



INTERNATIONAL YEAR OF  
ARTISANAL FISHERIES  
AND AQUACULTURE

2022



*Small-scale Fisheries of Southeast Asia*

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A Regional Digest



**Southeast Asian Fisheries Development Center**

## Preparation of this Document

The “Small-scale Fisheries of Southeast Asia: A Regional Digest” was developed by the SEAFDEC Secretariat and Departments through a series of consultations to serve as a demonstration of SEAFDEC’s celebration of the International Year of Artisanal Fisheries and Aquaculture (IYAFa) 2022. This document is part of the process for SEAFDEC highlighting what have been done relevant to small-scale fisheries in the region. This publication is a compilation of the major outputs and outcomes of SEAFDEC projects and activities related to the small-scale fisheries and aquaculture since the 1960s.

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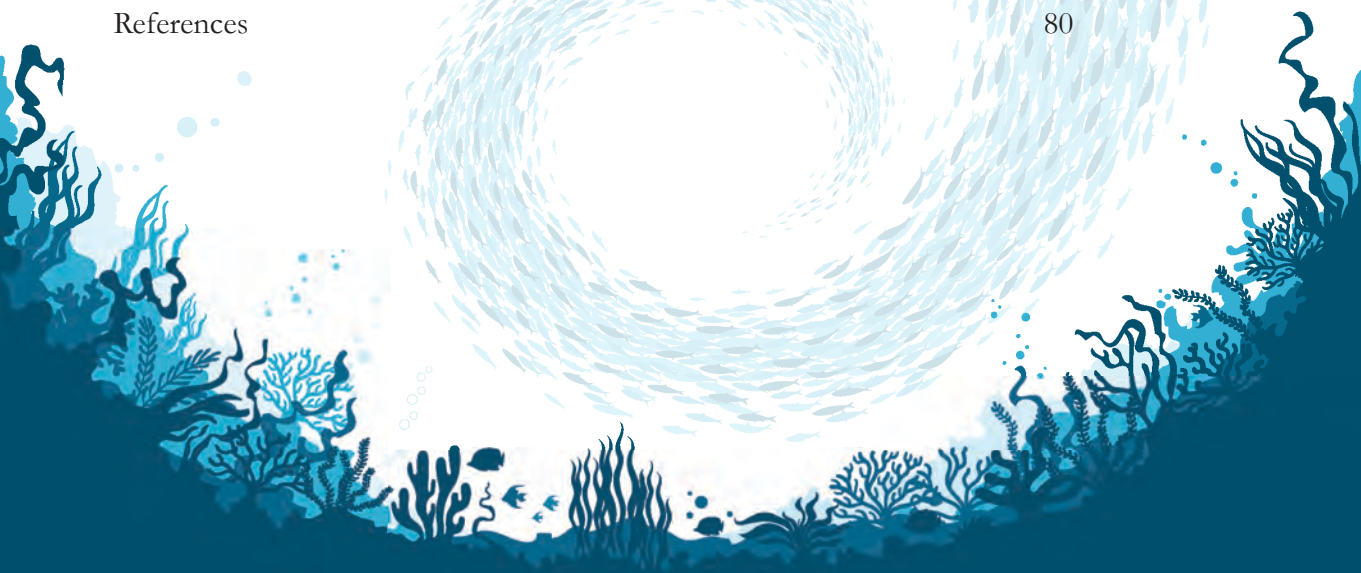
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# Table of Contents

Executive Summary	5
List of Abbreviations	7
Message from Chairperson of SEAFDEC Council (2021–2022)	9
Message from Chairperson of SEAFDEC Council (2022–2023)	11
Message from Secretary-General of SEAFDEC	13
Chapter 1: Small-scale fisheries profile in the region	15
Chapter 2: SEAFDEC journey in the development of sustainable small-scale fisheries and aquaculture	23
I. Small-scale fisheries management and aquaculture	25
II. Resource enhancement	33
III. Safety at sea and adaptation to climate change	36
IV. Post-harvest and marketing	39
Development of key important policies and guidelines on small-scale fisheries	44
Chapter 3: Outlook	45
Chapter 4: Recognition of Small-scale Fisheries and Aquaculture	47
Chapter 5: Milestones of SEAFDEC in promoting sustainable development of small-scale fisheries and aquaculture in the Southeast Asian region in 1967–2024	69
Chapter 6: Sites of projects on small-scale fisheries and aquaculture implemented by SEAFDEC	75
List of Contributors	79
References	80





## Executive Summary

This publication “Small-scale Fisheries of Southeast Asia: A Regional Digest” highlights the key achievements and lessons learned as well as provides strategic outlook and actions to be undertaken toward sustainable development of small-scale fisheries in the region under the framework of the Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region Towards 2030 as well as the FAO Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines).

In the Southeast Asian region, most fishers engage in small-scale fishing operations in the pre-harvest, harvest, or post-harvest areas that are fundamental to the social and cultural structures of the fishing community. Such operations in “multiuse, multiuser” coastal and inland resources compete with other sectors leading to habitat degradation and resource depletion. SEAFDEC, therefore, had developed and promoted several policy recommendations, guidelines, programs/projects to make sure that such diverse activities are sustainable. This includes the regionalization of the Code of Conduct for Responsible Fisheries that took into consideration the specific regional concerns of Southeast Asian fisheries and came up with a series of Regional Guidelines for Responsible Fisheries in Southeast Asia.

In addition, capacity building for concerned human resources, ecologically sound measures such as the installation of artificial reefs, mangrove reforestation, coral plantation, fish passage construction, and good aquaculture practice. On maintaining the safety and quality of fish and fishery products, SEAFDEC initiates improved various traditional methods in terms of safety and quality and in the technical aspects to make sure that processing could be easily managed under local conditions requiring minimal inputs. SEAFDEC also formulated fisheries policies to ensure that gender equality and equity are being fostered by highlighting the roles and well-being of women in the region's small-scale fisheries and aquaculture.

In the last part of this publication, the messages of the SEAFDEC Council Directors articulated the importance of small-scale fisheries in the respective SEAFDEC Member Countries. Moreover, the milestone of initiatives, programs and projects, and policy guidelines developed by SEAFDEC were highlighted. The relevant project sites on small-scale fisheries and aquaculture in SEAFDEC Member Countries were also shown on the map.



# List of Abbreviations

AMAF	ASEAN Ministers on Agriculture and Forestry
AMSs	ASEAN Member States
AQD	Aquaculture Department of SEAFDEC
ARFADs	Artificial Reef Fish Aggregating Devices
ASEAN	Association of the Southeast Asian Nations
BOBLME	Bay of Bengal Large Marine Ecosystem
CBFM	Community-based Fisheries Management
CBRE	Community-based Resource Enhancement
CCLA	Coastal Cambodia Local Alliance
CCRF	Code of Conduct for Responsible Fisheries
CFG	Community Fisheries Group
CFRM	Community Fishery Resource Management
COFI	Committee on Fisheries
CORIN-Asia	Asian Coastal Resources Institute Foundation
DA-BFAR	Department of Agriculture- Bureau of Fisheries and Aquatic Resources
EAFM	Ecosystem Approach to Fisheries Management
EMS	Early Mortality Syndrome
FADs	Fish Aggregating Devices
FAO	Food and Agriculture Organization of the United Nations
FAO/RAP	Food and Agriculture Organization of the United Nations /Regional Office for Asia and the Pacific
FEDs	Fish Enhancing Devices
FMP	Fisheries Management Plan
FOVOP	One Village, One Fisheries Product
GDP	Gross Domestic Product
GMP	Good Manufacturing Practice
GMP/SSOP	Good Manufacturing Practice/Sanitation Standard Operating Procedure
GOJ-TF	Government of Japan Trust Fund
HACCP	Hazard Analysis Critical Control Point
HRD	Human Resource Development
IDB	Islamic Development Bank

# List of Abbreviations

IDRC	International Development and Research Center
IFRDMD	Inland Fishery Resources Development and Management Department of SEAFDEC
IUU	Illegal, Unreported and Unregulated
IYAFA	International Year of Artisanal Fisheries and Aquaculture
JICA	Japan International Cooperation Agency
LEAD EAFM	EAFM for Leaders, Executives and Decision Makers
MCS	Monitoring, Control and Surveillance
MFRD	Marine Fisheries Research Department of SEAFDEC
MFRDMD	Marine Fishery Resources Development and Management Department of SEAFDEC
MOA	Memorandum of Agreement
MOSRA	Molocaboc Sea Ranchers Association
myKP	myKomuniti Perikanan
NGOs	Non-governmental Organizations
PPE	Pre-processing Establishments
R&D	Research and Development
RES&POA-2030	Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region Towards 2030
SDF	Sustainable Development Foundation
SEAFDEC	Southeast Asian Fisheries Development Center
SFA	Singapore Food Agency
SMEs	Small and Medium-sized fish processing Establishments
SSF	Small-scale Fisheries
SSFA	Small-scale Fisheries and Aquaculture
SSF Guidelines	FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication
TD	Training Department of SEAFDEC
TPE	Traditional fish Products processing Establishments
UN	United Nations
Kcal/kg	Kilocalories/kilogram



# Message from the Chairperson of SEAFDEC Council (2021–2022)



As the Chairperson of the SEAFDEC Council for 2021-2022 and on behalf of Lao PDR, I would like to take this opportunity to extend our utmost appreciation and congratulations to SEAFDEC for the works that it had undertaken during the past decades and plans for the coming years. SEAFDEC is the sole regional fishery organization that has been assisting the countries in the Southeast Asian to achieve sustainable development of fisheries.

Although Lao PDR is a land-locked country, it is rich in natural resources such as rivers, especially the Mekong and its tributaries, and reservoirs and hydropower dams which are potential for inland fisheries and aquaculture development. The Department of Livestock and Fisheries of the Ministry of Agriculture and Forestry has developed its own specific strategic plan to support the national socioeconomic development including food security, poverty alleviation, and sustainable environmental management. Also, the Fishery Management and Development Project was revised to harmonize with the 2009 Fisheries Law bringing fisheries management within one cohesive framework.

The Department of Livestock and Fisheries has actively participated in the implementation of several projects in the areas of utilization of water resources. The Department also actively participated in several projects and activities organized by the SEAFDEC *e.g.* promoting the concepts of community-based fisheries management (CBFM), co-management, and ecosystem approach to fisheries management (EAFM) through human resources and institutional capacity building activities. The sustainable management of reservoir and river fisheries would benefit the fisherfolk in rural areas and implementation of regional policies in that the country would continue to affect the lives of people in the rural areas.

We recognize that ASEAN and SEAFDEC have made significant progress in the implementation of the Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region Towards 2030 to support sustainable fisheries development and food security in the region. Addressing the deteriorating state of the fishery resources and emerging fisheries-related issues during the past decade would require strong coordination, collaboration, and cooperation among all stakeholders, including government institutions, organizations, private sector, academia, local community, local organizations, and international agencies.

As SEAFDEC collaborates with the partners *i.e.* FAO in the celebration of the International Year of Artisanal Fisheries and Aquaculture (IYAFa) 2022, Lao PDR together with the other SEAFDEC Member Countries has been actively supporting this important event and we are now taking broad steps towards the implementation of the Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region Towards 2030 to ensure food security and improve livelihood of people dependent on fisheries.

Finally, our appreciation is also extended to the organizations and agencies collaborating with SEAFDEC for providing generous support and cooperation throughout the past decades. Your continued support and sustained partnership allowed SEAFDEC to implement activities that are beneficial to the countries in the region.



*Mrs. Vilayphone Vorraphim*

Director-General of the Department of Livestock and Fisheries and  
Chairperson of the SEAFDEC Council for 2021–2022

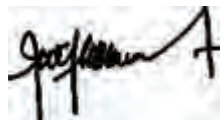
# Message from the Chairperson of SEAFDEC Council (2022–2023)



Malaysia recognizes the importance of small-scale fisheries and aquaculture as they play a crucial role in supporting food security, poverty eradication, equitable development, and local resource utilization. In 2020, the capture fisheries of the country have contributed 1.38 million t (78.0 %) to the total of 1.8 million t fisheries production, followed by aquaculture, 400,017 million t (22.4 %), and inland fisheries 5,625 million t (0.3 %). Small-scale fisheries contributed to about 30.0 % of total fisheries production. Like in other countries, the small-scale fisheries in Malaysia are also facing many challenges and are affected by the rapid coastal development, instability of market price, and climate change. On the other hand, for aquaculture, the disease has been one of the major concerns in addition to the accessibility to high-quality broodstocks and fry, and expensive formulated fish feeds which cost almost 70 % of the operation cost. Thus, Malaysia will continue to improve the development of strategies in order to address these issues in the future and improve the livelihood of small-scale fishers and fish farmers.

In the National Agrofood Policy 2.0 (2021–2030), small-scale fisheries and aquaculture are given priorities whereby one of the strategic objectives is to increase the income of the target groups. Besides that, various strategies also have been formulated in the Strategic Plan (2021–2030) of the Department of Fisheries (DOF) Malaysia which targets the small-scale fisheries and aquaculture in Strategy 3 by encouraging them to generate secondary income through economic activities. In addition, the development of fisheries and aquaculture economic communities have been emphasized under the Strategy 2. The DOF Malaysia also has introduced a program for fishers and communities engaged in fisheries activities as their source of income, known as myKomuniti Perikanan (myKP) in 2018. This program aims to build and strengthen the cooperation between stakeholders and the DOF Malaysia.

In supporting FAO, especially on the SSF Guidelines, Malaysia is in the midst of translating the document into the local language in order to disseminate it to the target groups. In conjunction with the International Year of Artisanal Fisheries and Aquaculture (IYAFA) 2022, Malaysia would like to congratulate FAO for their tremendous hard work and being the lead agency to celebrate the year in collaboration with other relevant United Nations organizations and bodies. Malaysia hopes that all the activities and programs planned for IYAFA 2022 could be executed successfully. This will be an opportunity to accentuate the importance of small-scale artisanal fisheries and aquaculture to our food systems, livelihoods, culture, and environment. Besides that, Malaysia also hopes that FAO and SEAFDEC will continue their excellent work and efforts to promote a better livelihood for small-scale fisheries and aquaculture.



*Mr. Haji Mohd Sufian bin Sulaiman*  
Director General, Department of Fisheries Malaysia  
and Chairperson of the SEAFDEC Council for 2022–2023

# Message from the Secretary-General of SEAFDEC



Small-scale fishing and aquaculture employ around 21 million people throughout Asia. Despite the fact that small-scale fishers and fish farmers are among the world's most marginalized and destitute people groups, their harvests account about 40% of the global catch production (FAO, Duke University, & WorldFish, 2022). In Southeast Asia, fish and fishery products are an important source of protein, with an average per capita fish intake of 39.4 kg/person/year in 2017, almost double of the global average per capita

consumption of 20.3 kg/person/year (FAO, 2020). The importance of small-scale fisheries in the region is undeniably important for people's livelihoods, food and nutrient security, commerce, revenue, and economic growth of countries through international trade. The sector, however, has been confronted with challenges posed by competition among several subsectors which may result in coastal and inland resource and habitat degradation, as well as conflicts over the use of coastal and inland aquatic resources which may jeopardize their sustainability.

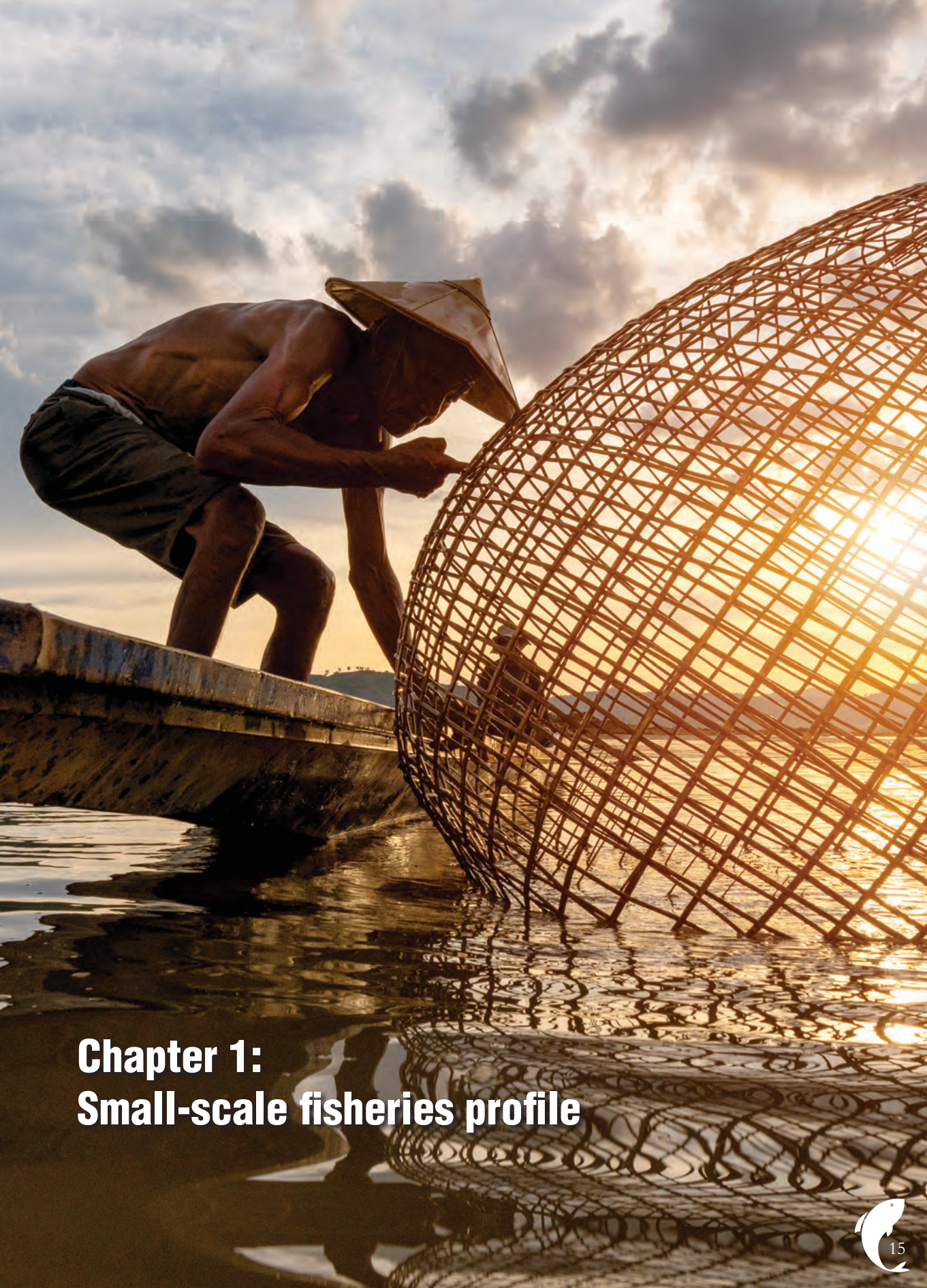
To address the abovementioned challenges, SEAFDEC has been providing support to undertake various capacity-building activities for the Member Countries. For instance, SEAFDEC continues to promote a number of concepts and management tools, such as rights-based management, locally-based coastal resource management, coastal fisheries management, and ecosystem approach to fisheries management (EAFM). From 2014 to 2021, SEAFDEC/TD had trained approximately 1,000 fisheries officers through EAFM training courses including EAFM core team establishment and LEAD (Leaders, Executives and Decision Makers) EAFM training course. SEAFDEC would continue the effort to support the Member Countries in order to secure and increase the importance of small-scale fisheries in a broader coastal and marine resources development and management.

FAO is spearheading the advocacy effort to commemorate the IYAF 2022, paying respect to the millions of small-scale fishers, fish farmers, and fish workers who offer fresh and nutritious food to billions of people and help to achieve Zero Hunger. SEAFDEC, therefore, joins this celebration in partnership with FAO and other partners. We welcome you to read this publication which digests SEAFDEC efforts and key achievements of the activities that SEAFDEC has initiated in the past. This publication also provides a strategic outlook and actions to be undertaken in the region toward sustainable development of small-scale fisheries in the region under the framework of the Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region Towards 2030 to strengthen small-scale fisheries in the Southeast Asian region.

I would like to express my gratitude to SEAFDEC Council Directors, SEAFDEC Secretariat and Departments, and collaborative partners for providing valuable contributions which helped us in the successful completion of this publication



*Ms. Malinee Smithrithee*  
SEAFDEC Secretary-General



# Chapter 1: Small-scale fisheries profile



## Characteristics of small-scale fisheries

Small-scale fisheries provide food and livelihoods to millions of people. Small-scale fisheries share about 40% of the global catch and employed about 60 million people. In Southeast Asia, small-scale fisheries contribute about 8 million tonnes and engage about 5 million fishers (FAO *et al.*, 2022). The fisheries of the Southeast Asian region are tropical, multi-species and multi-gear, and the vast majority of fishers traditionally work on a small-scale to exploit natural fishery resources for their livelihood.







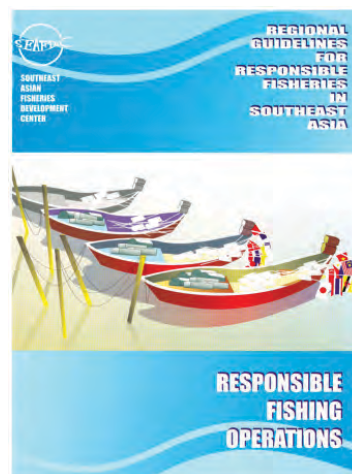
Because of this, it is difficult to reach a rational definition of small-scale fisheries in the region. In the absence of a concrete definition, SEAFDEC included the basic characteristics of small-scale fisheries and their fishing areas by comparing such characteristics to those of commercial fisheries of the respective countries except for Lao PDR and Singapore in the Regional Guidelines for Responsible Fisheries in Southeast Asia: Responsible Fishing Operations in 1999.





In general, the term “small-scale fisheries” in the region is defined in the Guidelines as *fishing units operating using small-scale boats, fishing gear and equipment*. Concerning the diversity of small-scale fisheries in the region, the common features are characterized as a dynamic and evolving sector, employing labor-intensive harvesting, processing and distribution technologies, to exploit marine and inland water fishery resources. During the Southeast Asian Regional Consultation Workshop on the Implementation of the Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Securing and Poverty Eradication in 2015, the characteristics of small-scale fisheries in the region were further elaborated as open access, low levels of empowerment, inconspicuous organizational structures, and less representation in a formal decision-making process. The livelihoods of small-scale fishers are typically a combination of fishing and other activities.

Small-scale fisheries are not only in marine and coastal waters, inland water bodies also the main contribution of fisheries production especially in Cambodia and Lao PDR. While most of AMSs have marine fisheries production exceed inland fisheries production, these two countries rely heavily on the fisheries production from inland aquatic resources as well as importation of fish and fishery products from neighboring countries. Besides small-scale capture fisheries, small-scale aquaculture also contributes significantly to securing nutrition and protein food, income generation, sustainable livelihood and poverty alleviation for people in the region.





## Contributions of small-scale fisheries

Across the Southeast Asian region, small-scale fisheries play an important role for providing the sources of protein and food security including poverty alleviation, livelihood, local and national economies as well as earning foreign exchange. Small-scale fisheries directly contribute to food security by increasing the supply of fish while it may, however, indirectly support to food security by generating revenues from production and related processing and marketing operations, which can then be used to buy food. Since food security is a key element of poverty eradication, small-scale fisheries in the region provide fish as food for those who chronically poor and lack of access to adequate food. In different areas, small-scale fisheries also reduce malnutrition which negatively affects people's working and learning capacity. Small-scale fisheries therefore be one of an integral part of the society in the region to eliminate hunger and malnutrition as a precondition to eradicate poverty.

Small-scale fishers and farmers also contribute significantly to local economy through income and employment since fish are among common traded products and generate cash to promote and boost demand. Besides, growing international trade in fish and fishery products from small-scale fisheries make a significant contribution to national economies through the generation of foreign exchange of such exports.



## Gender in small-scale fisheries

The livelihoods of small-scale fishers and farmers are not just a matter of harvesting, processing, and trading to earn cash. These economic activities are intertwined with a variety of social relationships. The way their livelihoods are run reflects broader social structures which diverge greatly across geographical areas and over time. Men usually do fishing operations, while women frequently associate with near-shore fishing, gleaning, processing, and marketing in many communities. Social status and group identities such as ethnicity, migration, or religion can influence who goes fishing in a particular community.



### Key beneficiaries in small-scale fisheries

Small-scale fishers and fish workers, either full- or part-time-, or just seasonally, are often the direct beneficiaries in utilizing coastal, marine, and inland resources as well as in fish farming making them the main actors in fish supply chain. The upstream input providers who supplying inputs for these actors to perform fishing operations and farming production are those receiving benefits such as credit providers get interests from the debts of investment costs in fishing vessels and farming operations, input suppliers for engines, gears, fuel, ice, bait also generate sell from fishing operations, feed shops and companies

make profit from its sale as feed is the major cost of most aquatic animal farms. For the downstream activities are those following the harvesting of products. Small-scale fishers and farmers target the supply of fish and fishery products mainly to local, and domestic markets as well as for subsistence consumption. While in some cases, they also heighten its products for international markets. These markets and distributors of these products to consumers in other cities, provinces, and countries. Along the fish supply chain after harvesting, each actor such as processors, distributors, wholesalers, and retailers add value and make profit on the sale of fish and fishery products until the end consumers.





## Challenges

The challenges of small-scale fisheries in the region include declining resources, habitat degradation, illegal, unreported and unregulated fishing, post-harvest loss, climate change and its impact, competing over resource uses, COVID-19 etc. Since the depletion of fisheries resources as well as degradation of fishery habitats in the region, the small-scale fishers spend a lot of time fishing in some seasons, yet only catch a small amount of fish. The lack of technology in fish post-harvest and processing also results in the low selling price of their catch. Marine and inland resources have multiple users coupled with urbanization, small-scale fishers are increasing competition in utilization and access to resources which can greatly affect the livelihood of fishing communities. Small-scale fishery has then uncertainties of change. The resource itself is dynamic, with fish output being insecure due to diminishing resources and fluctuating market demand. The income from fishing operations varies according on the market price of fish. Furthermore, marine and inland fisheries as well as aquaculture farms are always at risk of absorbing the consequences of natural disasters and climate change. With lack of formal representation in the decision-making processes, funds and resources to support research and extension activities as well as sustainable management of these small-scale fisheries and aquaculture are limited.

The recent COVID-19 pandemic then exacerbates the abovementioned challenges in small-scale fisheries sector. SEAFDEC, therefore has conducted the study of the impact of the pandemic to fisheries sector in Southeast Asia which includes small-scale fisheries in the region. The

results showed that the main cause of impact of the pandemic on small-scale fisheries is similar to other sectors and businesses which is the restriction measures imposed by the authorities. Based on four countries that responded to the questionnaire survey *i.e.* Brunei Darussalam, Malaysia, Myanmar, and Thailand. In Brunei Darussalam, it was found that the number of young people who lost their job during the pandemic has changed their jobs to be small-scale fishers and the small-scale fishing vessels slightly also increased. While the number of small-scale fishers decreased in Malaysia, Myanmar, and Thailand. The cost of fishing operation increased in some countries while income of small-scale fishers decreased in most responding countries. The government then facilitated the flow of goods to alleviate the income of fishers. While some fishers limit their household expenses, some of them also increase their income by selling their products via online marketing. On gender perspective, it should be noted that the roles of men and women have no change comparing before and during the COVID-19. Men do go out for fishing while women assist in the preparation before and after the fishing operations including post-harvest activities. There is limited participation of elderly people in fishing operations during the pandemic.





## **Chapter 2: SEAFDEC journey in the development of sustainable small-scale fisheries and aquaculture**





SEAFDEC strives to achieve the mission “*to promote and facilitate concerted actions among the Member Countries to ensure the sustainability of fisheries and aquaculture in Southeast Asia,*” through its programs and projects. Sustainable small-scale fisheries and aquaculture is one of the main programs of SEAFDEC. For more than two decades, SEAFDEC has been supporting the ASEAN Member States in the implementation of several initiatives to promote sustainable small-scale fisheries and aquaculture. Initially, SEAFDEC supported the regionalization and implementation of the Code of Conduct for Responsible Fisheries stressing the diverse characteristics of small-scale fisheries in the region. Several regional guidelines, tools, and fishing gear and technology had been developed in close collaboration with the Member Countries and partners.

The following are the key achievements of SEAFDEC relevant to the sustainable development of small-scale fisheries and aquaculture in the region which are categorized in four topics *i.e.* small-scale fisheries management; resource enhancement; safety at sea and adaptation to climate change; and post-harvest and marketing.



## I. Small-scale fisheries management and aquaculture

### ● Coastal fisheries

Focusing on the management of small-scale fisheries, the Supplementary Guidelines on Co-management Using Group User Rights for Small-scale Fisheries (2006) was one of the priority issues stipulated in the Resolution and Plan of Action of the Millennium Conference organized in 2001. The Guidelines was developed under the Special Five-year Program on Sustainable Fisheries for Food Security in the ASEAN Region: Towards Decentralized Management of Sustainable Fisheries through a series of consultations with the SEAFDEC Member Countries using novel concepts and approaches *i.e.* rights-based fisheries and co-management. The aim was to delegate the authority of coastal fisheries management to local fisheries organizations



*Supplementary Guidelines on Co-management Using Group User Rights for Small-scale Fisheries*

to encourage small-scale fishers to participate in management actions within government policy and guidelines.

To secure and raise the importance of small-scale fisheries in a broader coastal and marine resources management and development, the TD continues the promotion of several concepts and management tools such as the rights-based management and co-management since 1999; integrated coastal resources management since 2001; locally-based coastal resource management since 2002; coastal fisheries management since 2005; and ecosystem approach to fisheries management (EAFM) since 2014.



*SEAFDEC and EAFM Team of Myanmar established the woman group and promoted alternative livelihood in Aung Kan Thar village, Myanmar*



*Participants in Indonesia prepare seaweed crackers*



*Training on safety at sea for small-scale fishers in Malaysia*



*Training on the onboard engine for Brunei Darussalam*

From 2014 to 2021, TD had trained more than 445 fisheries officers through 20 EAFM training courses and about 90 persons of middle fisheries management level have been completed the Training-of-Trainer EAFM training courses. Besides, around 80 decision makers have been trained through three LEAD (Leaders, Executives and Decision Makers) EAFM training courses. In addition, the learning sites of EAFM implementation were carried out in several pilot projects. During 2017–2019, TD promoted the EAFM implementation in learning sites in Myanmar, Cambodia, Lao PDR, and Thailand, respectively.

MFRDMD with funded from the Islamic Development Bank (IDB) has conducted project entitled “Enhancing Coastal Community Resilience for Sustainable Livelihood and Coastal Resources Management” from 2015 to 2018 to improve the socio-economic status of the coastal dwellers and to promote sustainable utilization and management of the coastal resources. In the beginning, the community survey and need assessment were carried out to have the baseline information and formulate appropriate action plan in the selected communities. The target beneficiaries were the coastal Muslim communities in the IDB countries, namely Brunei Darussalam, Indonesia, and Malaysia. More than 20 capacity building activities for fisheries associations and coastal communities were conducted with around 750 participants comprising of fishers, seafood processors, head of communities/villages, and government officials. This project has successfully provided additional income and knowledge to the communities and fisheries association. The overall impacts of the project were for instance reduction

of the breakdown time and cost saving of up to 30 % for the repair and maintenance of engine and fiberglass boats; improvement of quality and standardized of fisheries products to comply with hygienic standards; production of fishery products were increased by three times; and increased participation of women in community business activities.

Aquaculture Department (AQD) with co-funding from the International Development and Research Center (IDRC) of Canada launched in 1991 launched **the Community Fishery Resource Management (CFRM) Project in Malalison Island** off western Panay Island, Philippines. The framework of the project integrated the analysis of the socioeconomic condition of fishers with the condition of the coastal resources, the types of fishing and aquaculture technologies, and the role of the institutions in setting up rules and rights in the use and management of the coastal resources. The goal was to support fishers to rise above their poverty and to regenerate and manage the marine and coastal resources.



- *Inland fisheries*

The Inland Fishery Resources Development and Management Department (IFRDMD) promoted the sustainable management of inland fisheries in the region through the five-year project “Promotion of Responsible Utilization of Inland Fisheries in Southeast Asia” in 2015–2019.



*Inland Fishery Resources Development and Management Department building in Palembang, Indonesia*

IFRDMD compiled the basic data on the features of inland capture fisheries in the region as well as promoted inland management measures including co-management and rights-based fisheries management applicable to inland fisheries in the region. Under the Project, signboards were installed in the conservation zones in Nam Xouang Reservoir in Lao PDR and lakes (*i.e.* Cala Lake, Ulak Lia Lake, and Siarak Lake) in Musi Banyuasin Regency, Indonesia to raise the awareness of responsible utilization of inland fishery resources.

In addition, IFRDMD developed the Regional Policy Recommendations on Conservation and Management of Catadromous Eel Resources and Aquaculture in Southeast Asia in 2014 to promote common approaches to manage the utilization of eel resources as well as eel aquaculture in the region replacing the illegal exportation of elvers and juvenile eels. Moreover, the Policy Guidelines for Regional Conservation and Management of Tropical Anguillid Eels Resources in Southeast Asia was endorsed by 41<sup>st</sup> Meeting of AMAF in November 2019. The purpose of these Policy Guidelines is to suggest a method for establishing and executing effective regional management measures, as well as to prescribe activities and find ways forward, to promote of effective inland fisheries management measures and to study for the sustainable use of inland fisheries resources and tropical anguillid eels in Southeast Asia.

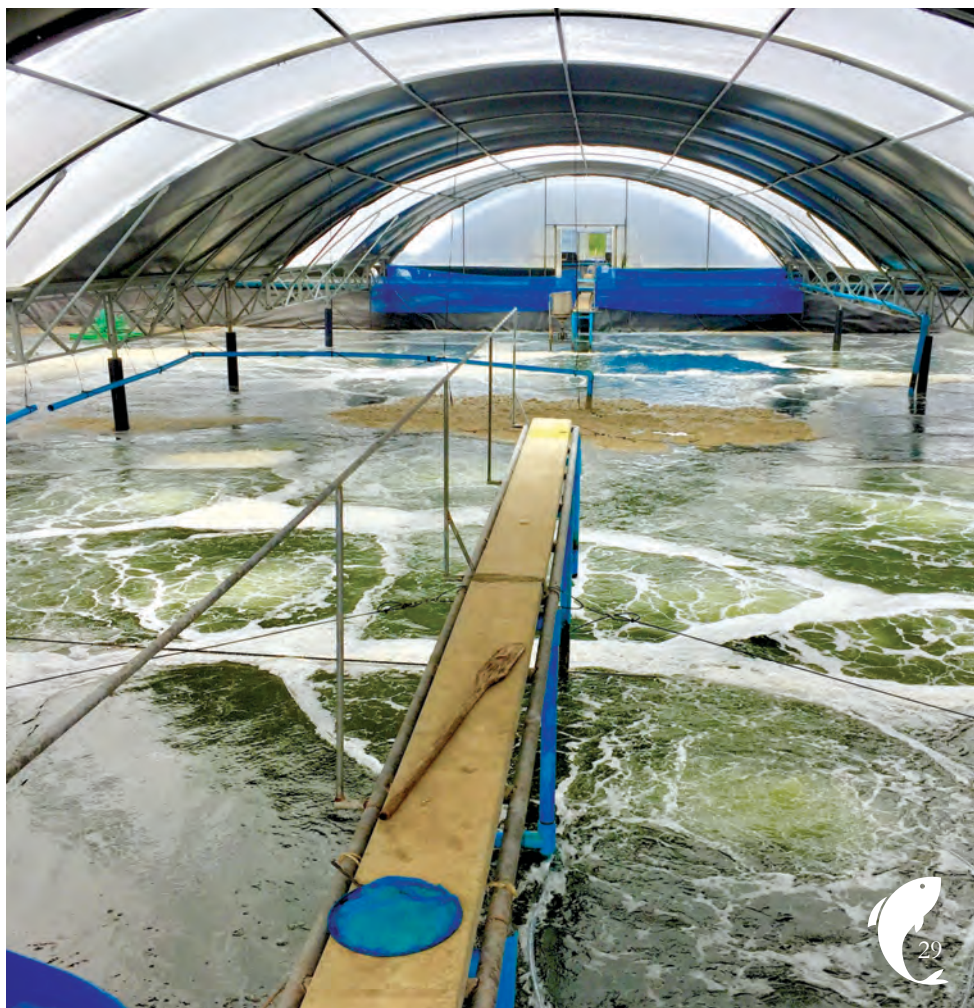
In this connection, TD implemented the project on **Facilitating Fisheries Activity Information Gathering through the Introduction of Community-based Resources Management/Co-management** with the funding support from the Japanese Trust Fund during 2013 to 2019. A series of capacity building activities was conducted especially in Lao PDR with the aim to develop the most viable approach for sustainably manage the fishery resources for the benefit of the small-scale inland fisheries.



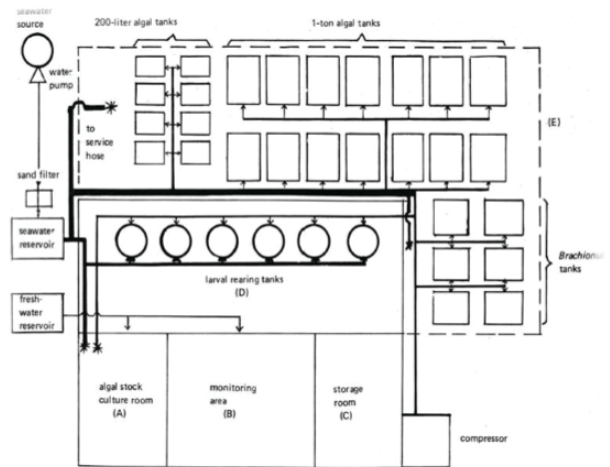
- *Aquaculture*

*Barangay Shrimp Hatchery and Shrimp Revival Efforts*

Since 1977, AQD organized the Barangay Shrimp Hatchery Project which aimed at developing a small-scale compact hatchery system for tiger shrimp to serve as a model for fish farmers to adopt the hatchery technology within their economic and technical capabilities. The model also served as a training facility for all phases of hatchery operations. The Project sites were located in Tigbauan, Iloilo; Batan, Aklan; and Zamboanga City in the Philippines. The project used two tanks which were appropriate for small-scale operators. It allowed flexibility in hatchery operation and was easily manageable for disease prevention and control. This Project was so successful that hatchery runs in all Project sites have shown promising results. By the end of 1977, ten fish operators from the Western Visayas participated in a training program on shrimp hatchery management and all of them built their own hatcheries.



However, since the 1990s, the drastic decline was caused by fast-spreading diseases such as monodon baculovirus, luminescent vibriosis, and others which were linked to environmental degradation. The industry was ill-prepared for the intensification and the rampant use of antibiotics and chemicals and the release of untreated wastewater into the environment. In 2017, AQD launched the program “*Oplan Balik Sugpo*” (Operation Black Tiger Prawn Revival) which aims to revive the shrimp production as well as to provide farmers with good quality shrimp fry for grow-out culture. The new shrimp hatchery located at Tigbauan Main Station of AQD in Iloilo involves the implementation of strict biosecurity protocols in the hatchery phase which will avoid the transmission of pathogens from spawners to their offspring, or through infected water, feed, and other surfaces.



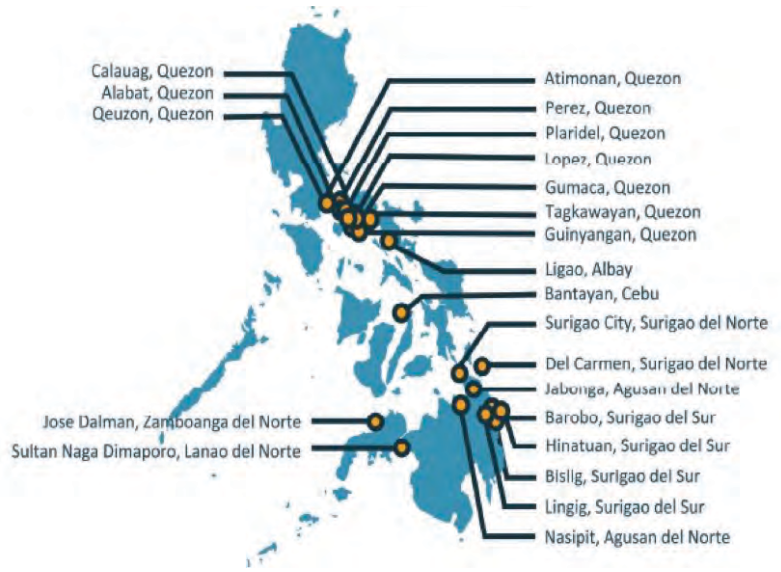
*Layout of a small-scale hatchery system*



*Milkfish Fry Sufficiency: Construction of Legislated Hatcheries and Revival of Abandoned Hatcheries*

To solve the reliance on milkfish fry imports to meet the large annual fry requirements of the Philippines, BFAR and AQD entered the Memorandum of Agreement (MOA) in 2018 to evaluate the multispecies hatcheries. The goal was to make the abandoned functional in line with the government program to achieve the annual milkfish fry requirement of the country. AQD conducts feasibility studies on all legislated sites. Once constructed, these legislated multispecies hatcheries will serve as central milkfish hatcheries providing the seed requirement of grow-out facilities, like ponds, pens,

and cages within its region. Each marine hatchery is capable of producing 25 million milkfish fry annually, and it is also capable of accommodating other marine species such as shrimp, pompano, and mangrove crab. Eventually, the facilities may also serve as venues to conduct training courses for private groups to learn the actual hatchery operations.



*Sites of legislated hatcheries evaluated by AQD since 2018*

● *Gender integration*

SEAFDEC implemented several projects that have been engaged women, men, and youth in the project activities. In 2001, the project on Integrated Coastal Resources Management was conducted in three Member Countries *i.e.* Thailand, Malaysia, and Cambodia. The aims were to enhance fishery resources and alleviate poverty. In this Project, women and men were involved in livelihoods that reduced their over-dependence on coastal resources by enhancing local businesses outside capture fisheries. The key achievement of the Project was creating additional source of income for the fishers' and improving women's skills and knowledge of fish processing and value-added products development.



*TD staff conducting meeting in Malaysia (above) and survey in Thailand (below)*



However, the Resolution and Plan of Action adopted during the ASEAN-SEAFDEC Millennium Conference in November 2001 did not specifically stipulate the need to mainstream gender in the small-scale fisheries policies. The two consecutive frameworks renewed in 2011 and 2020 counted the capacity building of relevant organizations and stakeholders and empower them to increase resilience, improve livelihoods, adopt supplementary livelihoods with gender integration in the process.

At present, SEAFDEC recognizes the need for increasing gender awareness of relevant stakeholders at all levels and at the same time building the capacity of relevant staff and key stakeholders on applying the gender mainstreaming tools to ensure that the gender aspects are properly mainstreamed into the regular or routine work in fisheries. In addition, the gender aspects need to be integrated into the monitoring and evaluation system to safeguard gender-responsive action plans. SEAFDEC is working towards enhancing gender integration for SEAFDEC's Member Countries starting with the capacity building program on gender concept and gender analysis to fisheries staff.



*Women group making the local snack in Thailand*



*Women and men participate in the project meeting in Cambodia*





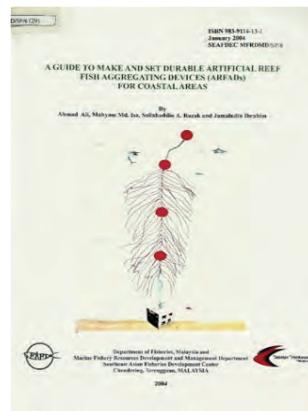
## II. Resource enhancement

- *Capture fisheries*

MFRDMD had successfully completed the study Construction and Setup Durable Fish Aggregating Device for Coastal Fishers in SEAFDEC Member Countries in 2000–2001 to provide a more stable and dependable enriched ecosystem for fishers to exploit fishery resources. Also, **A Guide to Make and Set Durable Artificial Reef Fish Aggregating Devices (ARFADs) for Coastal Areas** was published in 2004. The design of ARFADs was made of a concrete anchor to resemble the natural habitats of several demersal fish species as well as serve as sanctuaries for fish and other marine life. The concrete structure also acts as a hindrance to encroaching illegal trawlers in prohibited areas as well as create new fishing spots close to villages for subsistence or recreational purposes. This aggregated device could create economic gains for small-scale coastal fishers.

Moreover, TD implemented the project “Rehabilitation of Fisheries Resources and Habitats/Fishing Grounds through Resource Enhancement” from 2001 to 2005 to explore suitable designs of resource enhancement tools in collaboration with the SEAFDEC Member Countries. The Project modified fish aggregating devices (FADs) into floating artificial reefs or fish enhancing devices (FEDs) in coastal areas. FEDs have been an effective tool to enhance the fishery resources and protect the resources from the encroachment of destructive fishing gear into the coastal areas.

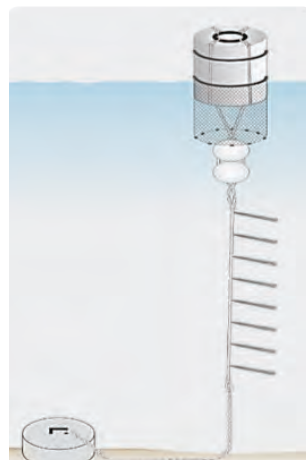
In addition, TD implemented the project “Introduction of Set-net Fishing to Develop Sustainable Coastal Fisheries Management in Southeast Asia: Case Study in Thailand” in 2003 to reduce the fishing pressure on coastal fishery resources through the introduction of set-net as a passive fishing gear as well as to enhance the coastal fishery resources. The Project focused on the four elements including fishing gear technology and management, fisheries biology, fishing ground condition, and fishers



*A Guide to Make and Set Durable Artificial Reef Fish Aggregating Devices (ARFADs) for Coastal Areas*



*Fish aggregating devices*



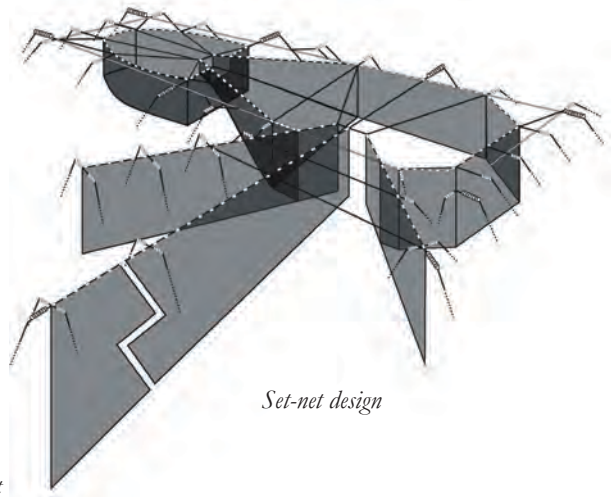
*Fish enhancing devices*



*Fishers preparing the set-net in Thailand*



*Fishers harvesting fishes from the set-net in Thailand*



*Set-net design*

cooperative management. The Project received positive feedback on the function of fishing gear, resource enhancement aspect, fisher cooperation, and environmental protection. Fishers indicated that their experience with this technology has helped them enhance their knowledge and skills in fisheries, and that their income had increased as a result of implementing the set-net operations. Furthermore, the successful set-net fisher's group evolved into fisheries cooperatives.



*Training workshop on FEDs with small-scale fishers in the Philippines*



*Set-net concept established in Rayong, Thailand*

## • Aquaculture

Resource enhancement is to rehabilitate the depleted or overfished stocks in the wild. AQD developed seed production technologies to support fish production in Southeast Asia and other countries. In 2000, AQD launched its Stock Enhancement Program to promote studies on the development of seed production technologies for threatened aquatic species that could be rebuilt through resource enhancement. Subsequently, transport and

release strategies were tested in selected sites to support the goals of rehabilitating critical fisheries. The project “Community-Based Resource Enhancement (CBRE)” was implemented by AQD and co-funded by AQD and the Government of Japan Trust Fund (GOJ-TF) in the intertidal flats in Barangay Molocaboc, an island community in the Philippines with more than 7,000 fishers and household members dependent on fishing. The Project formed a tri-party collaboration among the organized group of fisherfolk named the Molocaboc Sea Ranchers Association (MOSRA); local government of Sagay City and Barangay Molocaboc officials; and research and donor tandem of AQD and GOJ-TF. The Project conducted the integrated production of abalone (*Haliotis asinina*) and sandfish (*Holothuria scabra*), and to revive seahorse (*Hippocampus* spp.) population through sea ranching and stock enhancement using hatchery-bred seeds produced from the remaining broodstocks in the release environment.



*Members of Molocaboc Sea Ranchers Association (MOSRA) with abalone and sandfish harvesting from the project site in Sagay, Negros Occidental, Philippines*



*Community-based Resource Enhancement project site in Molocaboc Island in Sagay, Negros Occidental, Philippines*

Prior to the release of juveniles in pre-assessed sites in 2011, regulations in abalone and sandfish harvesting had been promulgated through a fisherfolk-initiated Barangay Ordinance in 2010, allowing only the harvest of abalone with > 6 cm shell length. The harvest size of sandfish was 320 g live weight per the national Fishery Office Order in 2013. Fishers in the area were not only provided supplemental income through sharing of proceeds from scheduled harvests but have been capacitated in aquaculture operations through hands-on training on the preparation and selection of local broodstocks, seed production, nursery techniques, and release strategies to enable them to sustain the stock enhancement activities



that have been successfully attained through community-based participation. The CBRE project from 2006 to 2019 has transformed the fishers from being extractive resource users into better stewards and responsible beneficiaries of the fisheries and environment as well as turned over the responsibilities to MOSRA and local government of Sagay City and Barangay Molocaboc in 2019. The major impacts include having the resources in overfished areas restored through releases of hatchery-reared juveniles. In 2021, ten years after the first release of hatchery-reared abalone juveniles and with MOSRA already weaned away for 1.5 years from the AQD abalone-CBRE team, the sampling dive recorded 118 abalone pieces or just about the same number when the CBRE was monitored by AQD.

### III. Safety at sea and adaptation to climate change

- *Safety at sea*

TD conducted the activities to enhance safety at sea for small-scale fishing vessels in the region as part of the project “Responsible Fishing Technology and Practices.” One of the activities was the **Regional Workshop on Safety at Sea for Small Fishing Boats** in 2003. The Workshop reviewed the current situation of safety at sea in most countries in Southeast Asia and others and came up with the recommendations such as promoting the registration of small fishing vessels, coordinating between concerned agencies on monitoring and control of small-scale fishing vessels’ safety, identifying and promoting basic requirements for safety at sea such as research on boat design and construction of small fishing vessels, developing appropriate communication systems on weather forecast information as well as search and rescue systems. **The Second Regional Workshop on Safety at Sea for Small Fishing Boats** was subsequently organized in 2010 to emphasize the development of a mechanism to record the accidents of fishing boats at sea.





*Indonesian officials observed the using of liquid petroleum gas as alternative sources of energy for small fishing boats in Thailand*



*Trainees observing onboard the demonstration of optimizing energy use and safety at work*

### ● *Eco-friendly fishing vessel*

There are numerous methods of minimizing fossil fuel use in fisheries and fishing operations such as changing the hull design, engine power and operation range, engine design, and engine operation and maintenance, and fishing gear and methods. In 2001, TD implemented the project “Responsible Fishing Technologies and Practices” to promote alternate sources of energy for fishing in the Southeast Asian coastal areas. The activities of the Project include the conduct of experiments and trials on the use of sails for small fishing vessels and developing the method of determining the size of a sail in relation to the size of the fishing vessel. The findings of the trials in Thailand suggested that the average speed of a fishing vessel should be 15–20 km/hr. Experiments were also carried out in Myanmar when Cyclone Nagris struck the country’s Irrawaddy Delta in 2008. In addition, promoting the use of wind energy was continued in other Southeast Asian countries.

- *Enhancing resilience of small-scale fisheries to climate change*

One of the projects of the SEAFDEC-Sweden Project entitled “Fisheries and Habitat Management, Climate Change and Social Well-being in Southeast Asia” was implemented in 2013–2019 with the goal to achieve the sustainable use of aquatic resources and reduce the vulnerability coastal/rural fishing communities to climate change in the region. The Project partnered with civil society organizations with extensive experience in rural development to build local capacity to adapt to the effects of climate change, manage natural resources, conserve or restore critical habitats, develop and manage diversified livelihood options and alternative income-earning opportunities, and promote gender equity and equality. One collaborative activity was “Fisheries and habitat management, climate change and social well-being in Southeast” implemented locally by the CORIN-Asia Cambodia in partnership with Coastal Cambodia Local Alliance (CCLA) from 2014 to 2017. The activities had one of the focus areas on climate change adaptation and social well-being of coastal communities in the provinces of Kep, Kampot and Preah Sihanouk in Cambodia. In addition, the Project in collaboration with the Sustainable Development Foundation (SDF) in Thailand conducted the situational analysis of probable climate change impacts on



*Members of local communities in Trat Province, Thailand making fish aggregating device*

coastal communities including recommendations for assisting community adaptation focusing on area-based, rights-based, and gender sensitive approaches case study of the coastal communities of Trat Bay from 2016 to 2018. The activities included habitat enhancement which supported the willingness of the communities to enhance fishery resources in the area.

## IV. Post-harvest and marketing

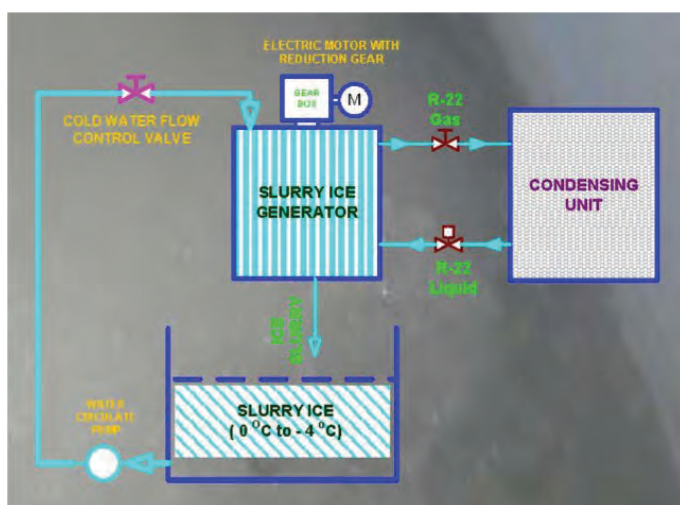
- *Onboard fish handling*

TD conducted the study on sherbet ice system as one of the options for hygienic fish cooling applications at sea to keep the fresh quality of fish onboard. Sherbet ice is one type of chilling system that can be used to maintain the natural appearance, taste, and aroma of fish, and retard bacterial growth. The cooling capacity of the slurry ice is approximately 4–6 times higher than that of conventional chilled seawater systems. The system uses a vertical shell-and-tube heat exchanger with mechanical heat transfer augmentation. A dynamic ice maker uses to generate liquid ice crystals which are called in various commercial names such as sherbet ice,



*Slurry ice equipment*

flow ice, or liquid ice. The slurry ice system has the potential to significantly lower the operating costs compared to static ice or ice harvesting technologies. Regarding fuel-saving, slurry ice systems apply the thermal energy storage systems in which the cooling energy is generated from the fishing vessel whenever the main engine is operating. During the fishing trips, sherbet ice can be produced on the way to/from the fishing ground or even during fishing operations. Aside from efficient fuel utilization and reduced fish handling cost during the fishing trips, another advantage of using slurry ice is it can be produced onboard and pumpable so it is easier for fishers to transfer the liquid form of ice onboard. Also, less space will be required on the vessel because the ice can be produced onboard with its high latent heat released when the water is frozen (80 Kcal/kg).



*Lay out of slurry ice system onboard fishing vessel*

- *Post-harvest technologies*

MFRD is continuously promoting and upgrading of small-scale fisheries by improving the safety of food supply and contributing towards food security in the region. The Department enhanced the development of fisheries post-harvest technology of small and medium enterprises and traditional fish product processing. MFRD conducted the 4-year program **“Application of Hazard Analysis Critical Control Point (HACCP) in the Fish Processing Industry in Southeast Asia”** from 2000 to 2003. The Program achieved its objective to document HACCP application in the fish processing industry on traditional fish products in the region and provided a platform for cooperation and sharing of information. In 2007, MFRD implemented the project **“Quality Assurance Systems for Small and Medium-Sized Fish Processing Establishments in ASEAN Member Countries”** which aimed at developing and promoting Good Manufacturing Practice/Sanitation Standard Operating Procedure (GMP/SSOP) programs for these establishments towards the adoption of HACCP to meet the safety and quality assurance requirements for their products. Many small- and medium-sized fish processing establishments (SMEs) comprised largely of pre-processing establishments (PPE) and traditional fish products processing establishments (TPE) were



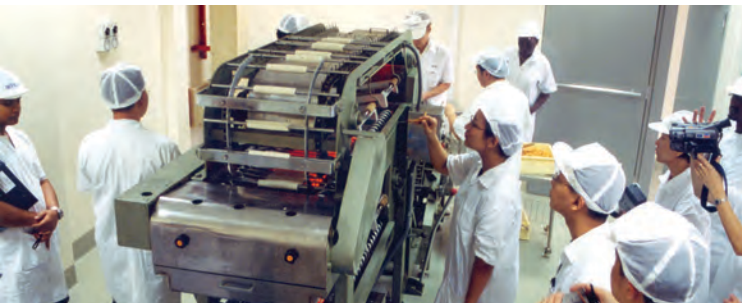
*GMP on crab meat picking in processing establishments in Cambodia*

found to have difficulties in implementing the quality assurance systems due to lack of financial and technical resources. From 2007 to 2008, MFRD collaborated with seven ASEAN Member States *i.e.* Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Thailand, and Viet Nam to develop GMP for selected PPE for develop GMP for selected PPE for shrimp, fish filleting, crab meat picking, and shrimp salting.

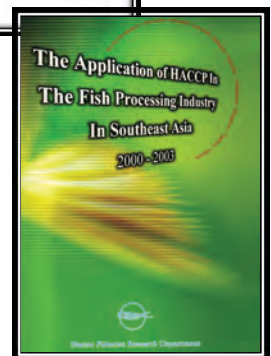


From 2008 to 2009, MFRD continued to collaborate with nine ASEAN Member States, namely: Brunei Darussalam, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam to conduct the second regional project activity for selected TPE involved in processing various types of traditional fish products. Both project activities successfully developed the GMP programs for the SMEs and published the manuals of the GMPs.

Besides the fish quality management programs, MFRD also supported the sustainable development of fisheries post-harvest technologies by improving the process and packaging of traditional fish products, as well as the development of surimi-based products from low-value, underutilized pelagic fishes. The “Special Five-Year Program on Maximizing of Fish Utilization” carried out technical R&D approaches to maximize the utilization of fishes as ingredients for value-added products. After the success in working with Cambodia to develop value-added products using freshwater fish, the program was further extended to Indonesia, Laos, Myanmar, and Viet Nam. Innovative products such as fish sausages, fish satay, fish siew mai and murukku were developed during these programs.



*MFRD conducted training to representatives from SEAFDEC Member Countries on the processing of fish using food processing equipment*



*Publications on maximizing utilization of marine and freshwater species*

- *Marketing*

During 2000s, one of the serious challenges in achieving sustainable fisheries particularly for small-scale fisheries in the region was overcapacity where there were too many fishers competing over limited fishery resources. Due to the difficulties in establishing appropriate fisheries management systems in extensive coastal areas, fishing activities during that time were conducted mostly under the open-access regime in an unregulated manner resulting in intensified deterioration of the fishery resources.



*National HRD Workshops on the promotion of FOVOP in participating countries was conducted in Myanmar*

Consequently, the lack of alternative livelihood in fishing communities coupled with the overcapacity situation and deterioration of resources have constrained the sustainable development of fisheries and led to poverty in the rural coastal areas. To mitigate such situation, SEAFDEC with support from the Japan-ASEAN Solidarity Fund, launched the project “Promotion of One Village, One Fisheries Products (FOVOP) System to Improve the Livelihood for the Fisheries Communities in ASEAN Region” in 2007. The Project was implemented in six pilot ASEAN Member States, namely: Cambodia, Indonesia, Lao PDR, Myanmar, Philippines, and Viet Nam, involving the government and private sectors as well as other stakeholders at regional and national levels to identify and promote unique and traditional fishery products and related services from particular fisheries communities. While such initiative was aimed



*Members of the Blood Cockle Fishers Group in Sihanoukville, Cambodia developing the appropriate sieve for the Self-regulatory Measures for Blood Cockle Fishing*

primarily at improving the livelihood opportunities of the fisheries communities in the respective countries, the roles of women were properly acknowledged as they were the potential stakeholders in rural economic activities, and their involvement in the fisheries post-harvest activities was recognized.

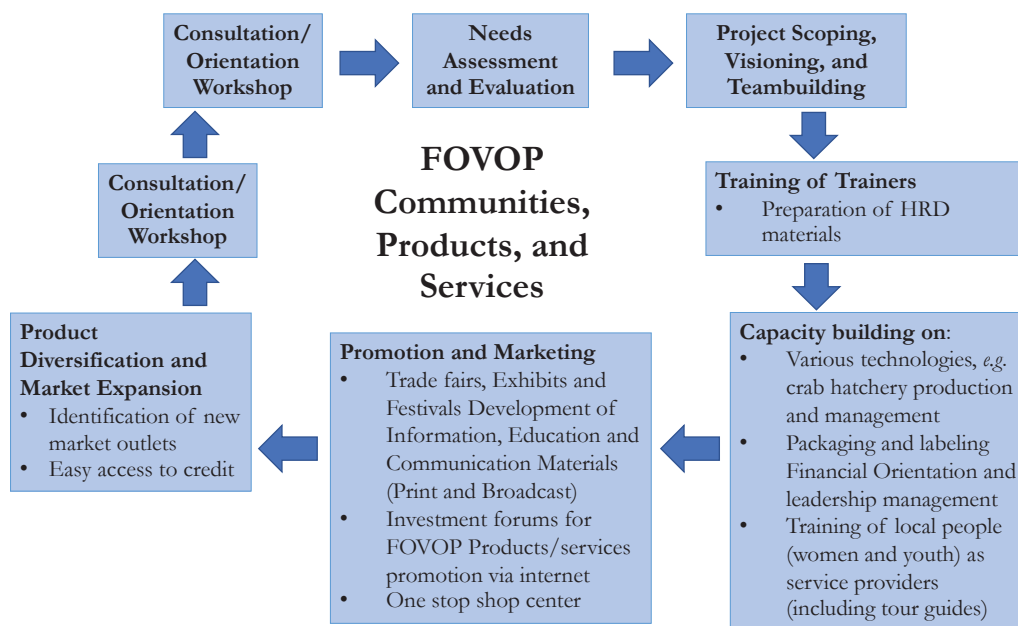
At the end of the Project, the “Regional Guidelines for the Promotion of “One Village, One Fisheries Product” (FOVOP) in the ASEAN Region” was developed as basis for the future promotion of FOVOP in the region. The Guidelines was envisaged to substantiate the national efforts in addressing the issues related to poverty alleviation and food security through fisheries intervention.



*Participants of the Human Resource Development Workshop observing women’s group activities in Thailand*



*Regional Guidelines for the Promotion of “One Village, One Fisheries Product” (FOVOP) in the ASEAN Region*



*Mechanism to Promote Implementation of FOVOP at Community Level*



# **Development of Key Policies and Guidelines on Small-scale Fisheries**

# Development of Key Policies and Guidelines on Small-scale Fisheries



Regionalization of the Code of Conduct for Responsible Fisheries

Code of Practice for Sustainable Use of Mangrove Ecosystems for Aquaculture in Southeast Asia

GMP for Small and Medium-sized Traditional Fish Products Processing Establishments in ASEAN

ResPoA 2020

Policy Brief: Applying human rights-based and gender equality approaches to small-scale fisheries in Southeast Asia

Inland Fisheries Data Collection mobile application

2003



Handbook on Collecting Fishery Statistics for Inland and Coastal Fisheries

2005

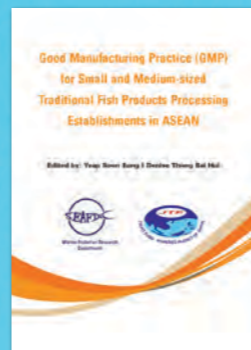


Regional Guidelines on for the Promotion of One Village, One Fisheries Product (FOVOP) in the ASEAN Region

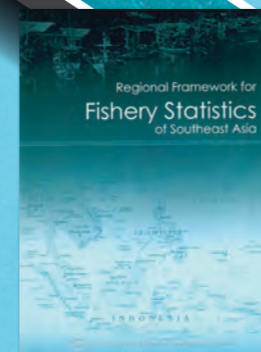
2010



2011



2008

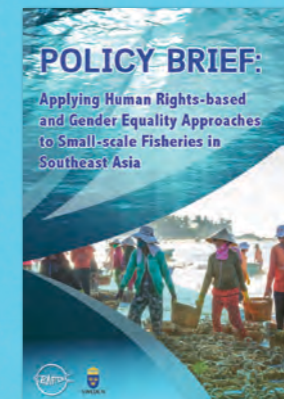


Regional Framework for Fishery Statistics of Southeast Asia



Good manufacturing practice (GMP) for small and medium-sized fish and fish products pre-processing establishments in ASEAN

2015



Consolidating the Strategies for Fishery Resources Enhancement in Southeast Asia

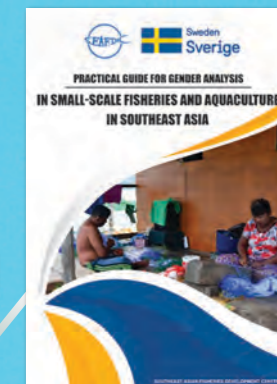
2018



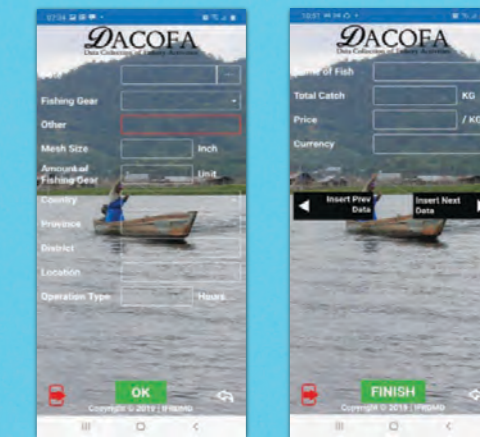
2020



ResPoA 2030



Practical Guide for Gender Analysis in Small-scale Fisheries and Aquaculture in Southeast Asia



ResPoA 2001



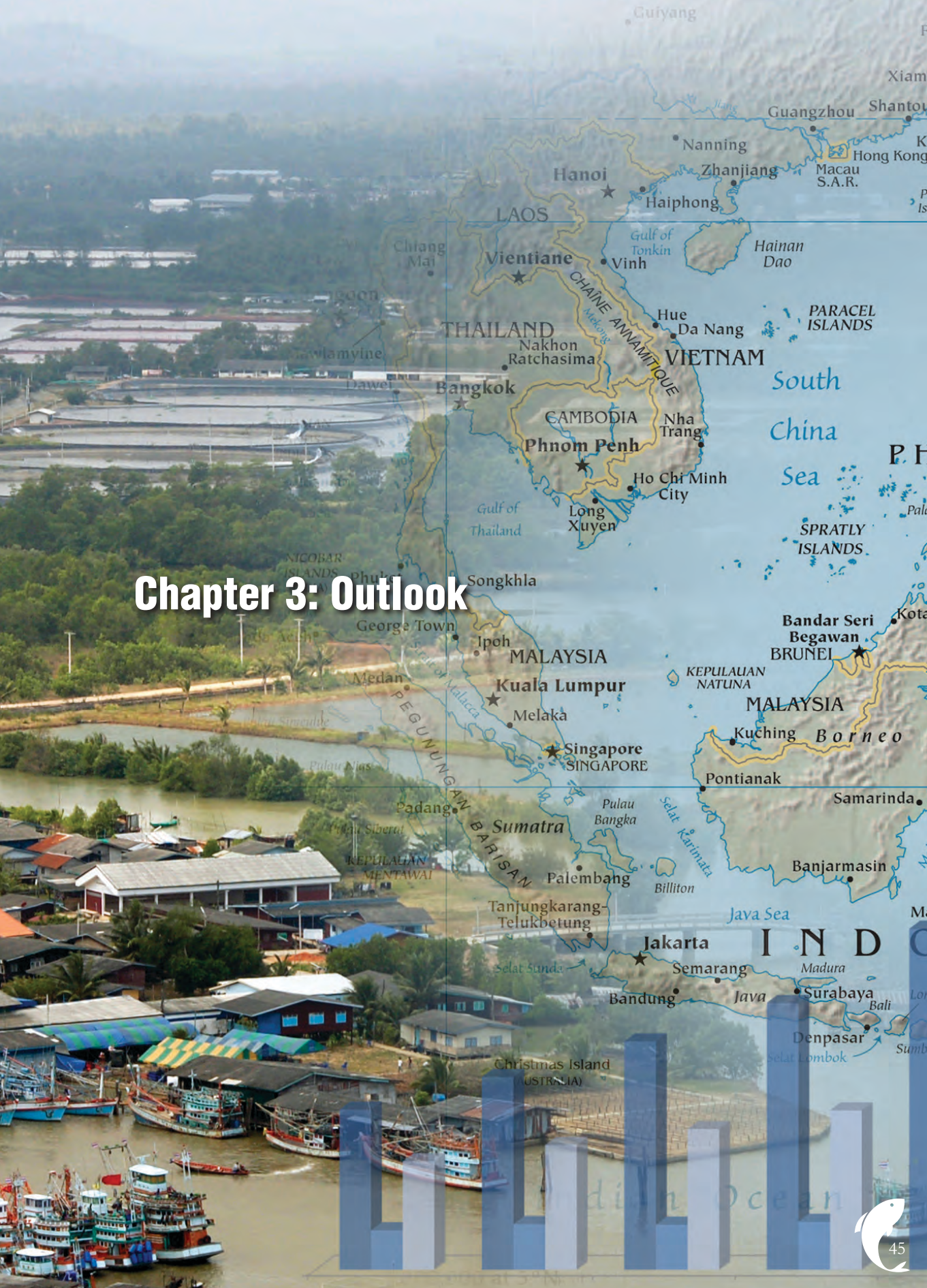
Establishment of the ASEAN-SEAFDEC Strategic-Partnership (ASSP)



The Southeast Asian Fisheries Development Center (SEAFDEC) is an autonomous inter-governmental body established in 1967. The mission of SEAFDEC considered and adopted by the Special Meeting of the SEAFDEC Council 2017 is *“To promote and facilitate concerted actions among the Member Countries to ensure the sustainability of fisheries and aquaculture in Southeast Asia.”*

SEAFDEC comprises 11 Member Countries: Brunei Darussalam, Cambodia, Indonesia, Japan, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam. The Center operates through the **Secretariat** located in Thailand and has five Technical Departments, namely: the **Training Department (TD)**; the **Marine Fisheries Research Department (MFRD)**; the **Aquaculture Department (AQD)**; the **Marine Fishery Resources Development and Management Department (MFRDMD)**; and the **Inland Fishery Resources Development and Management Department (IFRDMD)**.

# Chapter 3: Outlook

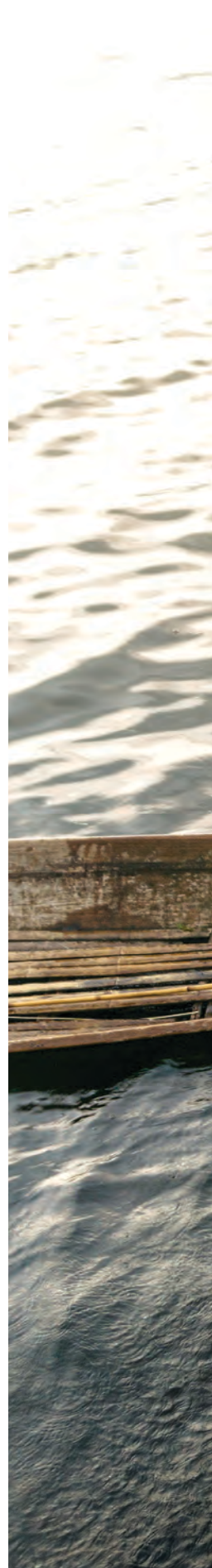


Small-scale fisheries face multiple challenges such as overexploitation of fishery resources, climate change, market failure, competition for space with other fishing and non-fishing sectors, weak governance, difficulty in adopting new technology, and others. These challenges contribute to increased income risk and instability for fishers as well as hinder sustainable growth of the fisheries sector. Though fisheries management mechanisms are in place, small-scale fisheries have not been adequately managed. There is a need to explore new data collection methodologies and analysis appropriate for small-scale and multispecies characteristics of inland capture fisheries, determine appropriate reference points for a variety of fishing gears and multispecies catch, apply appropriate catch documentation and traceability systems of fish and fishery products from small-scale fisheries, enhance the participation of local communities and institutions in the decision-making processes, and continue to promote research and application of innovation and technology.

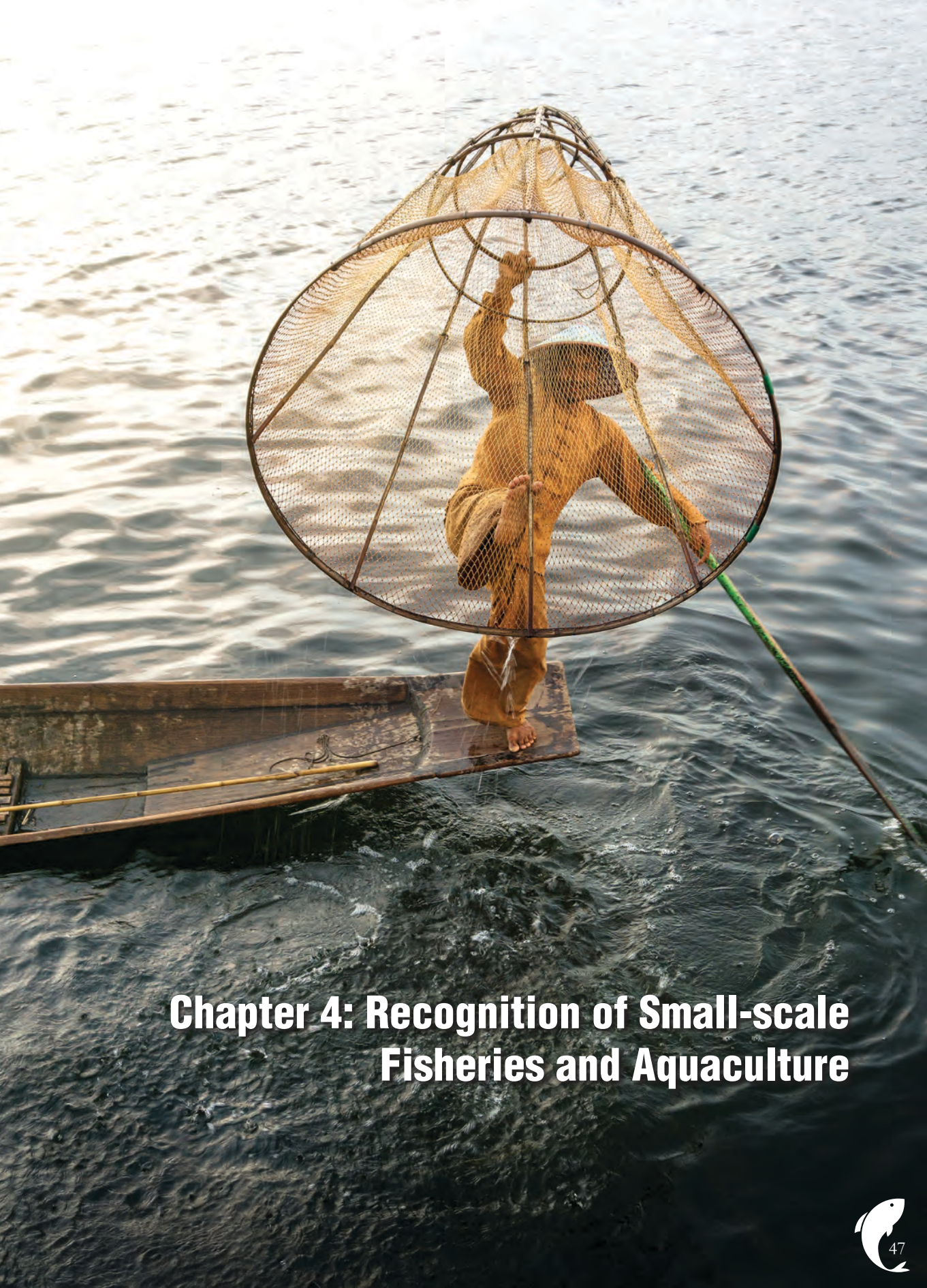
SEAFDEC, in collaboration with the Member Countries, adopted the Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region Towards 2030 (RES&POA-2030) which serves as a policy framework and provide priority actions to support the sustainable development of fisheries and enhance the contribution of fisheries to food security and better livelihood of people in the region. The RES&POA-2030 emphasizes strengthening the capacity and participation of the fishing community in fisheries management and supporting the implementation of the SSF Guidelines.

The SSF Guidelines are implemented at the local and national levels, while regional attention and support from SEAFDEC would be required to address common concerns and transboundary issues. The implementation of the SSF Guidelines involves new initiatives but it would also draw on existing experiences, best practices, and processes that assist small-scale fisheries in the region.

SEAFDEC joins the celebration of the IYafa 2022 to echo the recognition of the millions of small-scale fishers, fish farmers, and fish workers who provide healthy and nutritious food to billions of people. This would draw attention to the crucial role of this small-scale fisheries in food security and nutrition, poverty eradication, and sustainable natural resource management, as well as improvement of dialogue between various actors.







## **Chapter 4: Recognition of Small-scale Fisheries and Aquaculture**

# Message from the SEAFDEC Council Director for Japan



Highly evaluate the contribution of small-scale fisheries and aquaculture to the sustainable development, promote sustainability and further enhancement of social development and welfare, I would like to express my deep appreciation and respect for the International Year of Artisanal Fisheries and Aquaculture (IYAFA) 2022 and take this opportunity to introduce the efforts of Japan in the sustainable development small-scale fisheries and aquaculture.

In Japan, fisheries play a highly important role in stabilizing domestic supply of fish and fishery products and development of fisheries and fishing villages. In the overall fishery production of the country, around one-third of the production was from the small-scale fisheries. In these circumstances, Japan largely amended the Fisheries Act in 2018 and established the “Comprehensive Strategy of Aquaculture as a Growing Industry” in 2020 to further promote the sustainable development of aquaculture. Japan works on establishing a framework for the activation of fishing villages and increasing the income of fishers as one of the continuing efforts to implement appropriate management measures and transform the fisheries industry into a growing industry. In addition, Japan established the “Strategy for Sustainable Food Systems, MeaDRI” in 2021 with the aim of formulating an environment-friendly sustainable food system to ensure a stable food supply.

In addition to domestic activities, as a country that has been a member since the establishment of SEAFDEC, Japan supports the activities to improve the livelihoods of coastal fishers in the Southeast Asian region through contributions to SEAFDEC such as holding regional training programs or workshops through the project “Small-scale Fisheries Management for Better Livelihood and Fisheries Resources” conducted by SEAFDEC Training Department and dissemination of aquaculture technologies through the project “Sustainable Aquaculture through Cost-Effective Culture Systems, and Prompt and Effective Aquatic Animal Health Management” conducted by SEAFDEC Aquaculture Department.

Lastly, Japan will continuously support artisanal fisheries and aquaculture for sustainable development.

*Ms. Miwako Takase*

SEAFDEC Council Director for Japan and  
Councillor, Resource Management Department, Fisheries Agency of Japan

# Message from the SEAFDEC Council Director for Myanmar



First of all, I would like to congratulate SEAFDEC, FAO, and other organizations on the celebration of the “International Year of Artisanal Fisheries and Aquaculture 2022.” The fisheries sector of Myanmar provides direct employment for about 3 million people and provides indirect income for about 15 million people. Like other Asian countries, the people of Myanmar consume fish as fresh or processed which are traded internally and exported. Fishery production from inland, coastal, marine, and aquaculture is developing annually that it shared about 8 % to the national GDP in 2019–2020.

In recent years, more coastal communities engaged in the process of inshore fisheries co-management planning and implementation. However, speedy rural development and industrial zones destructed ecosystems and fisheries habitats resulting in the decline of catch in artisanal small-scale inland and coastal fisheries. Also, the increasing fishing capacity resulted in lower catch and low daily income for households. In addition, women participation in community fisheries group (CFG) is still in the infant stage, and the knowledge and institutional capacity of the CFG need to be strengthened.

The Department of Fisheries of Myanmar is trying to implement the plans for the artisanal fisheries and aquaculture sector to overcome the abovementioned challenges such as creating and implementing fisheries operational framework to improve the fisheries co-management and essential ecosystem approach to fisheries management; establishing the community fisheries, capacity building, promoting women participation in fisheries activities and supporting technical assistance for fisheries sector which are to be developed to implement the fisheries co-management and essential ecosystem approach to fisheries management; participating in climate-smart fish species and aquaculture program.

Moreover, value-add processing, enabling to participate in fisheries value chain, accessible updated information on markets, micro-financing, organize community-based associations of small-scale aquaculture farmers; artisanal fishers and processors, establish close seasons and areas to conserve fishery resources are the requisites.

We sincerely thank SEAFDEC for continuously assisting the Member Countries in the development of sustainable fisheries and aquaculture through capacity building, technical transferring and dissemination, introduce initiatives, and demonstration. Trust that our collaboration will reach the purpose of SEAFDEC “Contribution of fisheries to food security in the Southeast Asian region through adaptation to a changing environment, while promoting sustainable fisheries development in the region.”

*Mr. Wai Linn Maung*

SEAFDEC Council Director for Myanmar and  
Director General of Department of Fisheries, Myanmar

# Message from the SEAFDEC Council Director for Philippines



Mabuhay!

Congratulations to SEAFDEC for jointly celebrating the International Year of Artisanal Fisheries and Aquaculture with the FAO. This event is very important as it recognizes the millions of small-scale fishers, fish farmers, as well as other fish workers who continuously serve as our partners in providing safe and nutritious foods globally, especially in the times of the COVID-19 pandemic. Municipal (small-scale) fisheries and aquaculture production is a major component of the fishery production of the Philippines, ranging between about 1.1 million t and 2.3 million t annually or 78 % of the annual fishery production in 2016–2020. We have been pursuing efforts through effective partnerships and collaborations, and SEAFDEC is among our partner institutions in the development of small-scale fisheries and aquaculture.

The Philippines is happy to join you in this momentous activity. Fittingly, the current framework and mechanisms in fisheries development of the Department of Agriculture are aligned with the objectives of IYafa 2022 celebration. We endeavor to sustain and improve our support to our diverse small-scale fishers, fish farmers, and fish workers as they play the important role in achieving food security and sustainable use of fisheries resources. We recognize the important role of our partners in pursuing these efforts, especially with SEAFDEC.

Among the DA-BFAR and SEAFDEC collaborative projects is the development of feeds to reduce inputs in aquaculture which currently constitutes about 60–80 % of the production cost in aquaculture. SEAFDEC also has been supportive to the implementation of several national fisheries programs including expanding and improving milkfish hatcheries and fry production. On small-scale fisheries, SEAFDEC has been at the forefront in providing assistance and guidance to its Member Countries in improving the welfare of small-scale fishers and sustaining coastal fisheries resources. We also recognize the importance of mainstreaming gender in our programs in partnership with SEAFDEC.

Celebrating IYAFA 2022 is an opportune occasion to remind us of our firm commitment to provide “Masaganang Ani at Mataas na Kita,” the Department of Agriculture’s battle cry to make small-scale Filipino farmers and fishers uplift their livelihood.

Again, congratulations and we look forward to more collaborations and meaningful partnerships with SEAFDEC and FAO.

*Ms. Cheryl Marie Natividad-Caballero*  
SEAFDEC Council Director for the Philippines and  
Undersecretary for Agri-Industrialization and Fisheries  
Department of Agriculture, Philippines

# Message from the SEAFDEC Council Director for Singapore



On behalf of the Singapore Food Agency (SFA), I congratulate SEAFDEC on this publication issued in conjunction with the celebration of the International Year of Artisanal Fisheries and Aquaculture (IYAFA) 2022. Singapore recognizes the significant role played by fisheries and aquaculture in contributing to the food security, nutrition, and poverty alleviation in the Southeast Asian region. As food systems around the world face growing pressures from environmental degradation, climate change, and the ongoing COVID-19 pandemic, small-scale artisanal fisheries and aquaculture are one of the sustainable food sources.

We are confident that the activities conducted by SEAFDEC as part of IYAFA 2022 will help promote collaboration and partnerships among key stakeholders along the value chain for sustainable fisheries and aquaculture, and facilitate the exchange of best practices, technical assistance, and knowledge. This will empower them to continue contributing to the development of sustainable and resilient food systems through the responsible use of fisheries and aquaculture resources.

As part of the country's efforts to build the capability and capacity to produce 30% of our nutritional needs locally and sustainably by 2030, SFA will continue with our efforts to uplift the country's aquaculture sector through more productive, sustainable, and climate-resilient fish farming practices. We will also continue to grow our local aquaculture R&D ecosystem and work towards the development of innovative tropical aquaculture solutions that can benefit Singapore and the region. Singapore looks forward to the various activities planned by SEAFDEC in the years ahead.

*Dr. Tan Lee Kim*

SEAFDEC Council Director Singapore and  
Director-General, Food Administration and  
Deputy Chief Executive Officer

# Message from the SEAFDEC Council Director for Thailand



On the occasion to celebrate “the International Year of Artisanal Fisheries and Aquaculture 2022 (IYAFA 2022)” the Department of Fisheries, Thailand would like to take part in the celebration and convey its appreciation to the United Nations General Assembly, FAO, SEAFDEC, and other organizations to emphasize the sustainability of fisheries for food security, poverty alleviation and livelihood of people by enhancing the fisheries development of the countries, especially small-scale fisheries which contributes substantially to economic growth, the well-being of people, and sustainable utilization of fisheries resources.

More than 60% of fishing vessels of Thailand are classified as artisanal fishing vessels, or a total of 49,000 with a total amount of 250,000 tons/year of the catch production. The aquaculture production from artisanal farmers can be calculated to the value of 68,000 million baht for coastal aquaculture and 24,000 million baht for inland aquaculture. These productions contribute to national incomes, create jobs, and small-medium size industries along the supply chain. Despite the fact that the value of artisanal fisheries and aquaculture production is lower than that of commercial fisheries, they play an essential role in fishing communities, aquaculture farmers’ livelihoods, food security, and nutrition in rural areas.

Although Thai fisheries have been reformed to conform to international regulations and to prevent, deter and eliminate IUU fishing over the past 5 years, there is still a need to restore gradually fisheries resources in the Thai waters along with promoting aquaculture development. In managing the Thai fisheries sector, it is necessary to maintain a balance between economic and social aspects while controlling environmental impacts, particularly in small-scale and artisanal fisheries sectors. Thailand’s fisheries and aquaculture sectors continue to face difficulties related to aquatic animal diseases, climate, and environmental change, flooding in aquaculture areas, as well as higher production costs. In addition, Thailand’s most recent crisis, the COVID-19 pandemic, has impacted demand for fishery products due to a lack of confidence in food safety. This is a problem and a challenge that affects the agriculture production system, trade, and export all over the world.



Thailand recognizes and promotes the importance of artisanal fisheries and aquaculture. Each country should identify measures to be taken to manage its fisheries resources and allocate them in a fair and sustainable manner. Furthermore, improving aquaculture farmers' competitiveness at the local level to increase production efficiency by encouraging the aggregation of farmers and the formation of a network, developing products to meet standards, and monitoring aquaculture activities in accordance with the Best Practices are also required to improve the image and customer confidence.

The Department of Fisheries appreciates SEAFDEC for working hard with Thailand and the other member countries to support artisanal and small-scale fisheries and aquaculture. For the past years, Fisheries officers of the Department of Fisheries have been trained and promoted to be the trainers of Ecosystem Approach to Fisheries Management (EAFM), together with the applied EAFM for more than 20 areas along the coast of Thailand both the Andaman Sea and the Gulf of Thailand, especially in Krabi and Ranong. Thailand has also been chosen as one of the studied countries of Gender Dimension in the Value Chain of Small-scale Fisheries and Aquaculture in Southeast Asia. The SEAFDEC also helps promote gender equality and equity in decision-making processes and organizations, fisheries technologies, and policies.

Thank you very much to SEAFDEC for those mentioned works and other outstanding movements SEAFDEC has made so far for Thailand and its member countries.

I would like to take this opportunity to congratulate the International Year of Artisanal Fisheries and Aquaculture 2022 (IYAFA 2022) and wish that this achievement will highlight the vital role of artisanal fisheries and aquaculture at the national, regional, and global levels.

*Mr. Chalermchai Suwannarak*  
SEAFDEC Council Director for Thailand and  
Director-General, Department of Fisheries of Thailand

# Message from the SEAFDEC Council Director for Viet Nam



Viet Nam is honored to join the celebration of the IYAFa 2022 declared by the United Nations (UN) General Assembly and lead by FAO. The IYAFa 2022 is a valuable opportunity to recognize the contributions of small-scale artisanal fishers, fish farmers, and fish workers for food security and nutrition, poverty alleviation through the responsible and sustainable use of aquatic resources, capture fisheries, and aquaculture.

Lying along 3,260 km length of the coastline, small-scale coastal and marine fisheries provide employment, livelihoods, and income for millions of coastal people and contribute to the national economy of Viet Nam. The fisheries sector of Viet Nam has been achieving remarkable results and significantly contributing to the country's socioeconomic development in the last decades. The fishery production of Viet Nam increased significantly from 1.3 million t in 1995 to 8.4 million t in 2020 with the average annual growth rate of 8%; the aquaculture production increased 11 times with an annual average growth rate of 10%.

Viet Nam acknowledges the important role of small-scale fishers, fish farmers, and fish workers and fully support them to achieve food security and nutrition, eradicate poverty, and sustainably use natural resource. Viet Nam have been making a great effort in combating IUU fishing especially in the time of the COVID-19 pandemic. We are all aware that addressing problems requires collective efforts with SEAFDEC.

Through the collaboration with SEAFDEC, many effective projects have been implemented in the Member Countries including Viet Nam including providing assistance and guidance for the development and application of technologies that optimize the utilization of catches, reduction of post-harvest losses, sustainable utilization of fishery resources, improvement of fisheries and marine habitats management. We also appreciate SEAFDEC for the efforts and guidance to eliminate IUU fishing in the region.

We would like to take this opportunity to extend our utmost appreciation to SEAFDEC and its collaborating organizations and agencies for providing generous support and cooperation throughout the past years. We are looking forward to fruitful cooperation with SEAFDEC, FAO, and UN to implement activities that are beneficial to the global food system.

*Dr. Tran Dinh Luan*

SEAFDEC Council Director for Viet Nam and  
Deputy Director General of Directorate of Fisheries

# Message from the Former Special Advisor to SEAFDEC



It was around 1995 when I first started to show a special interest and concerns on the small-scale fisheries. As the first global initiatives toward sustainable fisheries development, FAO and the member countries, especially the developed fishing nations were eager to be able to implement the Code of Conduct for Responsible Fisheries (CCRF). However, as the former Director of the Fisheries Policy and Planning Division of FAO promoting the implementation of CCRF especially in the developing member countries,

I had some concerns on the responses from these countries which had generally shown lower interest in the implementation of CCRF. Such response could be attributed to the emphasis on the large-scale fisheries in the process of the formulation of the CCRF. Under such circumstances, most developing countries that were not involved in high-sea fisheries had lost interest in involvement in the implementation of the CCRF.

Above situation was one of the reasons why I left FAO and joined SEAFDEC in 1997. However, SEAFDEC at the time was an implementation institute of JICA training programs, not a regional organization which could develop regional policies and technical developments based on the interest of its Member Countries. I, therefore, initiated the program on the regionalization of the CCRF. The major points of the program were to develop guidelines for the Code of Conduct with a specific focus on the small-scale fisheries and aquaculture in the Southeast Asian region. The program had published five regional guidelines through numerous meetings with the ASEAN Member States (AMSs) and was completed in 2005.

In 2007, SEAFDEC was awarded the Margarita Lizarraga Medal Award by FAO. The award was specially developed for the individuals and organizations who substantially contributed to the implementation of CCRF. In 2008, The voices of SEAFDEC Member Countries stressed the importance of the small-scale fisheries at the Committee on Fisheries (COFI), FAO. The voice of the AMSs was greatly supported by many developing countries in other regions, and overwhelmingly proposed FAO to implement the special program for the small-scale fisheries. I am very proud that such SEAFDEC initiative at COFI in 2008 triggered the development of the “International Year of Artisanal Fisheries and Aquaculture.” I am also proud that I can observe the outstanding regional roles of SEAFDEC on small-scale fisheries and aquaculture.

*Professor Dr. Yasuhisa Kato*

Former Special Advisor to SEAFDEC (1997–2008)

# Message from the local fisher



Congratulations on the celebration of the International Year of Artisanal Fisheries and Aquaculture (IYAF) 2022, especially to the SEAFDEC and FAO for leading this endeavor.

The Molocaboc Sea Ranchers Association (MOSRA), together with our tri-party collaborators, the SEAFDEC Aquaculture Department (AQD) and the Government of Japan Trust Fund (GOJ-TF) through its socioeconomics and farming systems team, and the local government of Sagay City through its officials in Barangay Molocaboc and Sagay Marine Reserve, humbly express our gratitude and jubilation on the success of our Community-Based Resource Enhancement (CBRE) Project initiated in 2006. The science-based stocking of hatchery-reared juveniles of abalone (*Haliotis sinine*) and sandfish (*Holothuria scabra*) in our nearshore waters beginning in 2011, after years of social preparation, has immensely uplifted our role in ensuring the sustainability of our aquatic resources and the resilience of our livelihoods.

For us artisanal fishers, the retired men and women and playful children without boats and fishing gears, gleaning in our walkable coasts during low tide make us feel that our Merciful God has reserved the marginal shallow waters for us to be our source of sustenance and livelihood. Thanks profoundly to the men and women of aquaculture for not only producing hatchery-reared juveniles for grow-out to add to fish food production, but also for the enhancement of threatened fisheries. The CBRE project has been turned-over by AQD in 2019 to the Sagay City government and MOSRA. It attests the success of the social experiment that fisherfolks can be responsible partners in resource enhancement and habitat restoration.

For these, we honor the late Mr. Mariano Jarina, fisherfolk and MOSRA leader who welcomed the CBRE project and promoted its principles. He bid farewell to this world in 2020 sighing to his daughter, Janet Jarina, “for MOSRA to continue the SEAFDEC project”. Truthfully, it was advised from the start of the project that resource enhancement benefits may not be for the project participants themselves, but a legacy for the next generation and beyond.

*Mr. Mariano Jarina*

Molocaboc Sea Ranchers Association (MOSRA)  
Barangay Molocaboc, Sagay City, Philippines  
(the message was prepared by Dr. Nerissa D. Salayo,  
CBRE Study Leader, SEAFDEC/AQD)

# Message from the FAO staff



**Small in scale, big in value:**

## **Towards the implementation of the SSF Guidelines in Southeast Asia**

In 2022, the world celebrates the **International Year of Artisanal Fisheries and Aquaculture**, under the slogan “Small in scale, big in value.” FAO and SEAFDEC have a long history of collaboration in support of this important sector, which provides employment to 5.2 million people and accounts for about eight tonnes of capture fisheries production in the Southeast Asian region.

A milestone event was the first global **‘Conference on Small-Scale Fisheries – Securing sustainable small-scale fisheries: Bringing together responsible fisheries and social development’** in Bangkok in 2008, co-organized by FAO and the Government of Thailand and convened in collaboration with SEAFDEC and WorldFish. A key outcome of the conference was a call for an international instrument on small-scale fisheries, which was answered with the endorsement of the **FAO Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines)** by the FAO Committee on Fisheries in 2014.

In line with paragraph 13.6 of the document itself to promote the development of regional plans of action for their implementation, SEAFDEC collaborated in the organization of a **regional workshop for Southeast Asia** in 2015 with the Republic of Indonesia, FAO, and the BOBLME Project to discuss implementation of the SSF Guidelines.

This was followed by a SEAFDEC organized **regional technical consultation** in Thailand in 2016, which agreed on a regional approach to implement the SSF Guidelines. An **expert workshop** on the human rights-based approach and gender equality in 2017 followed and produced a **policy brief** on applying human rights-based and gender equality approaches to small-scale fisheries in Southeast Asia and a **practical guide for gender analysis** based on the principles of the SSF Guidelines. SEAFDEC also co-organized the **Regional Workshop on Assessing the Needs of AMS in Implementing the SSF Guidelines to Support Access to Markets** in 2020.

This thorough process allowed us to identify key issues and challenges and lay the ground for addressing them. IYafa now provides the opportunity to use the Regional Plan to implement the SSF Guidelines in Southeast Asia, to drive real change on the ground.

*Ms. Nicole Franz*  
Fishery Planning Analyst  
Food and Agriculture Organization of the United Nations



# Message from INFOFISH



The role of small-scale fisheries (SSF) in the global fisheries value chain without doubt is crucial and significant. According to FAO, in 2018, an estimated 50.38 million people were directly engaged in fisheries and aquaculture in Asia, representing 85% of the global total. A lion's share, if not millions more, are involved in post-harvest processing and marketing, many of them women. In Southeast Asia, home to some of the biggest fishery producers in the world, small-scale fishing and aquaculture play complementary roles in contributing greatly to food security, poverty alleviation, and employment opportunities.

Primarily due to expansion of aquaculture, Southeast Asian SSF have become a growing source of fishery species for trade in export markets, thus representing an important source of foreign currency earnings. In terms of the value of aquaculture production, the 10 countries combined earned around USD 23.8 billion in 2014 (UN FAO FishStatJ, 2016). However, the sector remains lagging behind for reasons related among others to poverty and significant representation in national decision-making processes in many parts of the world. Nevertheless, evidently, in Asia, the sector has come a long way, thanks to the various initiatives, activities, and efforts taken by key stakeholders towards the promotion and sustainable development of small-scale fisheries.

“The development and implementation of socially, economically, and environmentally sustainable small-scale fisheries policies, legislation, and legal frameworks” mentioned in the SSF Guidelines remains a major challenge throughout Asian small-scale fishing communities. A recently acknowledged challenge is that the SSF sector is poorly prepared to deal with the surge of digitalization and e-commerce in the changing marketplace. There are also logistical problems related to the fact that the products are perishable and need timely transit and proper handling. Equal participation of women in decision-making processes, access to micro-finance, technologies, and knowledge, and mainstreaming of gender equity into policies and legislation in accordance with relevant international human rights law are areas that can further accelerate development.

The IYafa 2022 is indeed a milestone that deserves a global celebration of the sector as aptly heralded by the tagline “Big in value, small in scale.”

I take this opportunity to congratulate the SEAFDEC Secretariat on the publication of the **Small-scale Fisheries of Southeast Asia: A Regional Digest** compiling all major outputs and outcomes of SEAFDEC projects and activities related to the small-scale fisheries and aquaculture sector since the 1960s. We believe the publication will be an instrumental witness to the development of small-scale fisheries in the region and we thank you for inviting INFOFISH to contribute a message in support of the sector.

*Ms. Shirlene Maria Anthony*  
Director, INFOFISH, Malaysia

# Message from the International Collective in Support of Fishworkers



The International Year of Artisanal Fisheries and Aquaculture (IYAFA) provides a great opportunity to proclaim to the world the diversity and richness of small-scale artisanal fisheries and aquaculture in the Southeast Asian region – both marine and inland. While women are more visible in post-harvest activities with an amazing repertoire of skills, processes and products, men are more pronounced in fishing and fish farming activities. IYAFA also provides an occasion to celebrate the culture

and traditions of small-scale artisanal fishers, fish workers and aquaculture farmers and their communities often living and working in remote and challenging environments. It is instructive to recall that in spite of being hit hard by COVID-19, the inland and marine small-scale fisheries subsector thus far have been resilient in supplying fish to the domestic market and has reinforced its role in providing food security to the local people during a crisis.

It is an opportune moment now to recognize the vital role of these subsectors and to create conditions to retain and attract youth to these activities through decent employment and income along the value chain, together with effective fisheries management and social protection measures. Many threats, in addition to the vulnerability to climate change and extreme weather events, facing, for example, the small-scale fisheries subsector, such as loss of access to the coast/shore and fishing grounds still make it more precarious.

Considering that the instrument, Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines), provides a toolbox to fix many of the threats and other persistent problems facing small-scale fisheries in the region, governments and civil society are encouraged to apply the SSF Guidelines to address these threats. These tools include, in particular, the human rights-based approach that makes it necessary for different arms of the government to work together towards common outcomes such as conservation and sustainable use of aquatic living resources, food security, and social development and wellbeing of fishing communities.

We hope by the end of 2022 there is greater awareness among the larger public about the role of small-scale fisheries and aquaculture in food production, the traditional ecological knowledge and rich cultural diversity of fishing communities, and about the role of women in fisheries and aquaculture. We also hope that 2022 provides the impetus to the ASEAN Member States to develop coherent and meaningful policies and legislations at various levels in consultation with fishing communities and civil society organizations to promote and protect small-scale fisheries and aquaculture as well as to empower fishing communities.

*Mr. Sebastian Mathew*

International Collective in Support of Fishworkers (ICSF), India

# Message from the Sustainable Development Foundation



SEAFDEC has collaborated with the Sustainable Development Foundation (SDF) in promoting ecosystem-based and multistakeholder collaboration towards sustainable fishery and habitat management in terms of fishery knowledge management and promoting pilot-tested and evidence-based approach addressing degradation of fishery resources. Another important collaborative efforts were the recognition of rights and inclusion of small-scale fishers (SSF) and women fishers based on the SSF Guidelines.

We found that small-scale fishers, women fishers, and indigenous peoples are the largest stakeholders in fishery management. They have significant role to restore, conserve, protect, and co-manage local aquatic and coastal ecosystems. However, this has not been formally recognized in legislations. So far, SSF women fishers have been invisible and neglected. Most often, they have not been ensured inclusion and meaningful participation in fishery and habitat management. Present management does not support equitable distribution of the benefits yielded from responsible management of fisheries and ecosystems rewarding small-scale fishers and fish workers, both men and women. Small-scale fishing communities need to have secured tenure rights to the resources that form the basis of their social and cultural well-being, livelihoods, and sustainable development.

SDF is delighted to learn about SEAFDEC active role in the IYafa celebration as this is among its agenda in promoting SSF fishery rights with special attention to equitable participation of women, vulnerable, and marginalized groups – in the design, planning, and, as appropriate, implementation of management measures, including protected areas, affecting their livelihood options. Participatory management systems, such as co-management, have been promoted in accordance with national law to ensure the establishment of monitoring, control and surveillance systems or promote the application of existing ones applicable to and suitable for small-scale fisheries. SDF commits to working in hand with SEAFDEC to move forward in taking appropriate measures to identify, record, and respect legitimate tenure rights of SSF and women fishers being recognized, respected and protected, and enjoyed by small-scale fishing communities while recognize and safeguard publicly owned resources that are collectively used and managed, particularly by small-scale fishing communities.

*Dr. Rewadee Prasertcharoensuk*

Director, Sustainable Development Foundation, Thailand



# Message from the Fishery Biologist, Department of Fisheries, Thailand



I attended the SEAFDEC Training of Trainers Essential Ecosystem Approach to Fisheries Management course in 2014 and I applied the knowledge I have obtained to the operations of my workplace at the Chumphon Marine Fisheries Research and Development Center, Department of Fisheries, Thailand. The center is in charge of managing marine fisheries resources in the central Gulf of Thailand, specifically in the provinces of Prachuap Khiri Khan, Chumphon, and Surat Thani, by holding training courses on fishery resource management using EAFM for seven fishing communities in the area for them to familiarized with the EAFM principles and management guidelines and prepared the plan for managing fisheries resources in their own area. This triggered participation of many sectors, including fishers groups, public sector, private sector, local government organizations, educational institutions, financial institutions, as well as NGOs, to be involved in fisheries resource management by jointly supporting the operations, budget, information, governance, and others. It was found that fishers were aware and rationally focused on conservation and restoration of fishery resources in front of their own homes, and this has restored the ecosystem.

Moreover, the center has established a project management plan based on EAFM principles which operates projects in all regions of Thailand, including the Gulf of Thailand and the Andaman Sea. Under this initiative, I am responsible for training other personnel in EAFM principles as well as invited by SEAFDEC to be a speaker in training courses on fishery resource management using ecological approach by educating the Department of Fisheries officials and fishers groups. I have applied techniques as a speaker and moderator as well as conflict management concept to resolve conflicts. I also organize public hearings to develop measures for the management of marine fisheries resources in Thailand.



*Coastal community management map in  
Bangmaprao, Chumphon province, Thailand*



*Mr. Akanit Kuapuang*  
Fishery Biologist  
Chumphon Marine Fisheries Research and  
Development Center, Department of  
Fisheries, Thailand

**Chapter 5: Milestones of initiatives promoted, project implemented, and policy framework/guidelines developed by SEAFDEC, 1967–2024**



**1967****Establishment of SEAFDEC****1977****Barangay Shrimp Hatchery project**

Platon, R. R. (1978). Design, operation and economics of a small-scale hatchery for the larval rearing of sugpo, *Penaeus monodon* Fab. Tigbauan, Iloilo, Philippines: Aquaculture Department, Southeast Asian Fisheries Development Center. <https://repository.seafdec.org.ph/handle/10862/64>

**1991****Community Fishery Resource Management (CFRM) Project in Malalison Island off western Panay Island, the Philippines**

Agbayani R. F. (1997). Community fishery resources management in Malalison Island, Philippines, pp. 209-219. In: Bagarinao TU, Flores EEC (eds) Towards Sustainable Aquaculture in Southeast Asia and Japan. SEAFDEC Aquaculture Department, Iloilo, Philippines. <https://repository.seafdec.or.th/handle/20.500.12067/948>

**1999****The concepts of co-management, community-based fisheries management, and rights-based management were initiated with the pilot site in Bang Saphan Bay, Prachuap Khiri Khan Province, Thailand**

Anuchiracheeva, S., Boonsit, L., & Gamucci, O. D. (2005). Towards rights-based fisheries: The case of Bang Saphan bay. *Fish for the People*, 3(2), 22-36. <https://repository.seafdec.org/handle/20.500.12066/706>

**2000****Community-Based Resource Enhancement (CBRE) project, Molocaboc Island, Sagay City, the Philippines**

Salayo, N. D., *et al.* (2016). Community-based stock enhancement of abalone, *Haliotis sinine* in Sagay Marine Reserve: Achievements, limitations and directions. In H. Kawamura, T. Iwata, Y. Theparoonrat, N. Manajit, & V. T. Sulit (Eds.), Consolidating the Strategies for Fishery Resources Enhancement in Southeast Asia. Proceedings of the Symposium on Strategy for Fisheries Resources Enhancement in the Southeast Asian Region, Pattaya, Thailand, 27-30 July 2015 (pp. 131-135). Samutprakan, Thailand: Training Department, Southeast Asian Fisheries Development Center. <https://repository.seafdec.or.th/handle/20.500.12067/708>

**2001****Integrated Coastal Resources Management**

Regional Seminar on Integrated Coastal Resources Management in Southeast Asia, & Southeast Asian Fisheries Development Center, Training Department (Eds.). (2007). Proceedings of the regional seminar on integrated coastal resources management in Southeast Asia: Lessons learned through integrated coastal resources management in Pathew District, Chumphon Province (ICRM-PD), 10-12 July 2007 at Chumphon Marine Fisheries Research and Development Center, Chumphon Province, Thailand. Samut Prakarn, Thailand: Training Department, Southeast Asian Fisheries Development Center. <https://repository.seafdec.or.th/handle/20.500.12067/364>

**2001****The ASEAN-SEAFDEC Conference on Sustainable Fisheries for Food Security in the New Millennium: “Fish for the People”**

SEAFDEC. (2001). Proceedings of ASEAN-SEAFDEC Conference on Sustainable Fisheries for Food Security in the New Millenium, Vol. 1–2. <http://repository.seafdec.org/handle/20.500.12066/1073>



**2002****Locally-based Coastal Resource Management**

Yamao, M., & Suanrattanachai, P. (2002). Background and Project Proposal of Locally Based Coastal Resources Management in Pathew District, Chumporn Province (LBCRM-PD). Training Department, Southeast Asian Fisheries Development Center. <https://repository.seafdec.or.th/handle/20.500.12067/441>

**2001-2005****“Rehabilitation of Fisheries Resources and Habitats/Fishing Grounds through Resource Enhancement” project****2002-2005****The Special 5-year Program on Sustainable Fisheries for Food Security in the ASEAN Region****2003****“Introduction of Set-net Fishing to Develop Sustainable Coastal Fisheries Management in Southeast Asia: Case Study in Thailand” project**

SEAFDEC. (2008). Set-net Fishing Technology Transfer for Sustainable Coastal Fisheries Management in Southeast Asian. Training Department, Southeast Asian Fisheries Development Center. TD/ RES/107. <https://repository.seafdec.or.th/handle/20.500.12067/601>

**2000-2003****“Application of Hazard Analysis Critical Control Point (HACCP) in the fish processing industry in Southeast Asia”**

Yeap, S. E., & Ira Hariono (Eds.). (2003). The Application of HACCP in the Fish Processing Industry in Southeast Asia 200-2003. Marine Fisheries Research Department, Southeast Asian Fisheries Development Center. <http://www.seafdec.org/documents/2014/10/haccp-fish-processing-industry-southeast-asia.pdf>

**2004****A Guide to Make and Set Durable Artificial Reef Fish Aggregating Devices (ARFADs) for Coastal Areas**

Ahmad, A., Mahyam, M. I, Sollahuddin, A. R., & Jamaludin Ibrahim. (2004). A Guide to Make and Set Durable Artificial Reef Fish Aggregating Devices (ARFADs) for Coastal Areas. Kuala Terengganu: SEAFDEC/MFRDMD. <http://repository.seafdec.org.my/handle/20.500.12561/286>

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2013-  
2019

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2013-  
2019

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2014

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E-EAFM Materials for Trainers. Available on TD website [<http://www.seafdec.or.th/home/organization-structure/33-eafm/168-e-eafm-materials-for-trainers>] and also refer to the EAFM Learn website [<http://eafmlearn.org/>]

2014

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2015

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2020

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2020

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2020-  
2021

### **“Gender Dimension in the Value Chain of Small-scale Fisheries and Aquaculture in Southeast Asia” project**

[www.seafdec.or.th/home/td-projects/gender-dimension-small-scale](http://www.seafdec.or.th/home/td-projects/gender-dimension-small-scale)

2020-  
2024

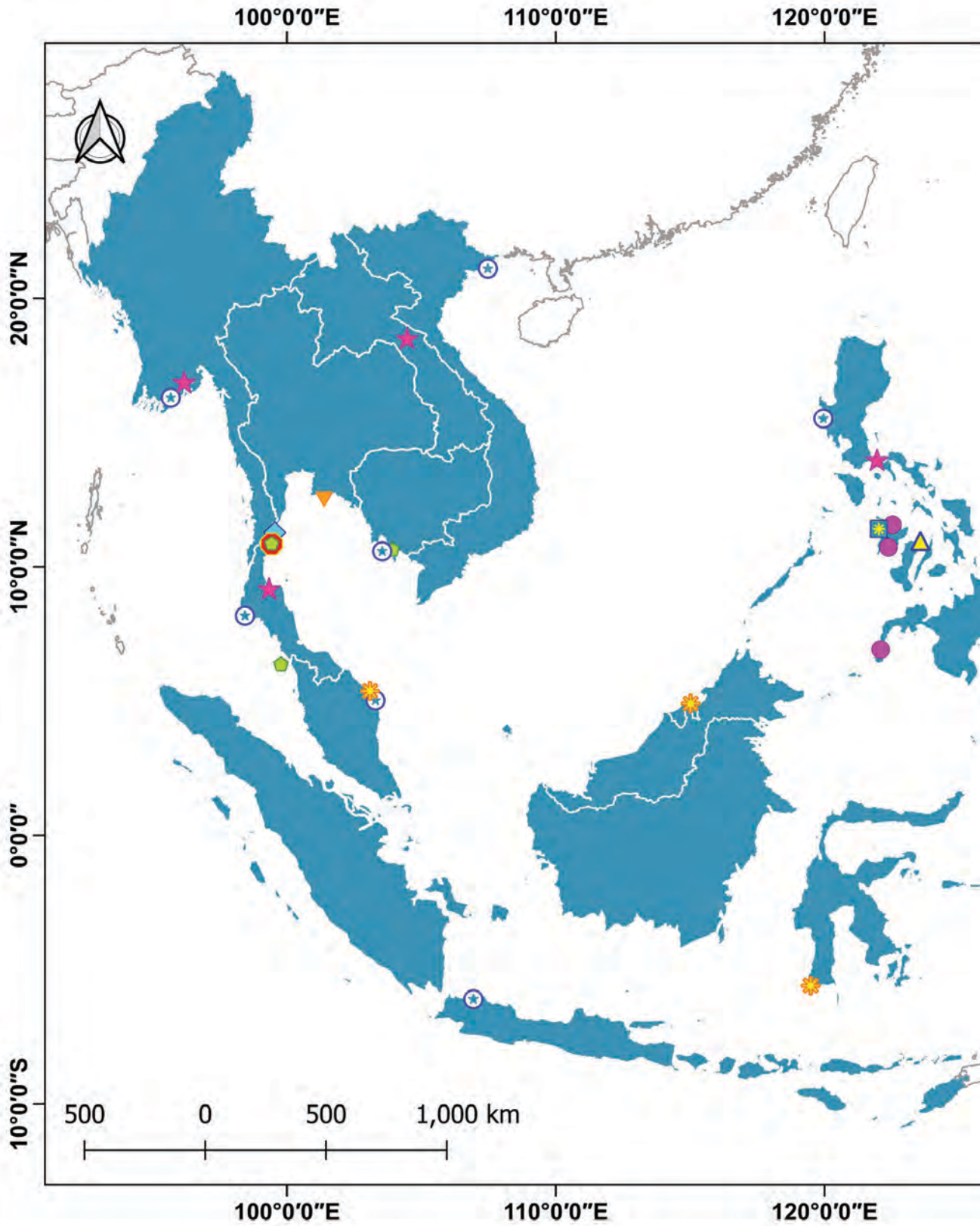
### **“Small-scale Fisheries Management for Better Livelihood and Fisheries Resources” project**

[www.seafdec.or.th/home/td-projects/ssf-livelihood](http://www.seafdec.or.th/home/td-projects/ssf-livelihood)





**Chapter 6: Sites of projects on  
small-scale fisheries and aquaculture  
implemented by SEAFDEC**

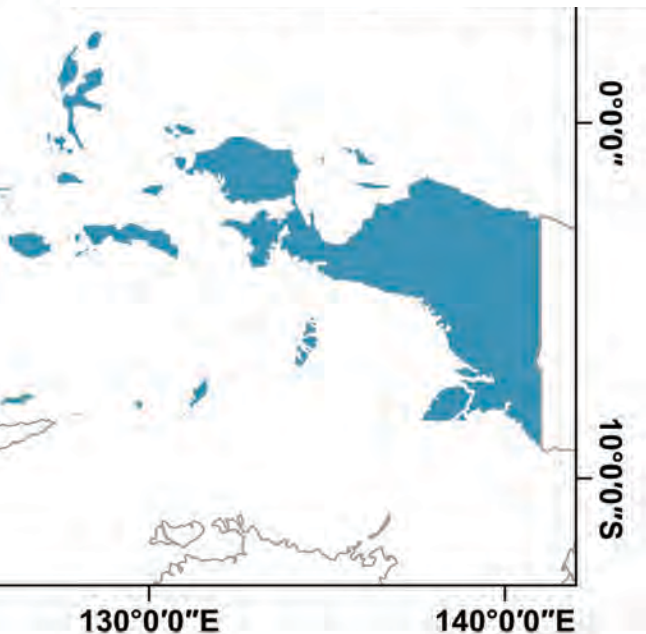


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Legend

- Barangay Shrimp Hatchery project
- ◆ Capacity Improvement of Fisheries Community for Fisheries Management and Alleviation of Poverty
- Community Fishery Resource Management (CFRM)
- ▲ Community-Based Resource Enhancement (CBRE)
- ☀ Enhancing Coastal Community Resilience for Sustainable Livelihood and Coastal Resources Management
- ★ Gender Dimension in the Value Chain of Small-scale Fisheries and Aquaculture in Southeast Asia
- Integrated Coastal Resources Management
- ▼ Introduction of Set-net Fishing to Develop Sustainable Coastal Fisheries Management in Southeast Asia: Case Study in Thailand
- ⊕ Promotion of Rights-based Fisheries and Co-management towards Institutional Building and Participatory Mechanism for Coastal Fisheries Management: Socio-economic survey on SSF
- ◆ The concepts of co-management, community-based fisheries management, and rights-based management



*Sites of projects on small-scale fisheries and aquaculture in the Southeast Asia implemented by SEAFDEC from 1967-2024*

## Regional projects/initiatives/guidelines relevant to small-scale fisheries initiated and implemented by SEAFDEC from 1967–2024

- Rehabilitation of Fisheries Resources and Habitats/Fishing Grounds through Resource Enhancement
- The Special 5-year Program on Sustainable Fisheries for Food Security in the ASEAN Region
- Application of Hazard Analysis Critical Control Point (HACCP) in the fish processing industry in Southeast Asia
- A Guide to Make and Set Durable Artificial Reef Fish Aggregating Devices (ARFADs) for Coastal Areas
- The Special Five-Year Program (Aquaculture Component)
- Regional Guidelines for Co-management Using Group user Rights for Small-scale Fisheries in Southeast Asia
- Handbook on Collecting Fishery Statistics for Inland and Coastal Fisheries
- Good manufacturing practice (GMP) for Small and Medium-sized Fish and Fish Products Pre-Processing Establishments in ASEAN
- Promotion of Rights-based Fisheries and Co-management towards Institutional Building and Participatory Mechanism for Coastal Fisheries Management
- Good Manufacturing Practice (GMP) for Small and Medium-sized Traditional Fish Products Processing Establishments in ASEAN
- Regional Guidelines for the Promotion of “One Village, One Fisheries Product” (FOVOP) in the ASEAN Region
- Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region Towards 2020
- Enhancing the Compilation and Utilization of Fishery Statistics and Information for Sustainable Development and Management of Fisheries in Southeast Asian Region
- Human Resource Development for Sustainable Fisheries
- Fisheries and Habitat Management, Climate Change and Social Well-being in Southeast Asia
- Ecosystem Approach to Fisheries Management (EAFM)
- Promotion of Responsible Utilization of Inland Fisheries in Southeast Asia
- Promotion of Sustainable Fishery Resources Enhancement Measures in Critical Habitats/Fishing Grounds in Southeast Asia
- Promotion of Sustainable Aquaculture and Resource Enhancement in Southeast Asia
- Inland Fisheries Data Collection application
- Resolution and Plan of Action on Sustainable Fisheries for Food Security for the ASEAN Region Towards 2030
- Small-scale Fisheries Management for Better Livelihood and Fisheries Resources (2020–2024)



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## Southeast Asian Fisheries Development Center (SEAFDEC)

### What is SEAFDEC?

SEAFDEC is an autonomous intergovernmental body, established as a regional treaty organization in 1967 to promote sustainable fisheries development in Southeast Asia. SEAFDEC currently comprises 11 Member Countries: Brunei Darussalam, Cambodia, Indonesia, Japan, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam.

### Vision

Sustainable management and development of fisheries and aquaculture to contribute to food security, poverty alleviation and livelihood of people in the Southeast Asian region.

### Mission

To promote and facilitate concerted actions among the Member Countries to ensure the sustainability of fisheries and aquaculture in Southeast Asia through:

- i. Research and development in fisheries, aquaculture, post-harvest, processing and marketing of fish and fisheries products, socio-economy and ecosystem to provide reliable scientific data and information.
- ii. Formulation and provision of policy guidelines based on the available scientific data and information, local knowledge, regional consultations and prevailing international measures.
- iii. Technology transfer and capacity building to enhance the capacity of Member Countries in the application of technologies, the implementation of fisheries policies and management tools for the sustainable utilization of fishery resources and aquaculture.
- iv. Monitoring and evaluation of the implementation of the regional fisheries policies and management frameworks adopted under the ASEAN-SEAFDEC collaborative mechanism, and the emerging international fisheries-related issues including their impacts on fisheries, food security and socio-economics of the region.



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