8% of total population of Nepal from 13 different ethnic communities were relying on small-scale fisheries. There could be several reasons for such a heavy reliance of a huge number of people from ethnic communities involved in captured fishing in a landlocked country like Nepal. Firstly, it is part of everyday lives of many communities passed through generations and is embedded in their cultures and traditions. This group represents the traditional fishing communities living near water bodies in hills, mountains and flood plains of Tarai where water resource is abundant in the form of rivers, lakes, ditches, swamps and productive paddy fields.

Secondly, we assume that most of the people from fishing communities are economically poor and marginalized. Capturing fish in water bodies, except in the protected areas like national parks and wildlife reserves, is still open to and free for all who take fishing as 'last resort' to secure livelihood and practice it as a reliable source of food, nutrition and income, largely available for poor. Thirdly, the popular community forestry program of Nepal in one way or the other limits the access to forest resources and collection of firewood, livestock grazing and other non-timber forest products. It may have resulted in the landless and poor households adopting fishing as a source of livelihood.

Vision statement on establishing TBTI hub for landlocked countries

Artisanal small-scale fisheries in rivers, lakes, ponds and wetlands has been a base of livelihood of millions of ethnic communities since time immemorial. Hundreds of fish species and fishing communities with different tradition and culture are based on small-scale fisheries. The culture, tradition, language and civilization of small-scale fishing ethnic communities are declining, along with fish species, shrinking water resources, poor laws, lack of governance, institutions, and several other anthropogenic activities. As a result, traditional fishers are losing self-employment and livelihood opportunities. Deprivation and unemployment may cause and escalate social chaos and conflict. Artisanal small-scale fisheries is a resilience to avoid social conflict. However, sustainable artisanal small-scale fisheries require governance for increasing awareness on the importance of aquatic and fisheries resources. Such institutions and resources become more important in landlocked countries where such products of low volume and high importance in terms of vitamin, protein and high nutrition could be available only through inland fisheries only.

The traditional fishing occupation provides opportunities of self-employment. Artisanal small-scale fisheries cannot be ignored because of their role in countries economy, biodiversity and social harmony in the landlocked countries. Within this context, the TBTI hub for landlocked countries will bring scientists, practitioners, community, groups together under an umbrella through transdisciplinary approaches and will ensure an improved awareness of the importance of the existence and roles of Nepalese small-scale fisheries.

The vision of TBTI hub includes the following: (1) Adopt and scale up the information activity along with systematic research on the various functions, importance, and strength of small-scale fisheries of a landlocked country like Nepal, which would also be lesson for nations of similar socio-economic relevance; (2) Promote transdisciplinary approaches of small-scale fisheries research, extension and education; (3) Enable gender equality and equity in

landlocked based fisheries of Nepal; (4) Secure rights of traditional fishers and their successors income and livelihood by new initiatives and concepts of small-scale fisheries; (5) Approach small-scale fisheries of landlocked countries from the standpoint of theoretical discussions on Blue Justice and climate change issues; 6) Help to recognize the importance of the SSF Guidelines and promote their implementation.

Conclusion

In order to protect and promote small-scale fisheries and to develop a model of small-scale fisheries for landlocked countries, considering its unique geography, economy, culture and traditional practices and the community dependency on small-scale fisheries, establishment of a TBTI hub for landlocked countries deems essential. It could be a significant step to provide benefits of Blue Justice, especially within the context of landlocked countries. We believe that such a hub will provide its services to highly marginalized and poor fishers in contributing to promote their livelihood, food security and opportunities for self-employment. All these opportunities will be helpful in maintaining internal peace and understanding, and for achieving SDG targets and the vision of the 'No One Left Behind' principle. Therefore, this proposal to establish TBTI hub in Nepal is a quest for ensuring Blue Justice in the small-scale fishing sector especially for the landlocked countries and to set a model to rejuvenate and restore small-scale fisheries for achieving multiple objectives such as biodiversity conservation, livelihood promotion, food security, and poverty reduction. The ethnic, ecosystem and fish species diversity and the geographical variations of Nepal justify it to become a TBTI hub with purpose and meaning.

Acknowledgement

We thank all students and professors of Agriculture and Forestry University, Chitwan for their comments and suggestions during the preparation of this manuscript. We are indebted to all fishers of landlocked countries

associated with small-scale fisheries. We thank TBTI Global for organizing an interactive, five-day writing workshop in Nepal. We are thankful to all the staffs and Dean of Faculty of Animal Sciences, Veterinary and Fisheries for their support.

References

Akimitsu, T. (1996). Marine resource use and its transformation in small-scale fisheries in Southeast Asia and Oceania. Kagoshima Univ. Res. Center S. Pac, Occasional Papers. 28: 13-21.

Blythe, J. L., Gill, D.A., Claudet, J., Bennett, N.J., Gurney, G.G., Baggio, J.A., Ban, N.C., Bernard, M.L., Brun, V., Darling, E.S., Di Franco, A., Epstein, G., Franks, P., Horan, R., Jupiter, S. D., Lau, J., Lazzari, N., Mahajan, S.L., Mangubhai, S., Naggea, J, Turner, R.A. and Zafra-Calvo, N. (2023). Blue justice: A review of emerging scholarship and resistance movements. Cambridge Prisms: Coastal Futures, 1, e15, 1–12 <https://doi.org/10.1017/cft.2023.4>

Chuenpagdee, R. (2019). Report, 3WSFC, A time for transformation, pp 42–45. http://aquaticcommons.org/27040/1/Sam_81_art11_3WSFC_Ratana%20_Chuenpagdee.pdf. Accessed 24 July 2021.

Cooke, S. J., Allison, E. H., Beard, T. D. Jr., Arlinghaus, R., Arthington, A. H., Bartley, D. M., Cowx I. G., Fuentesvilla, C., Leonard, N. J., Lorenzen, K., Lynch, A.J., Nguyen, V. M., Youn, S-J., Taylor, W.W., Welcomme, R. L. (2015). On the sustainability of inland fisheries: finding a future for the forgotten. *Ambio* 45(7):753–764. PMID: 27312662 PMID: PMC5055481. <https://doi.org/10.1007/s13280-016-0787-4>.

Exploring the human rights-based approach in the context of the implementation and monitoring of the SSF Guidelines. Workshop proceedings, 24–26 October 2016, FAO Fisheries and Aquaculture Proceedings No. 53. United Nations Food and Agriculture Organization, Rome

FAO. (2022). Capture fisheries production. In: The state of world fisheries and aquaculture 2022. <https://www.fao.org/3/cc0461en/online/sofia/2022/capture-fisheries-production.html>

FAO. (2021). Small-scale fisheries and the human right to adequate food – Making the connection: exploring synergies in the implementation of the SSF Guidelines and the Right to Food Guidelines. Rome. <https://doi.org/10.4060/cb4939en>

FAO (2015). 'Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (the SSF guidelines)'. Faye, M.L., McArthur, J.W., Sachs, J.D., Snow, T. (2007). The challenges facing landlocked developing countries. *J Human Dev*, Taylor and Francis, on line, pp 31–68. <https://doi.org/10.1080/14649880310001660201>. Accessed 15 Jan 2021.

Funge-Smith, S., Bennett, A. (2019). A fresh look at inland fisheries and their role in food security and livelihoods. *Fish Fish* 20:1176–1195. <https://doi.org/10.1111/faf.12403> T. B. Gurung 349.

Gurung, T.B. & Bhattarai, C. (2024). and Policy Frameworks of Small-Scale Fisheries in Nepal: A Move in the Right Direction. **In:** Julia Nakamura et al. (Eds): Implementation of the Small-Scale Fisheries Guidelines, (Chapter 10), MARE Publication Series, Vol. 28, 978-3-031-56715-5, 609206_1_En.

Gurung, T.B. & Bhattarai, C. (2024). and Policy Frameworks of Small-Scale Fisheries in Nepal: A Move in the Right Direction. **In:** Julia Nakamura et al. (Eds): Implementation of the Small-Scale Fisheries Guidelines, (Chapter 10), MARE Publication Series, Vol. 28, 978-3-031-56715-5, 609206_1_En.

Exploring Challenges of “Blue Justice” in Landlocked Mountainous Countries: The Case of Nepal. In: Jentoft, S., Chuenpagdee, R., Bugeja Said, A., Isaacs, M. (eds). *Blue Justice*. MARE Publication Series, vol 26. Springer, Cham. https://doi.org/10.1007/978-3-030-89624-9_18

The Beauty and the Bounty

Ratana Chuenpagdee, TBTI Global

Nepal is among the top tourist destinations in the world, attracting a large number of visitors each year. Many head for the ‘mountains’, or at least for the view of them. When we said we were going to Bharatpur, people thought that we wanted to visit Chitwan National Park, well-known for rare mammals, like one-horned rhinos and Bengal tigers. We had a better idea, and a much more exciting agenda. We visited the Agriculture and Forestry University (AFU) and spent a few days, between 17-21 of February, 2024, working with a group of undergraduate and graduate students who are studying fisheries and aquaculture at AFU, as well as other young researchers and early career scientists interested in small-scale fisheries.

In December of 2023, a call for contribution for the new TBTI E-book focusing on small-scale fisheries and small-scale fish farming in Nepal was launched. The rationale was clear. Inland fisheries are the more marginalized and ignored of all the small-scale fisheries. The E-book is intended to change that, by showcasing the breadth and depth of small-scale fisheries and small-scale farming in Nepal. I traveled to AFU with Dr. Svein Jentoft, professor emeritus of UiT the Arctic University of Norway and TBTI co-founding member. Our job was to provide feedback to what the group is planning to do in this book, which is coordinated by a long-term TBTI member, Dr. Tek Bahadur Gurung, who has brought together a young and impressive editorial team, namely Ms. Ranju Ghimire, a Master’s student at AFU, Ms.

THE BEAUTY AND THE BOUNTY AT RISK

Nelson Pokhrel, a PhD student and a Fishery Development Office, and Mr. Thaneshwar Bhandari, a PhD student and an Assistant Professor, Tribhuvan University.

The stories we heard from the students and researchers during the visit did not disappoint. Although this is the first opportunity for many of them to participate in such a publication, they were able to make great presentations, based on the submitted abstracts. Inspired by others, some (who did not submit an abstract) stepped up to the podium, and shared their stories, about growing up in the fishing family and the fishing communities, and what motivated them to study fisheries, when they could have become a doctor or a veterinarian.



Group photo taken at AFU. 2024. Credit: TBTI Global

The students were in awe with what they heard from us, about how their work will now be part of a global effort of TBTI (<https://tbtiglobal.net/>) to elevate the profile of small-scale fisheries of the world, making visible the beauty and the bounty of small-scale fisheries of Nepal. We, on the other hand, were very impressed with the enthusiasm and passion that the young researchers expressed about doing more for small-scale fisheries of Nepal. They recognize that something must be done to improve the livelihoods of

THE BEAUTY AND THE BOUNTY

small-scale fishers and small-scale farmers, especially the most marginalized ones, including the Indigenous and the ethnic minorities. Now they know that they can be part of the change with their contribution to the E-book.

Sitting in the classroom and talking about small-scale fisheries and what to write about them is one thing, seeing what they look like and listening to the stories told by them is another. Standing at one of the tributaries of the Narayani River, we talked with fishers, men and women, who have been fishing in that area for decades. Many of them expressed concerns about the degrading resources and the ecosystem, linking also to other activities taking place in the area, like river bed extraction that we could see across the channel. A woman from the community said to us after a while: “*don’t just talk to us or write about us, do something*”.



A visit to Narayani River. 2024. Credit: TBTI Global

She is certainly right. We documented their stories in a short video, and released it on Feb 20th the World Day of Social Justice, as part of TBTI Blue Justice – Alert to Action global campaign (<https://www.youtube.com/@TooBigToIgnore/playlists>). That was a very small first step, which will be

followed by the next big one, which is the E-book that we hope to share at the International Conference on Aquaculture and Fisheries, hosted by AFU in October this year (<https://nefis.org.np/>).

The beauty and the bounty of small-scale fisheries and small-scale farming of Nepal may be at risk, but with the young energy, and the support of the professors and senior researchers at AFU and across the country, there is no reason to doubt that something could, and would, be done.

Small-Scale Fisheries in the Face of Climate Change: A Transformation from Subsistence Strategies to Conservation Practices

Mohammad Saddam Hussain

Nepal Agricultural Research Council, Nepal

Community Responses to the Bote
Livelihood Crisis and Cultural Erasure in
Chitwan National Buffer Zone
Settlements

Bryce Williams

Harpan Fewa Fishery Cooperative of Pokhara Valley: Inspiring Success Story of Ethnic Fishers for Other Traditional Small-Scale Fishers

Md. Akbal Husen*

Tek Bahadur Gurung

Corresponding author: akbalhusen@yahoo.com

What Kind of Development?

Bidhya Rai

Small-Scale Fisheries: Catalysts for
Poverty Reduction, Food Security,
Sustaining Livelihoods and Ecosystem
Resilience

Tek Bahadur Gurung

Lutheran World Relief, Corus International

Lalitpur, Nepal

Notes on Status of Small-Scale Fisheries in Begnas Lake, Nepal

Dylan Rodgers
Naresh Khanal
Rabina Shahi
Alisha Basnet

Traditional Small-Scale Fishers and Their Livelihood around Khimti Valley, Tamakoshi River in Nepal

Rakesh Kumar

Yadav Tribhuvan University, Nepal

Small–Scale Fishing Communities,
Fishing Gears and Fishing Methods
around Koshi Barrage areas, Koshi
Pradesh, Nepal

Nelson Pokharel
Tek Bahadur Gurung

Importance of Fish Conservation and Ways to Minimize Fish Biodiversity Loss from Man-Made Dams

Raj Kapoor Napit

Overview of Small-Scale Fisheries in Nepal

Sarita Gautam
Sunila Rai
Saroj Yadav
Akbal Husen
Santoshi Shrestha

My Childhood Fishing Memories in Hill Streams of Mid Hills of Nepal

Durga Mani Gautam

Agriculture and Forestry University, Nepal

Women Fishers in Dry Fish Selling: A
Case From Koshi Tappu Buffer Zone Area,
Sunsari, Koshi Province

Nelson Pokhrel
Tek Bahadur Gurung

Capture Fishery in Bote Community of Chitwan

Rigan Ghale*

Chandra Kishor Chaudhary

*Corresponding author: riganghale.np@gmail.com

Fish Diversity and Livelihood Status of Fishers at Aandhikhola River, Syanjga

Naresh Khanal*

Rabina Shahi

Alisha Basnet

*Corresponding author: nareshkhanal951@gmail.com

Sustainability of Malekhu Fish Eatery Market: Questions for the New Generation

Divyanshu Shrestha
Asdeep Silwal
Pravas Kumar Mandal

Women Empowerment in Small-Scale Fisheries

Sumitra Tamang

Agriculture and Forestry University

Email: sumitrapakhrin63@gmail.com

Women empowerment has positive attributes for social welfare by improving wellbeing, food, nutritional and financial security. The principles of women empowerment is equally important in small-scale fisheries for gender equality and improving food security, poverty reduction, and achieving Sustainable Developments Goals of the UN. In this context, in this short essay the roles how women in small-scale fisheries can support family and community wellbeing will be elucidated. Empowering women in small-scale fisheries, especially in education sector, would unlock the full potential of small-scale fishing communities for achieving the goals of poverty reduction, food, nutritional security, social justice and human rights.

Women empowerment in small-scale fisheries is a key aspect for achieving gender equality envisioned by Sustainable Development Goals (SDGs). According to the Food and Agricultural Organization (FAO 2005-2011), “Artisanal, or small-scale fisheries, are traditional fisheries involving fishing households (as opposed to commercial companies), using relatively small amount of capital and energy, relatively small fishing vessels (if any), making short fishing trips, close to shore, and mainly for local consumption.” Indeed,

this definition given by FAO failry depicts the small-scale fisheries exist in Nepal. The small-scale fishing communities in Nepal are highly deprived and poorest of the poor communities. Since ancient times, some of them have had their own languages tradition and culture. The women in small-scale fisheries play important roles, although as in many other occupations, their contribution is unnoticed, considered traditionally 'not important, does not signify' and insubstantial. Therefore, women roles largely remain hidden.

My aim in this essay is to elucidate the significance of women in small-scale fisheries for women empowerment. I will attempt to focus on the role women play and its potential positive impact on both local economies and community wellbeing.

In Nepal, women play a significant role in small-scale fisheries, particularly in inland fisheries. Their contributions include involvement in fishing activities, processing, marketing and supporting roles in fishery-related business. Women often engage in fish processing, such as drying and smoking fish, which are essential for value adding and marketing. Additionally, women are involved in the collection of aquatic resources like snails, crabs and aquatic plants, which contribute to their household food security, income and nutrition. To extend it, more support on women education, training, and financial resources should be offered, which would enhance their skills and capabilities to great extent. That will contribute effectively to the small-scale fisheries, fisheries industry, community, nation and international arena.

Empowering women in small-scale fisheries could involve gender specific challenges. Implementing gender-inclusive policies and promoting equal opportunities helps women flourish. Community based initiatives that involve women in decision making helps in long term viability of fisheries resources. Recognizing and valuing the work of women is essential for the success of small-scale fisheries. When women are empowered, they bring solutions to the challenges faced by the small-scale fishing industry, ultimately improving socio-economic conditions and enhanced food security.

Inclusive empowerment of women in small-scale fisheries is a fundamental step towards achieving SDGs. By acknowledging and supporting the roles of women in various value chains of the fisheries sector, we can unlock the full

potential of small-scale fishing communities. Investing in women's education, providing access to resources, and promoting gender-inclusive policies can help small-scale fisheries to flourish. The journey towards SDGs in this sector is incomplete without recognizing the invaluable contributions of women in small-scale fisheries for social justice and human rights.

Acknowledgment

I would like to thank TBTI Global for providing such an opportunity to exploring our thoughts on small-scale fisheries. I am indebted to Professors Svein Jentoft, Ratana Chuenpagdee and Tek Bahadur Gurung for guidance and support to improve this essay.

References

FAO. © 2005-2011. Fisheries and Aquaculture topics. Small-scale and artisanal fisheries. Topics Fact Sheets. Text by Jan Johnson. In: FAO Fisheries and Aquaculture Department [online]. Rome. Updated 27 May 2005. [Cited 19 November 2011]. <http://www.fao.org/fishery/topic/14753/en>

Transition from Small-Scale Fishing to Small-Scale Aquaculture Enterprise Pursuit

Pravas Kumar Mandal
Divyanshu Shrestha
Asdeep Silwal

Abstract

This is a thread of a story where small-scale fishers, being experts in handling fish, and having traditional understanding about the fish behavior through generations can capitalize that knowledge successfully as aquaculture entrepreneurs. The present story is based on how a fisher has successfully transformed to an aquaculture entrepreneur. However, all fishing people are not that lucky because majority of traditional fishers are landless; they are mostly nomads, usually visiting rivers, lakes, wetland, marshes, and canals in search of fishing grounds so they can fulfill the dire need of securing the food, clothes and shelter for their families.

Introduction

Rampura is a hamlet in Nepal's Saptari District, in the southeastern part of Nepal. For years, the residents of Rampura relied on traditional, small-scale fisheries as their primary source of food and revenue. However, as the population of Nepal increased, and environmental changes due to several

reasons affected the rivers, the once-abundant fish supplies began to decline. Mr. Lal Bahadur Mukhiya, a young fisher, observed his father Mr. Satya Narayan Mukhiya with anxiety as his catches became smaller and less regular over time. Satya, who used to be able to provide for his family by fishing in the local river Ghordaha, is now unable to do so owing to dwindling fish stocks and low yields. Going through the changes, Mr. Lal became eager to find a solution, so he began investigating alternate techniques of fish farming. Lal set out on a quest to shift from traditional fishing to small-scale aquaculture with the aid of local experts and some initial money from a government-cooperatives project promoting sustainable agriculture.

Transition to be a small-scale aquaculture entrepreneur

Mr. Lal encountered various hurdles when setting up his first fishpond by leasing a tiny parcel of land near the hamlet. He was determined to change his profession from a traditional fisher to small-scale aquaculturist. Every stage provided an opportunity to learn, from water quality management to the nutritional requirements of various fish species. However, with effort and devotion, Mr. Lal quickly saw results. Adapting these aquaculture procedures resulted in increased returns, allowing his family members to meet their demands. Mr. Lal often credits aquaculture as a vital aid in his children's schooling. Furthermore, Mr. Satya appears to be delighted and satisfied to see his son following in his footsteps, albeit in a more convenient and modern manner. As news spread of Mr. Lal's successful business, other Rampura fisher took note. Inspired by his example, Mr. Chandan Mukhiya, Mr. Upendra Sada, and Mr. Bindeshwar Sada began experimenting with aquaculture techniques, tailoring them to their own requirements and resources. Rampura hamlet gradually evolved into a small-scale aquaculture powerhouse. There was now fish production from ponds, giving a consistent source of healthy food to the local population. This transition not only helped to relieve strain on natural fish sources, but it also opened up new possibilities for economic growth and self-sufficiency.

Today, as Mr. Lal gazes out over his flourishing fishponds, he muses on

the road that got him here. He has progressed from a struggling fisher to a pioneer of sustainable aquaculture, and he understands that the future of Rampura resides in innovation and transformation. Furthermore, as the sun rises behind the gorgeous Himalayas, throwing a golden glow over the peaceful waters, Mr. Lal is filled with satisfaction knowing that he has helped shape his future.

However, there have been a few setbacks along the way owing to a lack of resources, funding, and understanding. Most new aquaculture operators lease other people's ponds, which are round or square in form and have a depth of 4-5 metres. These ponds are difficult to modify with limited money and skills. People appear to have limited information not only regarding the design and building of ponds but also about many other technologies, market, feed, fish disease management, water quality and financial literacy for efficient aquaculture. Mr. Lal, a model farmer in Rampura, said that most novice aquaculturists come to him with questions regarding the most successful pond design and building techniques.

To solve these issues, all farmers should be educated on management methods before entering the aquaculture industry. Design and construction should be prioritized from the start. Rectangular ponds with depths ranging from one to two metres should be favoured over deeper circular and square ponds. Unlike riverine fisheries, aquaculture operations need comprehensive management packages such as feeding, fertilization, liming, harvesting with which traditional fishers are unfamiliar.

Conclusion

There could be several such success stories of small-scale fishers turning into aquaculture entrepreneurs due to the growing market for fish consumption. However, the majority of the traditional fishing people are poor, disadvantaged, and marginalized. Maybe all of them do not have such an advantage as the majority are landless. The present story depicts that if these deprived fishers would be presented with opportunities, they could become successful entrepreneurs. Therefore, the policy makers are urged to develop plans

through which deprived and highly marginalised fishers could really improve their livelihoods, achieving better life quality and educational opportunities.

Acknowledgements

We express our thanks to our professors at the AFU. We are also thankful to Professors Svein Jentoft and Ratana Chuenpagdee for their guidance and support.

Fish Stock Assessment and its Management Practices in Fisheries Reservoirs of AFU

Rejina Neupane, Sujata Dhakal & Sunila Rai
Agriculture and Forestry University, Nepal

A Tragic Story of an Old Fisher: Livelihood Risk of Life and Death

Arjun Sanjyal

Email: sanjyalarjun04@gmail.com

This is a story of a 76 years old fisher called Baliya Tharu. 'Baliya' means 'strong and powerful' in Nepali language. He had a wife, three sons and one daughter. The main occupation of his family was fishing in nearby Bheri River. Baliya went fishing in morning and at night. He and his sons used to fish in one of the streams of Bheri called Nikash Khola (Rivulet). At times, Baliya and his sons reached Karnali River to fish.

Among the community members, Baliya Tharu was the oldest fisher. He was a very brave and strong person. He was hard-working and could work hours without tiring. He was a symbol in his community, thus all other youngsters used to visit him to learn about the art of handling fish and fishing tricks. He was also an immense and valuable source of knowledge on fishing, crossing rivers, seasonality of fish types and migration patterns.

His wife's role was usually to take care of every day's life chores at home. She was also a self-trained net mender for her husband and sons. In her free time she grew vegetables for her family near her hut. In addition, she went to gather gastropods (Ghongi), bivalve mussels (Seepi), shrimp (Jhinga), crab (Gangata) and small fish in ditches, waterlogged fields and occasionally in wetlands for snacks and Chatani (sauces or dressing, ketchup or strong relish food) and other traditional dishes. She also collected apple snails from nearby

wetlands, which supported the family's nutrition security. Sometimes, she would go fishing with her sons and husband.

One day the local government started a big fish market in a nearby town. With this market all fishers became very happy as they hoped they could sell their fish there more easily. Anticipating it would be easier to sell the fish in the new market, Baliya Tharu worked harder to catch the fish in the local rivers, big rivers, and streams. Early in the morning Baliya Tharu and his family went out to reach the Bheri River. They caught some fish in the Bheri River but the catch was not as high as they anticipated so they continued to fish and decided to stay the whole night to do the fishing overnight.

After having some food and rest, they started the night fishing. When they had reached the bank of the river, it started to rain. They ignored it and continued fishing. They have hauled more fish than they have previously. They slowly realized that the water level in the river started to increase due to the rain around the catchment areas of the river. However, his sons wanted to take a slightly more risk and haul a bit more fish. The old fisher warned them to return back to their cottage because the rain intensity was increasing and the river level was getting increasingly high, meaning that at any time a flood may rush in. Likely because of the fast-flowing river's gurgling and roaring, his sons could not hear well. His wife and sons continued fishing at the bank of the river. Now the river was flowing fast. They said they will come back after a while.

Suddenly, the flow of the river increased beyond expectations with river water gushing up, probably caused by an unexpected cloud burst in upper catchment with heavy lightning. This cloud burst brought heavy rain pour and a sudden splash flood. Within minutes the large splash flood swept away the dream of the old fisher Baliya Tharu. His three sons and wife had been swept away. There was nothing left except the regret and grief in his life now. Not only did his family die but the dream of the whole family was swept away by the splash flood. He returned back alone to his cottage blaming nature and God. His whole community was shocked and lurched into sadness. The poor old man cried out about the injustice done to him. He asked himself an important question of "*How do I survive alone?*" The local government did

THE BEAUTY AND THE BOUNTY AT RISK

not provide him any support because there was no such provision to support local small-scale fishers who usually are the poorest of the poor of Nepal. Local government representative only consoled the old fisher that they would try to find the bodies of his wife and sons. The old fisher returned back to his hut with a heavy heart about his fate, destiny, and injustice from both the nature and the government. This 'Baliya', a once strong and powerful fisher suddenly became weak, fragile and sick, awaiting his demise.

An Unknown but Pleasant Destiny as a Fisheries Scientist Representing Second Generation of a Fish Farmer Family

Saleena Pandey

Email: salinapandey1000@gmail.com

This essay is written based on a true and lived story of mine. My name is Salina Pandey and I was born in 2003 in a wonderful family. I am now just a 20-year-old girl living her life to the fullest and wanting to live like this forever. I was born and raised in a countryside area (in a village) that is near to Nepal's oldest national park, the Chitwan National Park. I feel like I'm the luckiest girl alive to follow my father's passion and it makes me want to do more for him as well as for myself. My story defines my father's life more than my life because his steps led me to this place. I am very much grateful to him. My father was just wondering what to do in his life, having already tried many things. Then, a small pond, which he made himself in order to retain the well water, gave him a lifelong work. He cultured some of locally available fish in that pond and was fascinated by it so he started gathering knowledge about this sector. This all started happening when I was three years old. Since then, being my father's daughter and following in his footsteps, I unknowingly got involved in this as well.

He started cultivating fish in a huge land area near our home and made a 1,800 sq feet pond in the backyard of our house, gradually exploring the aquaculture sector more. Recalling my memories, I find myself following

him every time he went to the backyard. I call this a destiny as I am currently pursuing what my father practically did over his lifetime. As a child, my brother and I were immensely fascinated to see so much water. I recall feeding the fish, asking why they come up to the surface from time to time, how they eat, even asking some stupid questions like where are their parents. Fast-forward to today, where I ask and even advice my father to do this and that, I feel like I have grown up and I am in a way also serving the aquaculture sector. My father started from intensive to extensive farming over his 18-20 years in this field. He was also involved in feed factories. As his daughter and a student of fisheries, I am so proud of him for his each and every work. His hard work has been a huge inspiration for me to do more than him in this sector. Aquaculture is now one of the hugely growing agricultural sectors in Nepal and is getting noticed by farmers.

When I was young, barely a child, I loved fishing, harvesting, feeding and catching those fish. Looking back, I think of how beautiful it was to just know about these little things and how lucky I am to grew in that environment. I has me wondering: all those years ago when I was just unknowingly involved to nowadays with me being fully engaged and pursuing this career. Indeed, I am amazed by this destiny.

Fishing Gears Used by Fishing Community in Chitwan

Asdeep Silwal
Pravas Kumar Mandal
Divyanshu Shrestha

Riverside Realities: Tribeni's Contribution On Communities

Ija Dhakal

Local Indigenous Species of Fish caught by Ethnic Community at Ghinaghat, Singhiya Biratnagar, Nepal

Sanskriti Koirala

Small-scale fisheries are termed as capture fisheries, which are generally performed by family, rather than commercial units. They require very low capital, labour and investment. Nepal is a developing, largely rural country. Small-scale fisheries with small quantities of catches are quite famous all around the country. Among all the species around the world, Nepal has 252 species of fishes. Those species have great potential for developing aquaculture, along with small-scale fisheries.

I am Sanskrit Koirala, doing a 4th semester of the Bachelor of Science at the Agriculture Forestry University. I am originally from Biratnagar of Morang District in Nepal. Morang district has an area of 1.855 km² with an altitude ranging from 60-2,410 m mean sea level. As a student of fisheries, I decided to analyze the potential of small-scale fisheries in my own community in Morang District. As per the Journal of 2017 by Our Nature, there are 118 species of fish in Morang district. Based on this information, I aimed to find out of the total fish reported in Morang, including how many of them are there and which ones are most dominant. As a student with limited resources and capital, to cure my curiosity and utilize my vacations, I went to Ghinaghat, Singhia river near Puspupal chowk in 2024, during the months of October and November. During my observations, I found some local ethnic people

who were catching indigenous fish in nearby ditches, swamps and wetlands. They were engrossed in catching fish at around 2 pm in the afternoon.

Mr. Fucha Mala Mukhiya, an old man of around 68 years old, was catching fish using Chhati jal, which is a special type of net known as cast net. He had a mud pot with him to store the caught fish and a beam balance to take the measure of weight of fish and sell instantly, if possible. He has been in this profession for 38 years, and the fishing has sustain the livelihoods of him and his family members. I was very excited for the opportunity to meet and talk to Mr. Mukhiya. Next day, I went there again and met a group of fishers whose whole family were involved in small-scale fisheries. Mr. Papu Shahni, along with his family members, catches fish using cast nets called Mauwa jal in local language. They catch a maximum of 5-6 kg per day. They said that the selling price of the fish in the market was about 1,000 NPR per kg of fish.

Overall, it seemsthey earn at least around 5,000 NPR per day, which in layman's calculation goes around about $5.000 \times 30 = 150,000$ NPR. They sell some in the market and some to local households for consumption. Generally, it was local indigenous fish such as catfish from the Siluridae family that was a kind of a reward for them. Other fish species which were mostly caught and contributed to the livelihoods of poor fishers were *Puntius Spp*, one of the most common fish in the capture fishery. Other major fish which were caught in higher frequency with the gears the traditional fishers were using included *Puntius Lepidoichthys guntea*, *Ompak bimaculatus*, Rewa, Tengra, Wallogo attu, *Macroganathus spp*, and Kalbasu.



Figure 1. Mr. Mukhiya, a local fisher, with his net catching fish in Morang District. 2023. Credit: Sanskriti Koirala.



The stories we heard from the students and researchers during the visit did not disappoint. Although this is the first opportunity for many of them to participate in such a publication, they were able to make great presentations, based on the submitted abstracts. Inspired by others, some (who did not submit an abstract) stepped up to the podium, and shared their stories, about growing up in the fishing family and the fishing communities, and what motivated them to study fisheries, when they could have become a doctor or a veterinarian.



TBTI GLOBAL BOOK SERIES

 **TBTI**
GLOBAL
Small-Scale Fisheries are Too Big To Ignore