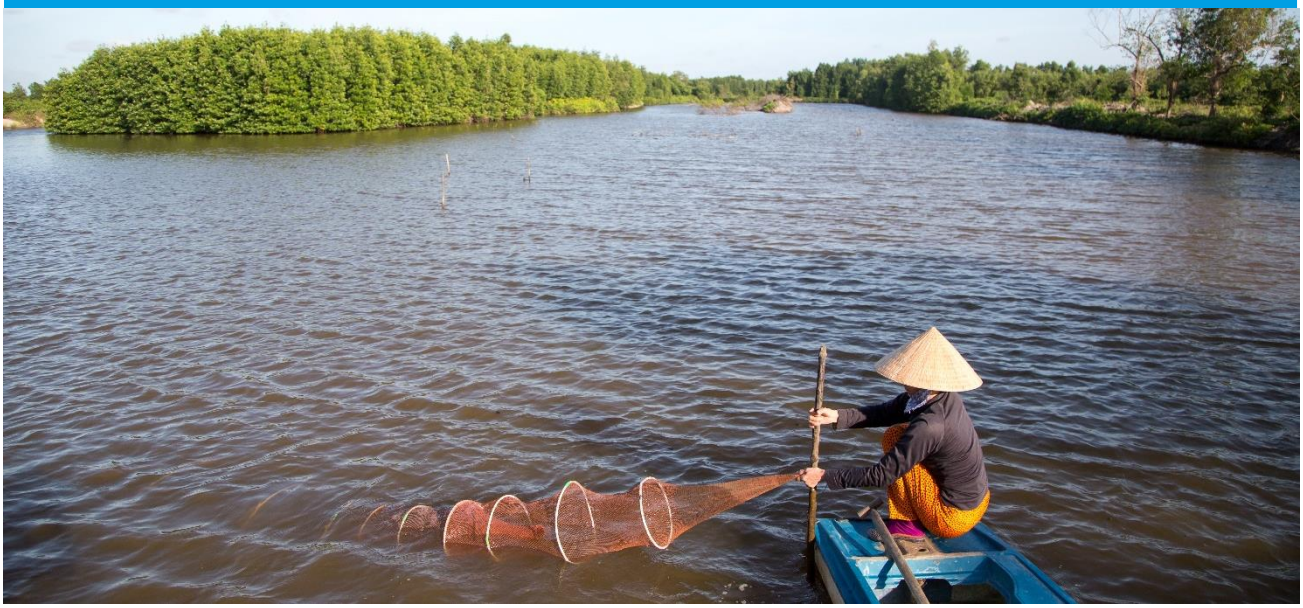
CASE STUDY

SYSTEMS CHANGE SERIES: The MAM project in Vietnam



Mangroves and Markets: A multi-stakeholder partnership for Ecosystem-based Adaptation

SNV projects directly benefit millions of people. We drive systems change to create an impact which sustains and grows over time and helps many more people work their way out of poverty, well beyond the scope of projects. In this series, SNV documents and explores lessons learned while creating systems change, with special attention to four key parameters of success:

- *leveraging structural finance*
- *kickstarting or transforming markets*
- *institutional embedding, and*
- *shifting values, norms and mindsets.*

The growing number of case studies will cover a variety of geographic contexts, (sub-) sectors and development challenges.

SNV's Mangroves and Markets project worked with local government, the private sector and producers to establish sustainable shrimp farming practices while protecting and increasing mangrove coverage. This led to increased resilience to climate change through Ecosystem-based Adaptation (EbA). First, a focus on building smallholder farmers' capacities on organic shrimp farming and opportunities to increase shrimp productivity supported improved livelihood resilience. Second, by engaging the shrimp industry on EbA and working with them helped to establish stable, long term relationships between farmers and overseas shrimp markets. Finally, farmers were incentivised to adopt EbA through new policies, regulations and innovative financing mechanisms such as Payments for Ecosystem Services (PES) and organic certification.

1. Context

A negative spiral where mangrove clearance for shrimp cultivation reduces the resilience and economic returns of this livelihood

Vietnam is the world's second largest exporter of shrimps: in 2017, its exports were valued at US$4 billion. Production in Vietnam grew between the 1980s and early 2000s to supply the growing global consumer demand. About 30% of all shrimp produced in Vietnam is grown in Ca Mau–the southern-most province in Vietnam, where an extensive, low-input and low-output form of aquaculture is practiced. Such a system relies heavily on managing shrimp ponds through regular tidal flows and maintaining a pond ecosystem that provides conditions for shrimp to grow to large sizes.
To increase the shrimp pond area, farmers across the Mekong Delta have historically cleared mangroves to establish new ponds. Before the project started, mangroves loss in the project's district was about 2% per year.

However, **without the protection of mangroves, shrimp yields in these extensive production systems decline** as the juvenile shrimp lose food sources, their habitat, and the protection that mangroves afford against heat stress. In many cases, shrimp farming became unprofitable and farmers abandoned their land.

Meanwhile, the impacts of sea level rise and extreme weather events are becoming more apparent in Ca Mau and other coastal provinces. Clearing of mangrove on the coast has led to coastal erosion as trees no longer attenuate waves and bind the soil. Mangrove loss also causes greenhouse-gas emissions as the trees, and their carbon-rich soils, are lost. Mui Ca Mau National Park, an internationally important wetland, borders the project site, was at risk from activities in the landscape surrounding it. The mangrove ecosystem, in both protected areas and on farmland, urgently needs to be preserved.

However, among relatively poor communities with limited and insecure livelihood options, the **shrimp industry is one of few employment options in the area.** A new model of shrimp production was needed in the area if the industry was to remain environmentally, socially and economically sustainable. Resources and capacity to kick-start such a model were very limited. Vietnam's farmer extension services focus on intensive shrimp cultivation not extensive systems such as those prevalent around the project site and many other coastal and brackish-water areas. Vietnam's Nationally Determined Contribution (NDC) states that only 30% of the required adaptation measures can be covered by the domestic budget. The NDC therefore calls for **stronger private sector investments in adaptation and scaling of sustainable agri- and aquaculture.**

2. SNV Engagement

It is in this context that in 2012 SNV and IUCN created the Mangroves and Markets project to show how private sector innovation, resources and investment can be mobilised toward country's adaption needs. The MAM project engages with farmers, the private sector and the public sector in an **innovative partnership to develop contracting of organically grown shrimps from smallholder farmers.** This was delivered through different work streams addressing barriers and entry points for different stakeholders, namely producers, the private sector and the public sector.

Table 1. The MAM project

Mangroves and Markets: Scaling up Mangrove Ecosystem Based Adaptation in the Mekong Delta (MAM)	
Lead	SNV and IUCN
Partners	2012 – 2020 in two phases, scaling out to additional provinces in phase 2
Time frame	Euro 3 million + $500,000 of in-kind support from private sector
Budget	Ca Mau, Ben Tre, and Tra Vinh provinces, Vietnam
Project area	German Federal Ministry for Environmental Protection (BMU)
Funding by	Producer support, value chain development, public policy influencing
Components	1) SNV and IUCN

First, SNV supported farmers to practice biodiversity-friendly and resilient farming practices – known as **integrated mangrove shrimp (IMS) or mangrove-shrimp polyculture.** This can be demonstrated through achievement of organic certification as the criteria are closely aligned. Training, capacity building and development of farmer groups played a key role, as well as work to build the supply of missing inputs (in this case post-larvae shrimp) and refine and demonstrate the recommended 'good agricultural practices' through model farms and collaboration with research institutes. Second, SNV worked with shrimp processors to demonstrate the benefits of the partnership and secure their commitment to working with and rewarding farmers for meeting these standards. Third, SNV worked with the provincial government to **mainstream mangrove-shrimp polyculture into national and provincial development plans** as both an EbA strategy and a tool for achieving the ambitious objectives of the Forest Code and National REDD+ Action Plan.

Ecosystem Based Adaptation

The Mangroves and Markets project uses nature-based solutions to deliver adaptation, also known as 'ecosystem-based adaptation' (EbA). By utilising the ecosystem services generated from increased mangrove coverage, resilience is increased in a number of ways. On farms, increased shade over ponds reduces the impacts of heat stress, and stabilises water quality. Off farms, stabilising land use ensures that coastal mangroves are protected and attenuate the impact of waves and prevent coastal erosion.
EbA approaches are identified as a priority in Vietnam's NDC. They can be highly cost-effective ways to reduce vulnerability, while also generating co-benefits through sustainable local development, as with the MAM project.

3. Systems change approach and results

Our innovative project design, and the combined expertise of SNV and IUCN, ensured the project's results would be sustainable beyond the project's duration, scalable ('horizontally', expanding to new districts, and 'vertically' by the successful development and implementation of a government decree), and catalyse continued implementation of EbA approaches by all stakeholders. This was achieved by leveraging finance, kickstarting a market for organic certified shrimps and scaling. The results and approach to these are explained below.

Leveraging finance through Payment for Forest Ecosystem Services

The provincial governments need to adopt a sustainable development trajectory for the Mekong Delta, and in particular transform the agricultural sector and ensure the resilience of the economy and people. By supplying

evidence and recommendations from the project's pilot phase, SNV supported Ca Mau's provincial government to develop a provincial regulation on **Payment for Forest Ecosystem Services (PFES).** This regulation expanded the country's highly innovative PFES policy into mangroves for the first time. It meant that companies that source from the designated forest areas are now required to pay an additional 500,000 VND per hectare per year to farmers.

A complementary activity in this endeavour was to **support the Ca Mau provincial agriculture planning process** and ensure this recognized the application of aquaculture PFES as a tool to achieve forest protection (in line with the national Forest Code). Embedding the PFES into provincial planning processes strengthens the long-term legitimacy to adopt and implement the PFES policy by the Ca Mau authorities. By the end of the project in 2019 five different companies were paying a total of $300,000 per year in PFES payments, protecting over 17,000 of mangrove trees on farms.

"Ca Mau is the first province in the country to establish and implement PFES in the aquaculture sector. That is a big help in strengthening mangrove conservation by the project." Chau Cong Bang (Vice director of DARD)

Kick-starting a market for organic certified shrimps

The project's early activities demonstrated farming methods that increase mangrove coverage and protect existing forests while improving yields through ecological and organic farming practices. Organically farmed shrimp are bigger and healthier, increasing farmers' income because of the price premiums they attract (About 4 cents per kg, or 2.5-5%). Without pesticides or antibiotics, input costs are reduced. In addition, farmers who farm organically are eligible to receive organic certification, and those who meet the threshold of mangrove cover are able to sell timber from their mangroves trees as well. **Through this approach farmer incomes increase and diversify, improving their resilience.** Protecting mangrove forests also becomes financially attractive, because farmers are rewarded in three ways for maintaining 50% mangrove coverage on their farm - (1) PFES, (2) the ability to sell mangrove timber, and (3) certification premiums - in addition to the yield gains they achieve. To raise farmers to these new standards, the project trains farmers, in cooperation with local agricultural and forestry authorities. It has established 60 model farms in support of knowledge transfer. The project also improved farmers' access to information on markets, weather and environmental conditions through a smart phone app, helping to improve their decision-making power. Over time, the project built a demand for training by farmers.

To ensure market access for the organic certified shrimps, the project collaborated closely with the country's largest, and world's second largest, seafood processor and exporter - Minh Phu. **Organically certified shrimp is valuable to processors**: it allows them to access higher value markets, meet growing demand for sustainable products, and supports their brand profile. The project also supported hatcheries rearing organically certified juvenile shrimp, collectors to ensure food safety and traceability throughout the cold-storage chain, and import markets to build demand for organic shrimp. Through the creation of stronger connections between actors in the supply chain farmers are able to meet the standards required to produce certified

shrimp, and be compensated appropriately for it, and Minh Phu can secure reliable supplies of certified shrimp

"Since joining the project and learning about new farming techniques, we understand that our traditional practices do not work anymore. For example, a high stocking density does not necessarily lead to higher yields. In organic farming we do not introduce any feed, so if we stock too much shrimp, the shrimp will leave the pond due to a shortage of natural food. My shrimp productivity has increased significantly since applying the new farming techniques." THAI HOANG NAM (shrimp farmer, Vien An Dong village)

Scaling towards an "organic coastline" for the Mekong Delta

The farming methods promoted by the project have **massive potential for scaling right across the Mekong Delta** region, particularly across extensive shrimp farms in the coastal areas, but also for other sectors and sub-sectors. The project's approach can be pivotal in delivering the Mekong Delta Plan – to, as it writes, "*actively take opportunity of brackish and saltwater-based economy.*" SNV and IUCN are building a partnership of likeminded stakeholders to:

1. Create an additional 80,000 hectares of organic-certified mangrove shrimp polyculture in villages and districts immediately neighbouring the MAM project.
2. Support farmers in over 200,000 hectares of other underperforming and vulnerable, extensive or intensive farms throughout the Mekong Delta's coastline, to adopt more innovative and sustainable farming models.

The market for sustainable shrimp will be further expected to grow through commercialisation and digitisation of farmer support services, helping the government achieve its plans for agricultural restructuring. Simultaneously, work to reduce costs and multiply benefits of diverse standard and certification schemes will also lead to enhance markets, and access to markets, for this high-value product.

Mainstreaming the PFES policy in other provinces and other (sub)sectors will create sustained finance sources for mangrove protection, while, thanks to Vietnam's technological and legal developments regarding REDD+ and emissions reductions, domestic and international carbon markets can now provide additional 'starter' funding to key restoration and market development activities.

4. Conclusion and lessons learned

Overview of results

This case study described how the MAM project contributed to the transformation of the shrimp sector in southern Vietnam. The key results are captured in the four parameters for successes shown in the table on the next page.

The project successfully kick-started markets for organic shrimp production from mangrove areas by demonstrating the benefits of transforming farming practices to all stakeholders, facilitating access to the skills and technology required to achieve this, and strengthening connections between the supply chain actors. Sustainable farming was further incentivized by supporting the Provincial government to introduce PFES regulation. In addition, the project supported the introduction of legislation and guidelines as well as agricultural planning processes that underpin the long-term sustainability of the market.

Lessons on systems change

The MAM project also harvested lessons on pursuing systems change.

Key to the success of the project has been **responding to needs of all actors and finding meaningful entry points with each of them.** For the processors, this was helping them to access higher value markets, meet growing demand for sustainable products, and supports their brand profile. For the farmers, this was increasing and diversifying their incomes, improving their resilience.

For the local government, this was transforming the agricultural sector and ensure the resilience of the economy and people through protected agricultural ecosystems.

Lessons that could be adopted to further increase the impact of the project or future projects are first of all, that **more emphasis on demand-side measures could have promoted faster scaling**, further increased buy-in, and the pace of investment and update by processors. This could effectively be achieved through forming partnerships with organisations specializing in these activities, often based in consumer countries.

Second, filling gaps in service provision needs a **well-articulated exit strategy if scaling is to occur.** The project effectively filled a gap (in extension services and R&D for extensive shrimp production) but, despite adoption in some ways by both private and public sector, a sustainable model has not yet been established for ongoing operation costs of scaling the model (e.g. farmer outreach and training, or long term operation and promotion of the smart phone app). Such an exit strategy could include work on public budgets and strengthening public extension services, developing commercial service delivery models, or a combination of both, depending on the vision, strategy and capacity in the local area. This is an innovative addition to the new Climate and Business product, re-launched in 2020.

The MAM project began in 2012, with the ambition to test and pilot more sustainable production practices. Through its early successes its scope and funding was increased. However, if the project would have incorporated a more systems change perspective in its design phase and early on during the project's management, then it may have had different strategies regarding the two above 'shortcomings' with more conscious attention to how to sustain and scale outcomes. Adopting adaptive management approaches and use of tools such as SNV's "Scaling Scan", can be important in helping project managers and stakeholders identify opportunities and needs for increasing the contribution of a project to systems change.

Table 2. Overview of contributions to systems change

Contributions to development goals

A new model of shrimp production was demonstrated, established and normalised in the area, allowing the livelihoods of farmers and activities of aquaculture industry to remain environmentally, economically and socially sustainable.

- Farmers have more resilient and secure livelihoods, to both environmental conditions through increased adoption of climate resilient farming practices and diversification of produce, but also economically resilient through better legal compliance and more formalised and direct relationships to processors and buyers.
- Employment and household incomes in rural areas are increased through the adoption of better management practices resulting in greater yields, and through higher unit prices thanks to premiums and payments for ecosystems services.
- Climate mitigation through increased protection, restoration and sustainable management of mangrove forests.
- Improved basic sanitation - 1000 sanitary toilets were built and installed in farms that did not yet have them.

Leveraging structural finance	**Institutional embedding**
• $300,000 per year paid to farmers in PFES payment. • Up to 5% price premium for organic certification	• National regulation which establishes mangrove polyculture within the PFES system • One Province has enacted regulation on PFES
Kickstarting or transforming markets	**Shifting values, norms and mind sets**
• 5 seafood exporters committed to purchasing certified shrimp. • 2 hatcheries certified to organic standards • 4,003 farmers obtained organic certification	• Changing mindsets among farmers, who now see that increasing mangrove cover increases rather than reduces their productivity, and especially increases their resilience to environmental shocks (such as heat stress). • Shrimp buying companies understand the benefits of more direct and mutually beneficial relationships with their suppliers and invest in their development. • The project is one of very few existing and practical examples of effective private sector engagement for climate goals, let alone for adaptation and EbA. It has shown the public sector (which historically takes a statist approach) what is possible regarding private sector engagement. • This is also important lesson learning for other economic objectives such as the Agricultural Restructuring Policy and Mekong Development Plan, as Viet Nam seeks to understand how to best catalyse private sector investment in a more sustainable development trajectory.