



## Transforming Myanmar's Aquaculture

*Unlocking the potential for inclusive rural growth, improved livelihoods, and food security*

Worker harvesting carp from a fish pond in Ayeyarwady Region. Photo by Ben Belton

### SECTOR SNAPSHOT

Aquaculture refers to the farming of aquatic organisms such as fish, crustaceans, and molluscs.

- Aquaculture has been growing quickly in Myanmar, at a rate of around 9% per year since 2004, and contributes 21% of the fish consumed nationally.
- Farming fish generates average profits five to ten times higher than rice and other agricultural crops, and more than twice as much employment per acre as paddy farming.
- Aquaculture is very concentrated geographically, with 90% of inland fish ponds located in the Ayeyarwady Delta, close to Yangon.
- A single species (rohu), accounts for around 70% of the fish produced in Myanmar. Shrimp, a high value crop grown mainly for export, contributes just 5.6% of production.

### SUMMARY

Fish is an extremely important component of the Myanmar diet, and demand is growing quickly as the country urbanizes and incomes rise. Aquaculture is ideally placed to meet this demand, while also raising farm incomes and creating employment. This brief identifies three sets of policy options that could help to unlock the full potential of aquaculture's contributions to rural growth and national food supply. These are: regulatory reforms that allow small farmers to use their agricultural land for aquaculture; improved access to farm inputs and technologies; and greater access to the knowledge and services needed to support sectoral modernization.

### KEY MESSAGES

- Aquaculture in Myanmar has massive potential to raise rural incomes and meet domestic and global demand.
- A competitive aquaculture sector led by small farmers and small and medium-sized enterprises (SMEs) can best generate employment and stimulate rural growth.
- Allowing farmers to choose how to use their agricultural land is key to unlocking the sector's potential.
- Farmers need the support of responsive input suppliers as well as knowledge and information service providers to diversify and modernize production.
- Government action is needed to improve regulatory frameworks.

## INTRODUCTION

Fish is the second most important food after rice in Myanmar. Demand for fish is growing fast, as diets change with rapid urbanization and rising incomes. The supply of fish from capture fisheries is unlikely to grow any further, and integration into the ASEAN economic community and the opening up of access to markets in the EU and United States is creating new opportunities for growing exports. These factors create a “perfect storm” of demand for aquaculture products that will only intensify as Myanmar’s economic transition continues.

Myanmar’s recent aquaculture growth has been driven mainly by large enterprises, which have historically been favored by government, while policies prohibiting the conversion of paddy land to other uses have limited the ability of smaller farmers to participate in the sector. Together, these policies have worked to create an unbalanced sector that falls short of its potential to stimulate inclusive rural growth, generate jobs, and deliver food security. Limited access to inputs, credit, productive technologies and human capital also inhibit optimal performance. This brief presents a series of possible options for addressing these issues.

## 1. ENACT REGULATORY REFORMS

Aquaculture is capable of generating higher farm incomes than almost any other form of agriculture. This makes it an extremely attractive option for rural farm households. Unfortunately, land use regulations in Myanmar prohibit farmers from converting land from paddy fields into ponds legally. These restrictions have been applied unevenly, allowing small farms to develop in certain areas, but resulting in high transaction costs for farmers and creating a risky investment climate. In other areas, pond construction remains impossible. Reforming the law to give farmers the right to cultivate whatever crop they choose could transform the aquaculture sector, allowing for more efficient utilization of land, supporting livelihood diversification among farm households, and creating much larger economic spillovers and employment multipliers than exist at present.

Lack of clear regulations and competing administrative jurisdictions governing the use of Myanmar’s numerous reservoirs and irrigation canals prevent the utilization of these waterbodies for aquaculture. This has inhibited the development of cage-based fish farming, which is common in countries in the region. Licensing access to these resources for use in aquaculture could generate new revenue streams for government while

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“Aquaculture is the fastest-growing food sector... aquaculture intensification has the potential to produce the fish needed to meet the demand for safe and highly nutritious food by a growing population.”

FAO, 2016

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enabling the more efficient utilization of water resources and encouraging private sector investment in rural areas.

Harvested fish cannot legally be transported interstate without written consent and can only be legally distributed to markets outside of Yangon by a limited pool of licensed traders. Moreover, express bus services, which are extremely important for transporting fish throughout the country, face arbitrary restrictions on use for this purpose. Removing all restrictions on the transport of harvested fish between states and regions would encourage domestic trade and minimize unnecessary costs that are currently passed on to consumers.

## 2. IMPROVE ACCESS TO FARM INPUTS AND TECHNOLOGIES

Manufactured fish feed prices in Myanmar are the highest in Asia. Greater competition within the fish feed sector would drive down prices and improve feed quality, leading to wider adoption of high-quality feeds by farmers and large increases in farm productivity. This could be supported by encouraging greater domestic and foreign investment in fish feed production.

Myanmar aquaculture is currently dominated by a single fish species (rohu). Yield increases achieved by adopting manufactured feeds could be leveraged further by farming some of the many other fish species that are produced profitably elsewhere in Asia. This would diversify the sector and increase the options available to farmers and consumers. Public-led investments in developing and disseminating hatchery technology have proven successful in the past in Myanmar for fishes such as rohu, and these successes could be replicated for a new generation of species.

Inadequate hatchery technology currently represents the biggest challenge to the production of shrimp, a high value crop with excellent export potential. With opportunities presented by the lifting of trade restrictions, now is the perfect time to make investments to rebuild the sector in an environmentally sustainable, socially responsible, and organized manner, through the implementation of internationally recognized best management practices.

No formal financial institution supports lending to smaller fish farmers, and the rates of interest paid on informal loans are extremely high. Increasing access to formal sources of credit for fish farmers and SMEs in the aquaculture supply chain can be accomplished through the development of specially tailored lending instruments. Increasing the supply of credit to the sector would result in a less risky investment climate, increases in farm productivity, and greater volumes of investment along the supply chain.

## 3. STRENGTHEN HUMAN AND INSTITUTIONAL CAPACITY FOR IMPROVED SERVICE DELIVERY

A well trained workforce is a cornerstone of sustainable aquaculture development. The public and private sectors can play important supporting roles through the provision of effective veterinary and extension services to farmers. The Department of Fisheries (DoF) can contribute to sectoral modernization and sustainability by regulating the use of chemicals and drugs and ensuring the implementation of safe farm practices. The DoF can also enable better decision making by collecting more detailed and accurate farm statistics. Developing human resources and institutional capacity is thus a key priority for Myanmar’s aquaculture sector if it is to modernize, orient toward export markets, and compete effectively with other countries in the region.

## CONCLUSIONS

Aquaculture has tremendous scope for future expansion in Myanmar. Regulatory reforms would create a level playing field for producers of all sizes, acting as an engine for more inclusive growth by raising incomes for small farmers and creating employment in SMEs in the supply chain. Better access to inputs, including credit, and new productive technologies would improve the profitability and diversity of farming systems and non-farm enterprises, create new export market opportunities and make farmed fish more cheaply and widely available to consumers. Building human and institutional capacity can support the sector’s modernization by improving the effectiveness of service provision and governance.



Workers packing harvested fish in ice for delivery to market.  
Photo by Ben Belton

Access to a skilled workforce with applied experience of working in aquaculture will be essential if the public and private sectors are to provide supporting services effectively. Unfortunately, Myanmar presently suffers from an acute shortage of skilled human resources in this area, in addition to a lack of basic facilities for aquaculture education and research. Universities currently offer few aquaculture related courses, and these provide little practical training and are not linked closely to the needs of the sector. These shortcomings could be addressed through a structured approach to educational curriculum development and capacity building, coordinated among universities, the private sector, the Department of Fisheries and civil society, and combining all the elements required to meet the industry’s future needs.

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“The authorities do not allow ponds to be built on land suitable for rice cultivation.”

Edwards, 2005

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## OVERVIEW OF MYANMAR AQUACULTURE SUBSECTOR

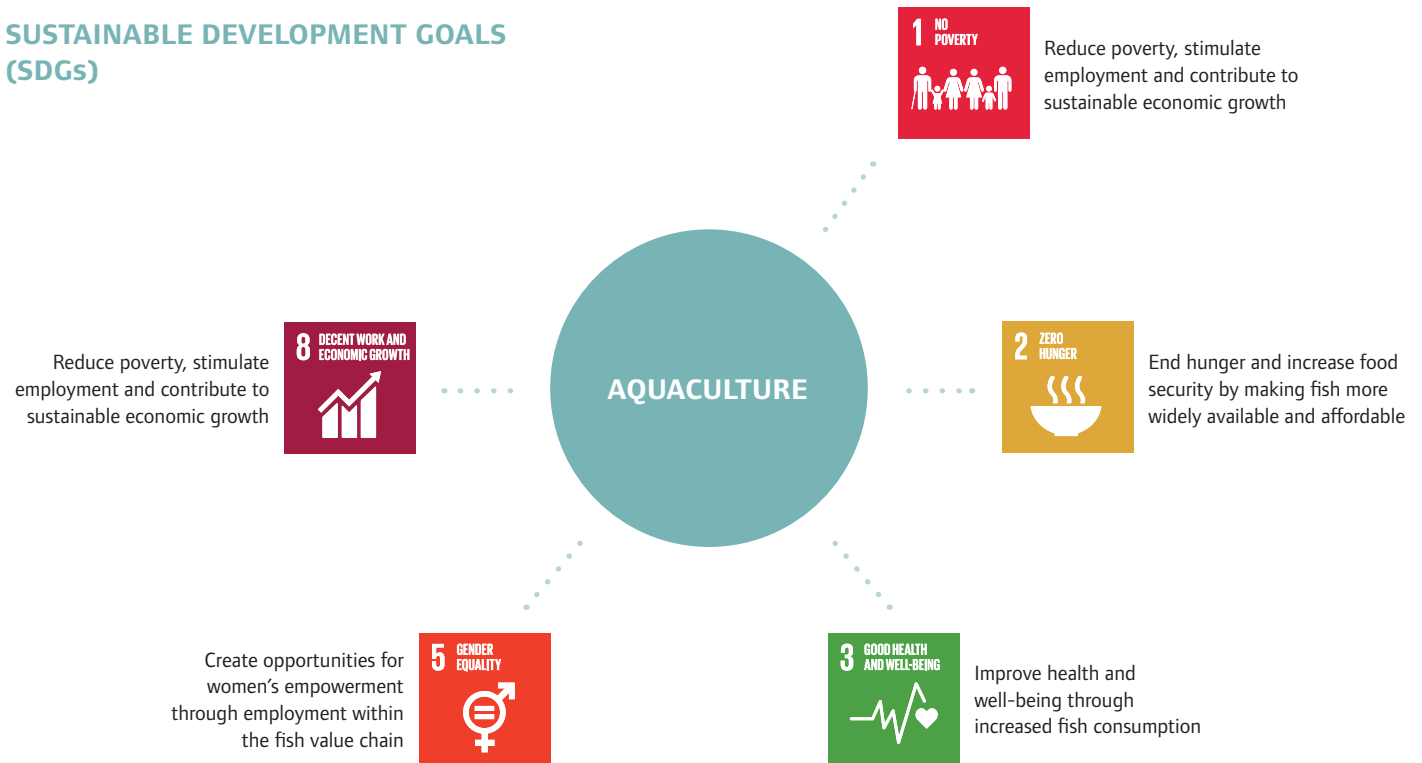


## PURPOSES

This brief presents options for enhancing the contributions that aquaculture can make to inclusive growth, rural development and food security. It provides information about:

1. The status and significance of Myanmar's aquaculture; and
2. Options for unlocking the huge potential of aquaculture to raise rural incomes, create jobs and support national food security.

## SUSTAINABLE DEVELOPMENT GOALS (SDGs)



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## KEY REFERENCES

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