

Towards sustainable
mangrove-shrimp
aquaculture through
capacity building and
partnership in the
Mekong River Delta



CBA2020-04MY-Le

2023



Project Reference Number: CBA2020-04MY-Le

Project Duration: from 1 October 2020 to 31 March 2023

Funding Awarded: 39,960 USD

Grant DOI: <https://doi.org/10.30852/p.13709>

Date of Publication: May 3, 2023

Project Leader and Contact Details: Dr. Le Thi Van Hue – The Center for Environment and Community Assets Development (CECAD)

Collaborators and Contact Details:

- Dinh Xuan Lap - International Collaborating Centre for Aquaculture and Fisheries Sustainability (ICAFIS)
- Phan Thi Ngoc Diep - Vietnamese Institute of Fishery Economics and Planning (VIFEP)

Recommended Citation:

Le, H., Phan, D., Dinh, L. (2023). *Towards sustainable mangrove-shrimp aquaculture through capacity building and partnership in the Mekong River Delta*. Project Final Report. Asia-Pacific Network for Global Change Research.



Asia-Pacific Network for Global Change Research (APN)

© 2023 The authors. Published by the Asia-Pacific Network for Global Change Research (APN) under the Creative Commons Attribution-NonCommercial 4.0 International (CC-BY-NC 4.0) licence.

All opinions, findings, conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of APN. While the information and advice in this publication are believed to be true and accurate at the date of publication, neither the editors nor APN accepts any legal responsibility for any errors or omissions that may be made. APN and its member countries make no warranty, expressed or implied, with respect to the material contained herein.

The use of geographic names, boundaries and related data on maps, and in lists and tables within this publication are not warranted to be error-free, nor do they imply any endorsement by APN.

1. Summary

Vietnam has used the “International Principles” to adapt legislation and develop its national program toward better management of shrimp farming. In addition to supporting the development of the International Principles for Responsible Shrimp Farming, projects were initiated to turn the principles into practices, which targeted better production, product quality, as well as environmental and socio-economic sustainability. It was reported by small-scale farmers in Tra Vinh province that the principles were difficult to apply and more importantly they focus on ecology and ignore the adaptation and social aspects. As a result, shrimp farmers have been experiencing declining yields and incomes and further clearance of mangroves has been witnessed. Vietnam has lost half of its mangrove forests over the past 30 years, notably to make way for shrimp ponds. This is a worrying trend, as healthy mangroves make important contributions to both climate change adaptation and mitigation, acting as a natural barrier against storms, sea-level rise, and erosion, and have the ability to store and sequester carbon. In addition, the mangrove ecosystem forms a natural habitat for many aquatic and terrestrial species and provides a source of livelihood for coastal communities. To reduce the pressure on mangrove forests, and simultaneously enhance smallholder livelihoods and resilience, this project supported the development and introduction of sustainable aquaculture models which restore and protect mangrove forests, while creating a more sustainable future for local shrimp farmers. We have strived to develop the Sustainable Mangrove-Shrimp Aquaculture Protocol—the first that addressed the challenges of the mangrove social-ecological systems, area of mangrove covers on each farm, the benefit of the local community and adaptation to climate change in Tra Vinh in particular and in the region in general. This project consisted of an in-depth literature review, needs assessment of the local area, and particularly, a capacity-building program centred on the sustainable development of shrimp aquaculture based on the Aquaculture Stewardship Council (ASC) international food standard that requires environmental and social awareness. Our goal was to facilitate this transition toward compliance with international sustainability requirements, as well as enhance public-private partnerships (PPP) between smallholder farmers, private shrimp exporters, and regional policymakers, so as to catalysed transitions to Eco shrimp farming in the region. As a result, the sustainable development of shrimp farming will be pursued and social equity, growth of rural incomes, poverty reduction, sustainable mangrove management can take place in the future.

2. Objectives

The aim of this project was to promote sustainable mangrove-shrimp aquaculture through capacity-building and public and private partnerships in the Mekong Delta to promote and sustain local livelihoods, as well as enhance the delivery of benefits and services of the mangrove forests.

This aim was achieved through the following objectives:

1. To develop Sustainable Mangrove-Shrimp Aquaculture Protocol for Tra Vinh through the literature review of successful sustainable shrimp farming models in the world as well as in the Mekong River Delta and consultation workshops with smallholder shrimp farmers at

the local level, policymakers, scientists, NGOs active in the region and the private sector engaged in shrimp farming industry.

2. To carry out a needs assessment and design training module.
3. To improve capacity for shrimp farmers, policymakers, NGOs active in the region, representatives of the Organic Farming Network and private sector through training workshops and policy dialogues.
4. To prepare a presentation at a national/international conference and an article in the Official APN Science Bulletin

3. Outputs, Outcomes and Impacts

Outputs	Outcomes	Impacts
Completion of the inception workshop	<p>The project objectives and activities were introduced to participants. The project was attended by relevant stakeholders in eco-shrimp farming value chain, including local government, private sector and local shrimp farmers.</p> <p>The project understood the challenges and desires of relevant stakeholders in development of eco-shrimp farming at the local level.</p>	The relevant stakeholders understood the project objectives and activities, which helped them actively participate in the project activities during the project implementation.
Completion of literature review of best practices of shrimp aquaculture and review of existing organic shrimp farming criteria	The basis for a Sustainable mangrove-shrimp aquaculture protocol to establish indicators and guidance that cover and control farming activities from seed production to feeding, processing, and shrimp consuming for eco-shrimp farming in Tra Vinh was created	Base on the literature review, the best practices of shrimp aquaculture and existing organic shrimp farming criteria was explored. The literature review was a reliable source for the project team to implement other project activities.
Completion of the consultation workshop for development of Sustainable Mangrove-Shrimp Aquaculture Protocol	Through the consultation workshop, the project understood the challenges and desires of shrimp farmers and relevant stakeholders when applying shrimp-farming standards to be	Local authorities and local shrimp farmers had opportunities to express their thoughts and opinions on certified shrimp-farming, how to get

	<p>certified. In the following day of the workshop, participants, especially the cooperative group members were also trained on the importance of the co-operative economy and how to develop and master the shrimp value chain. They also had the opportunity to outline their business model for their mangrove-shrimp products.</p>	<p>certification and which standards are suitable for them. They also expressed their desire and described difficulties in applying and registering for a shrimp certification.</p>
<p>Completion of the need assessment</p>	<p>The findings of the needs assessment show that in general, local managers, local private enterprises/companies and small shrimp farmers understood the role of the mangroves in mangrove-shrimp farming. Farmers had been trained on sustainable organic shrimp and wild shrimp farming before. However, due to farming practices and conditions of households as well as local infrastructure, organic shrimp farming was not carried out yet. Therefore, mangrove-shrimp farming did not achieve high yields, farmers still faced many difficulties in the farming process. The local shrimp farmers want to have a training course related to sustainable mangrove-shrimp farming techniques, connecting to a market or a purchasing company engaged in sustainable shrimp farming that is granted an International Certificate in Sustainable Forest Shrimp Farming (ASIC). They would like the project to implement a demonstration model so that they can apply and replicate themselves in the future. The timing to organize the training course was proposed to be in</p>	<p>The local authorities and local shrimp farmers' knowledge and experience related to shrimp farming, their training history and lessons learned, their knowledge gap and training needs, their suggestion of the training format, duration, and location were assessed. The needs assessment served as the basis for designing of a practical training model on mangrove ecosystems, international organic shrimp certification standards, and organic shrimp farming practices.</p>

	November 2022, the training duration should be about 2- 3 days.	
Completion of the training on “Towards sustainable mangrove shrimp farming through capacity building and partnerships in the Mekong Delta”	50 participants from the Tra Vinh Provincial Department of Agriculture and Rural Development; Tra Vinh Provincial Fisheries Sub-Department; Tra Vinh Provincial Forest Protection Department; Office of Agriculture Duyen Hai district; Agricultural Extension Center; Long Khanh Commune People's Committee; Members of the Mangrove-Shrimp Cooperative Group in Long Khanh commune; representatives of the mangrove-shrimp and rice-shrimp farming households; and Cuu Long Sea Products Company participated in the training. The participants were trained on mangrove-shrimp farming techniques towards sustainable certification and ASIC standards for mangrove-shrimp farming.	100% of trainees in the training course improved their awareness of mangrove protection, understood the significance of the role of the mangroves, gained a good base of knowledge about sustainable wild shrimp certification and market opportunities for sustainable wild shrimp product, sustainable mangrove - shrimp farming techniques, techniques to improve survival rate and quality of forest shrimp; 100% of staff of Sub-Department of Fisheries and Sub-Department of Forestry gained knowledge and orientation in mangrove-shrimp development; + 02 trainees who are working for fisheries enterprises had very good base of knowledge of mangrove-shrimp farming techniques for certification and had plans to start mangrove-shrimp chain linkages.
The completion of the field trip to an ecological shrimp farming model in Bac Lieu province	The field trips to Bac Lieu province helped participants observe the ecological shrimp farming model, with mangrove-shrimp farming techniques, two-stage shrimp rearing techniques, how to manage additional feeding for mangrove-shrimp and ecotourism model associated with mangrove-shrimp farming. The visit motivated a number of households to apply the model of mangrove-shrimp farming combined with eco-tourism in Tra Vinh in the near future.	
The completion of the policy brief	A policy brief of 4 pages was completed and printed before the	The brief spells out: a) the reason why reducing the pressure on

	<p>policy dialogue. The brief would be distributed to participants at the policy dialogue workshop.</p>	<p>mangroves and enhancing shrimp farmer livelihoods and resilience, and development and introduction of sustainable aquaculture models which coexist symbiotically with mangrove forests are needed; b) Key research findings; and c) Policy recommendations. The policy brief has been distributed to relevant stakeholders at the different levels in Tra Vinh province.</p>
<p>The completion of the Policy dialogue workshop</p>	<p>30 participants from the Tra Vinh Provincial Department of Agriculture and Rural Development; Tra Vinh Provincial Fisheries Sub-Department; Tra Vinh Provincial Forest Protection Department; Fisheries Association; Tra Vinh Provincial Agriculture and Fisheries Extension Center; Office of Agriculture Duyen Hai district; Agricultural Extension Center; Members of the Mangrove-Shrimp Cooperative Group in Long Khanh and Don Chau communes; Cuu Long Sea Products Company and Manager of Tai Think Phat Farm Cooperative in Ca Mau province participated in the Policy dialogue workshop.</p>	<p>The participants had an opportunity to look at that what they did from the start to the end of the project via a video <i>“Journey to Sustainable Mangrove-Shrimp Aquaculture Through Capacity Building and Partnership in the Mekong River Delta”</i>. Ms. Trang, Director of Tai Think Phat Farm shared with the participants the story of her cooperative’s organic shrimp farming in Ca Mau province. Trang also said how important the material area is, where to get the raw materials, whether farmers or cooperatives provide them? How to process products and how to bring products to large supermarkets in Vietnam.</p> <p>The policy brief was well received by all workshop participants. They now understand the reason why they need to switch to sustainable shrimp-mangrove farming in Tra Vinh. As such, they can conserve mangrove forests, which make important contributions to climate change adaptation and mitigation in the region.</p>

4. Key facts/figures

- 40 participants from the Tra Vinh Provincial Department of Agriculture and Rural development, Sub-department of Fisheries, Sub- department of Forest Protection, Cuu Long Sea Products Company in Tra Vinh, local shrimp farmers from Duyen Hai district, ICAFIS and Tra Vinh university participated in the inception workshop.
- 30 participants attending in the consultation workshop had opportunities to express their thoughts and opinions on certified shrimp-farming, how to get certification and what standards are suitable for them. They also expressed their desire and difficulties to apply and register for a shrimp certification.
- 50 participants, of which 22 participants from the Tra Vinh Provincial Department of Agriculture and Rural Development; Tra Vinh Provincial Fisheries Sub-Department; Tra Vinh Provincial Forest Protection Department; Department of Agriculture Duyen Hai district; Agricultural Extension Center; and 28 participants from Long Khanh Commune People's Committee; Members of the mangrove-shrimp cooperative group in Long Khanh commune; representatives of the mangrove-shrimp and rice-shrimp farming households; and Cuu Long Sea Products Company, were trained on mangrove shrimp farming techniques towards sustainable certification and ASIC standards for mangrove-shrimp farming.
- 50 participants, of which 22 participants from the Tra Vinh Provincial Department of Agriculture and Rural Development; Tra Vinh Provincial Fisheries Sub-Department; Tra Vinh Provincial Forest Protection Department; Department of Agriculture Duyen Hai district; Agricultural Extension Center; and 28 participants from Long Khanh Commune People's Committee; Members of the mangrove-shrimp cooperative group in Long Khanh commune; representatives of the mangrove-shrimp and rice-shrimp farming households; and Cuu Long Sea Products Company visited and learned a great deal from practical model on ecological shrimp farming and ecotourism model associated with mangrove-shrimp farming in Bac Lieu province.
- A policy brief of 4 pages has been distributed to relevant stakeholders at the different levels in Tra Vinh province to promote sustainable shrimp-mangrove farming in Tra Vinh province.
- 30 participants from the Tra Vinh Provincial Department of Agriculture and Rural Development; Tra Vinh Provincial Fisheries Sub-Department; Tra Vinh Provincial Forest Protection Department; Fisheries Association; Tra Vinh Provincial Agriculture and Fisheries Extension Center; Office of Agriculture Duyen Hai district; Agricultural Extension Center; Members of the Mangrove-Shrimp Cooperative Group in Long Khanh and Don Chau communes; Cuu Long Sea Products Company and Manager of Tai Thinh Phat Farm Cooperative in Ca Mau province participated in the policy dialogue workshop.
- A video *"Journey to Sustainable Mangrove-Shrimp Aquaculture Through Capacity Building and Partnership in the Mekong River Delta"* was shared with the policy dialogue workshop participants.

- 3 early-career professionals were trained during the process of implementing the project.

5. Publications

6. Media reports, videos and other digital content

1. [Project introduction](#)
2. [Stakeholders consultation workshop](#)
3. [Training course on sustainable mangrove-shrimp with certification and field trip to certified-shrimp models in Bac Lieu province](#)
4. [Video *“Journey to Sustainable Mangrove-Shrimp Aquaculture Through Capacity Building and Partnership in the Mekong River Delta”*](#)

7. Pull quotes

Phan Thi Ngoc Diep from the Vietnamese Institute of Fishery Economics and Planning (VIFEP) is also a member of the research team said: “The project initially contributed to Tra Vinh province’s implementation of Decision No. 3168/QĐ-UBND, No. 1925/QĐ-UBND and Plan No. 69/KH-UBND on action plan for fisheries development to 2030, vision 2050 in the province. In addition, the project has also contributed to raising awareness for local managers and farmers about aquaculture development trends in the new era, encouraging them to boldly and confidently change their minds and traditional farming habits to responsible, ecologically certified shrimp farming, and link up with value chain partners to increase product value and contribute to household income. The project also helps maintain and protect mangrove forests, contributing to environmental protection and reducing negative impacts of climate change.”

Head of the Long Khanh Mangrove-Shrimp Cooperative Group said: “I have attended several training courses on organic shrimp farming and my household has also been raising shrimp for many years. However, we still do not follow the right farming technique, shrimp are not stocked according to the seasonal schedule, leading to high mortality. Moreover, we don’t know how to get a certificate of organic shrimp farming so that we can sell it in the supermarket. Participating in this project, I have learned a great deal from simple things such as how to collaborate with each other and more importantly how to work as a team to receive eco-shrimp farming certification. Today, hearing the story of Tai Thinh Phat Farm Cooperative, I am inspired and we will definitely convert shrimp farming according to the model of Tai Thinh Phat. Only then can we have organic shrimp farming certification and only with organic shrimp certification can we sell finished shrimp in big supermarkets in Vietnam before we can export it abroad.”

8. Acknowledgments

We would like to express our sincere thanks to APN for the generous financial support, and the Tra Vinh Provincial Department of Agriculture and Rural Development; Tra Vinh Provincial Fisheries Sub-Department; Tra Vinh Provincial Forest Protection Department; Fisheries Association; Tra Vinh Provincial Agriculture and Fisheries Extension Center; Office of Agriculture Duyen Hai district; Agricultural Extension Center; Members of the Mangrove-Shrimp Cooperative Group in Long Khanh and Don Chau communes; Cuu Long Sea Products Company and Tai Thinh Phat Farm Cooperative in Ca Mau province for their active participation in the project, Bac Lieu Agricultural Extension Center, International Collaborating Centre for Aquaculture and Fisheries Sustainability (ICAFIS) and Vietnamese Institute of Fishery Economics and Planning (VIFEP), without which the project would not have been successfully implemented.

9. Appendices

Appendix 1: Inception Workshop

Appendix 2: Literature Review: Sustainable Shrimp Farming in the World and in the Mekong River Delta

Appendix 3: Consultation Workshop on Sustainable Shrimp-Farming Protocols

Appendix 4: ASIC SHRIMP STANDARDS and Aquaculture Social and Gender Standard

Appendix 5: Need assessment report

Appendix 6: Training and fieldtrip report

Appendix 7: Policy brief

Appendix 8: Policy dialogue