

# Extensive shrimp farming in the mangrove in the Mekong Delta

A success story from the Mekong Delta Climate Resilience Programme (MCRP)

## Introduction

The Mekong Delta has 73,372.04ha of mangroves along the coast in total, which plays a particularly important role in protecting more than 7,000 km of coastal dykes, estuaries and river banks. The mangroves also function as a soft wall against coastal erosion and deal with other extreme climate problems.

The mangroves with fertile soils and abundance of natural resource provide great potential for high-quality shrimp production, as well as protect the lives and livelihoods of coastal communities. As land for aquaculture is sparse and mangroves have to be protected, Vietnamese authorities have introduced a system in which the farmers are offered to co-protect the mangrove and take advantages of the water area for extensive aquaculture.

## Challenges

“Due to temperature fluctuation and extreme weather events, our harvest has been low or even destroyed, we have tried to change the farming techniques, but it did not work, productivity has been unstable. Although we took more shrimp seeds for stocking, we still cannot improve the output. Many young people don't want to be shrimp farmers anymore and move to the cities to get other jobs”, shared by a mangrove-shrimp farmer in Bac Lieu.

In a baseline study, MCRP found out that the development and urbanization have impacts on small households like coastal shrimp farmers, because discharged water from different sources, including industrial zones, is polluting water in the mangrove shrimp area, reducing the natural feed for shrimp. Moreover, most of local farmers have small-scale production, lack experience with complex climate issues and act on a trial-and-error basis with low yields and profits.



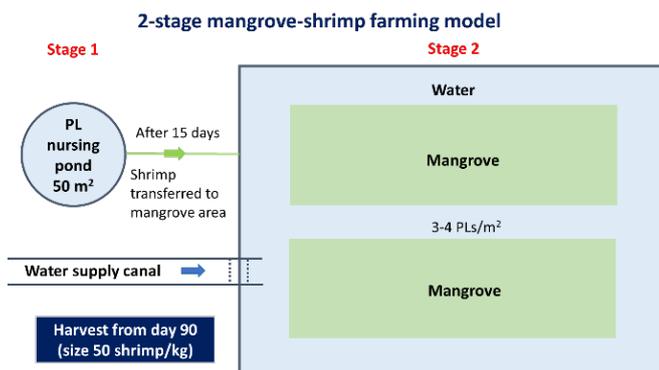
## Approaches

The Integrated Coastal Management Programme (ICMP) in 2014-2018, which focused on building capacity and improvement for mangrove-shrimp farms in the Mekong Delta, has initial success. Eight mangrove Farmers Interest Groups (FIGs) were set up and built capacity towards group management; water management for mangrove shrimp was successfully piloted in Bac Lieu and Ca Mau. The achievements were significant, increasing 45% of shrimp survival rate and 16% of farmer income compared with the previous crop. Total of 810 farmers with 31% of women was directly built capacity for better farming practices, group and micro-finance management.

However, the Mekong Delta is experiencing the negative effects of climate change and sea-level rise, leading to environmental degradation, saline intrusion and coastal erosion. Therefore, the traditional approaches for mangrove-shrimp farming are now inappropriate in the current situation.



The Mekong Delta Climate Resilience Programme (MCRP) has recognized that issues such as water quality, farming techniques, farmer group management, chemical & medicine usage, etc, need to be improved for effective and sustainable shrimp farming. MCRP approaches based on 04 key principles for the mangrove shrimp pilot model: (i) Shrimp seed quality: a shrimp hatchery is involved as a key factor to provide high-quality shrimp seed for the piloted model; (ii) Pond environment quality: Water quality is monitored daily for in-let water; (iii) Technical capacity: Mangrove-shrimp farmers are trained to apply 2-stage shrimp farming technique; and (iv) Mangrove forest management.



## Initial success

In 2020, MCRP has implemented the piloted 2-stage mangrove-shrimp models in Bac Lieu and Ca Mau. The initial results showed that shrimp survival rate at the first stage (nursing) significantly reached 80% in Bac Lieu and 95% in Ca Mau. The nursing stage provides small shrimp with a favourable condition to adapt to a new environment, improving shrimp survival and prey ability in the second stage. In addition, the water environment is monitored daily, probiotics is added to ensure good quality for the shrimp development.

As the harvest of mangrove shrimp is based on naturally tidal system, shrimp seed stocking is conducted every 2 months for the continuous harvesting by net-trap from day 90. The output of the piloted model is expected to be 220-300kg/ha/year, while the output of the traditional model is estimated at 70-150kg/ha/year.

In 2020, MCRP has cooperation with local partners to provide many technical trainings and other related topics for both male and female farmers, in which, women are involved to manage the farming process and mangrove management.

## Upscaling opportunities

The 2-stage mangrove shrimp model is considered as a good example for better management practices. The output is increased through better monitoring at the early stage of the farming process and better environmental control.

Currently, many farmers in the region have approached the piloted models to learn on how to apply the 2-stage mangrove-shrimp farming models. The Extension Service Centres in the Mekong Delta provinces also want to assess, adopt and widely transfer this model.

As an initial assessment, 2-stage mangrove-shrimp farming models is feasible for upscaling with highlighted issues as bellows:

- Appropriate with small-scale condition and capacity of farmers
- Farmers are ready to change the farming practices towards a more sustainable manner
- Co-benefits and accountability between mangrove usage and protection
- Possible to apply in another potential new-planted mangrove in the Mekong Delta
- Involved by small and medium enterprises for certifying shrimp for the global market
- Involved farmers as protector of mangrove
- Appropriate to the Government policy on the development of mangrove shrimp

*The Mekong Delta Climate Resilience Programme (MCRP) (2019-2021) is a development program funded by Viet Nam and Germany government and implemented by GIZ. MCRP supports Vietnamese authorities on sustainable development of the Mekong Delta, focusing on (i) Regional coordination, (ii) Land use and (iii) Coast & Water management.*

Published by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH  
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As at December 2020

Design GIZ-MCRP  
Photo credits GIZ  
Text Ngo Tien Chuong  
GIZ is responsible for the content of this publication.  
On behalf of Federal Ministry for Economic Cooperation and Development (BMZ)  
In cooperation with Viet Nam's Ministry of Agriculture and Rural Development (MARD)