

2021

Sector Sustainability Update



14 LIFE BELOW WATER



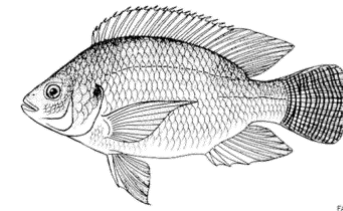
FARMED WHITEFISH

Tilapia & Pangasius

June 2022

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2021 Sector Sustainability Update



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SUMMARY

Production and trade

- The farmed whitefish sector covers farmed production of all the tilapia and pangasius species globally. This is one of the largest seafood sectors, with current total production of 9.4 million mt – a figure that has almost doubled since the mid 2000s.
- Asia accounts for almost 80 percent of this production. China dominates tilapia production, while Vietnam dominates pangasius production – with each country producing around 1.6 million mt in 2019. Other major Asian producers are Bangladesh, India, and Indonesia.
- Major non-Asian producers of tilapia include Brazil and Colombia, but are dominated by Egypt, which produced over 1 million mt in 2019.
- Vietnam (50 percent) and China (35 percent) are currently the top exporters by value. The United States, China, Europe, and Mexico are the main importers, and together accounted for almost 70 percent of farmed whitefish imports by value in 2019.

T75 status and current strategy priorities

- Farmed product is only classified as improving if it is certified to ASC, BAP, or GlobalG.A.P., or if it is in a formal aquaculture improvement project (AIP). No farmed production is currently eligible to be classified as sustainable, as farmed sources would need to be certified within an effective zonal management system.
- About 5.7 percent (c. 540,000 mt) of global farmed whitefish production is currently estimated to be improving. This figure represents a decrease from 7.3 percent in 2020.
- SFP's focus in this sector involves promoting the [Framework for Sustainably Managed Aquaculture](#) and assessments of major farmed whitefish producing industries in Asia via the [FishSource \(FS\) Aquaculture profiles](#). These profiles identify priority improvements and can be used to inform the creation of AIPs.
- There is one AIP focused on farmed whitefish – the Hainan Tilapia Sustainability Alliance AIP. It accounts for 100,000 mt of the current 378,000 mt of tilapia classified as improving, and is now reporting its activities and progress every six months under the [AIP Directory](#).
- To reach Target 75, it will be vital to manifest further improvements in Vietnam, China, and Indonesia, but also other major producing regions, such as Egypt, Bangladesh, India, and Brazil.
- These improvements could be achieved through aquaculture improvement projects that adopt area-based approaches to improving water quality, preventing catastrophic disease outbreaks, and protecting habitat across multiple farms, while supporting the inclusion of small-scale producers.

DISCLAIMER

This report was prepared with information from multiple sources, accessed in late September 2021. The report is not intended to be a comprehensive review of the sector, but rather a summary of progress against the Target 75 initiative, with some selected key highlights and improvement needs for the sector. The trade analysis is based on FAO bilateral trade data, which may not fully depict the full trade flows from the first exporter to the last end market of certain commodities. For more detailed information on seafood production, trade, or the status and attributes of certifications and improvement projects, the original sources should be consulted.

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Farmed tilapia in Mexico © Gerardo Fernandez

THE TARGET 75 INITIATIVE

Sustainable Fisheries Partnership (SFP) applies a sectoral approach to its mission of making actionable information available to the supply chain, in order to leverage market forces to achieve improvements in fisheries. Seafood sectors may be defined in terms of the shared biological characteristics of harvested species, as well as their role in defined markets.

In 2017, SFP launched the Target 75 (T75) initiative, as a dedicated and concrete benchmark on the way to our ultimate goal of 100-percent sustainable seafood. **T75 aims to ensure that 75 percent of seafood (by volume) in 13 key sectors is either sustainable or making regular, verifiable improvements.** Together, these T75 sectors cover most of the main types of seafood consumed in North America and Europe, and a significant portion of what is consumed in Japan and Oceania.



1

FARMED WHITEFISH SECTOR

This sector consists of **farmed tilapia** and **pangasius species** only.

The updated farmed whitefish (tilapia/pangasius) sector includes all species of tilapia (i.e., *Oreochromis spp.* and *Tilapia spp.*) and pangasius (*Pangasius spp.*) from farmed production only. Most of the production comes from Asia, although Egypt and Brazil are also major producers.

The main species by production volume are striped catfish (*Pangasianodon hypophthalmus*) and Nile tilapia (*Oreochromis niloticus*), along with smaller amounts of Blue-Nile hybrid (*Oreochromis aureus x Oreochromis niloticus*) and pangas catfish nei. Species are predominantly produced in freshwater (8.3 million tonnes), with around 1.1 million tonnes of tilapia also produced in brackish water, predominantly in Egypt but also in Indonesia.



Farmed tilapia ©Shutterstock



Tilapia farm in Thailand ©Indiannaken

2 SCOPE AND OBJECTIVES

This report provides a quick summary update on progress so far for the **farmed whitefish (tilapia/pangasius) sector** against the 75-percent goal, in terms of volume of production that is already considered as either sustainable or improving. The update also includes highlights on which sources of production had the most relevant changes, as well as the most recent trends in production and trade.

This report focuses on farmed production only. For the purposes of this analysis, we define farmed production as improving if (1) it is certified by one of the following programs: Aquaculture Stewardship Council (ASC), Best Aquaculture Practices (BAP), GlobalG.A.P's GCN, or (2) if it is in a formal aquaculture improvement project (AIP). No farmed production is currently eligible to be classified as sustainable, as farmed sources would need to be certified within an effective zonal management system. Currently, no such standard exists.

Data on production refers to 2019 production and is from the [FAO FishstatJ](#) database. Status in terms of certifications and AIPs refers to September 2021.



Members of the Hainan Tilapia Sustainability Alliance ©Han Han – HTSA



Tilapia farmer in Hainan ©Han Han – HTSA

3 PRODUCTION

Farmed tilapia and pangasius is one of the largest seafood sectors, with current total production of 9.4 million tonnes – a figure that has almost doubled since the mid 2000s (**Figure 1**) (FAO 2021a).

The sector is dominated by Asian countries, notably Vietnam, China, Indonesia, India, and Bangladesh, with some exceptions such as Egypt and Brazil (**Figure 2** and **Figure 3**). Production is also dominated by a few species, most notably striped catfish, Nile tilapia, Pangas catfish nei, and Blue-Nile tilapia.

Vietnam dominates pangasius production, accounting for 1.6 million tonnes of striped catfish in 2019 (17 percent of the sector). The other top producing countries are India at 594,000 tonnes of striped catfish (6.3 percent) and Indonesia, which produced 441,000 tonnes of Pangas catfish nei (4.7 percent).

China dominates tilapia production, accounting for 1.23 million tonnes of Nile tilapia in 2019 (13 percent), as well as 411,000 tonnes of Blue-Nile tilapia (4.4 percent). Next comes Indonesia at 1.18 million tonnes of Nile tilapia (12.6 percent), and Egypt with 1.1 million tonnes of Nile tilapia (11.7 percent).

Other major producers include Bangladesh for both striped catfish and tilapias nei, as well as Brazil, Vietnam, Thailand, and the Philippines for tilapia species (FAO 2021a) (**Appendix I**).

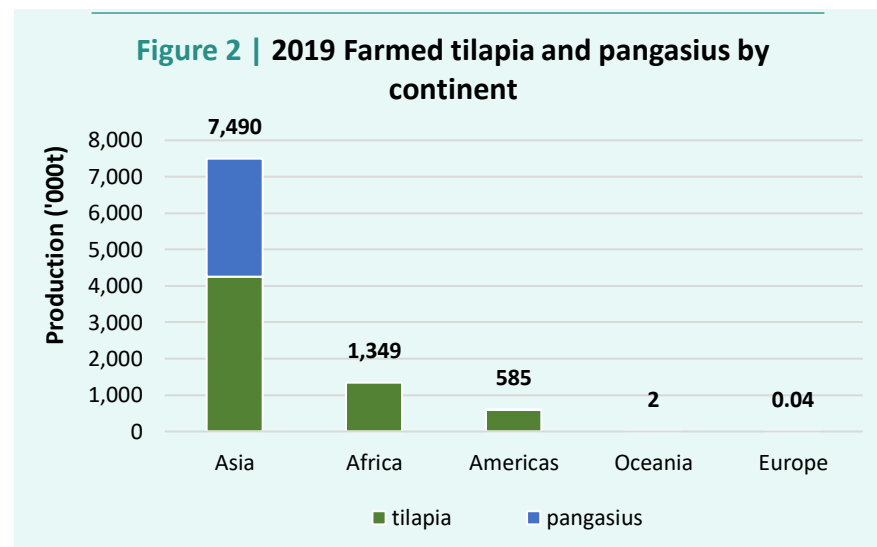
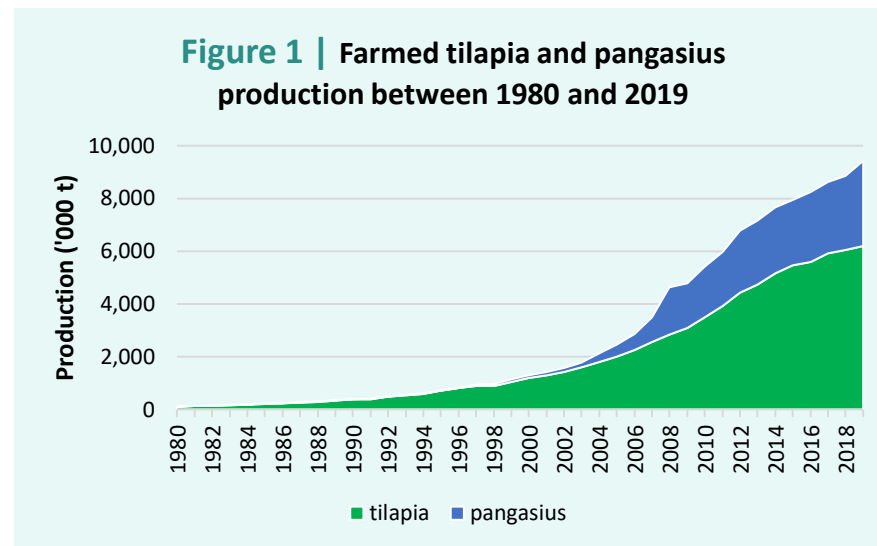
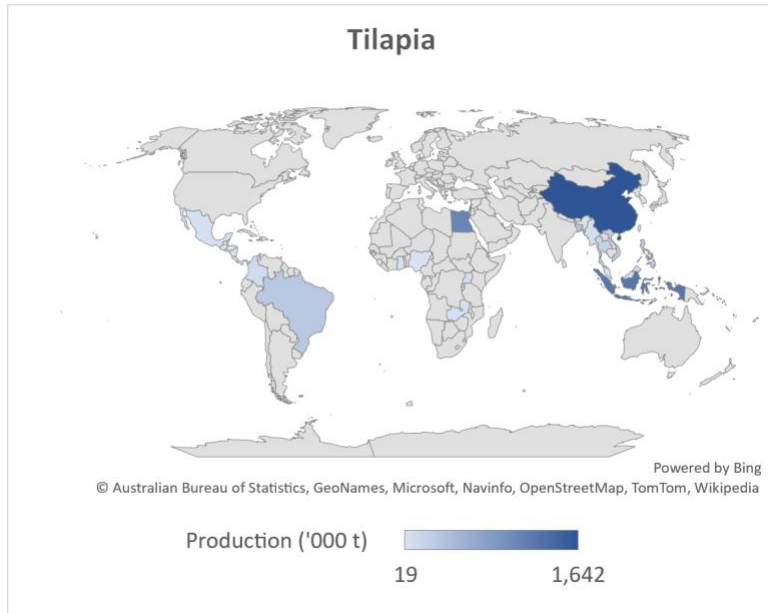
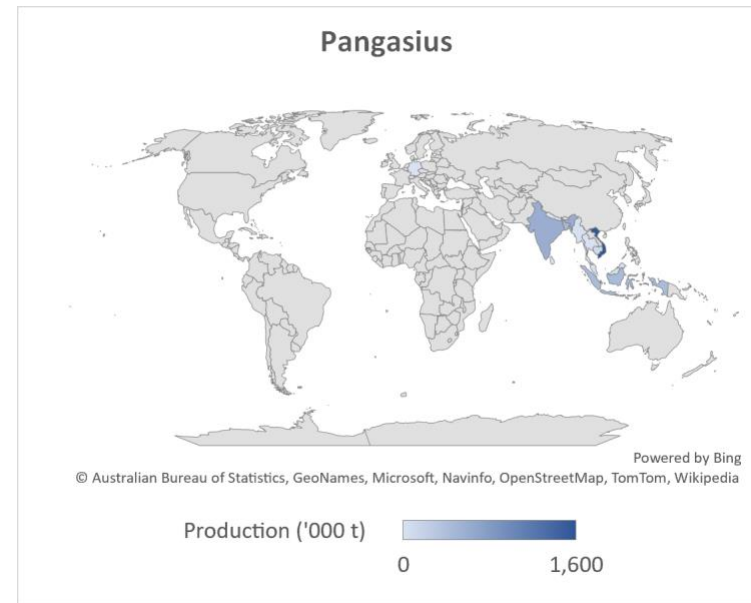


Figure 3. The top producing countries for tilapia and pangasius



Source: FAO FishStatJ

Country	Production ('000 t)	% Total
China	1,642	27%
Indonesia	1,257	20%
Egypt	1,081	17%
Bangladesh	350	6%
Brazil	324	5%
Philippines	279	5%
Viet Nam	263	4%
Thailand	214	3%
Colombia	96	2%
Uganda	71	1%



Source: FAO FishStatJ

Country	Production ('000 t)	% Total
Viet Nam	1,600	50%
India	594	18%
Bangladesh	447	14%
Indonesia	441	14%
Cambodia	90	3%
Myanmar	25	1%
Malaysia	18	1%

4 TRADE STATISTICS

Worldwide tilapia and pangasius trade (exports) totaled more than USD 3.8 billion¹ in value in 2019. Asia accounts for about 90 percent of exports by value, with Vietnam (50 percent of total exports in 2019) and China (35 percent) as the main exporting countries from this region. Smaller amounts are also exported from Indonesia, Taiwan, and Thailand.

As with other key seafood commodities, the United States and Europe continue to be the largest markets for tilapia and pangasius, with the United States accounting for 30 percent of imports and Europe accounting for 13 percent, followed by Mexico (9 percent) and others (22 percent). As well as being a major exporter, China is also the second-largest importer, after the United States (16 percent), sourcing predominantly from Vietnam.

African countries such as Côte d'Ivoire (2 percent) and others including Cameroon, Zambia, and Gabon also import more product than many individual European countries, primarily from China. Major tilapia producers such as Egypt and pangasius producers such as Bangladesh and India are not included in the top exporters. Therefore, it can be assumed

that product from these countries is destined for their domestic markets; although some product is exported to a number of countries in the Middle East.

A noticeable amount of product (worth USD 35 million) is exported from the Netherlands to markets predominantly within Europe.

Table 1 | Main tilapia and pangasius exporters in 2019 and their top trade partners, by percentage of each country's total exports.

Exporter \ Importer											Total 2019 exports (USD billion)	% of total exports
	United States	China*	EU_EEA_UK	Mexico	Côte d'Ivoire	Canada	Thailand	Colombia	Brazil	Other		
Viet Nam	15%	33%	12%	5%	0%	2%	4%	2%	3%	22%	1.91	50%
China	31%	2%	5%	21%	8%	1%	0%	2%	0%	31%	1.33	35%
Indonesia	65%	0%	16%	0%	0%	4%	6%	0%	0%	8%	0.07	2%
Netherlands	0%	0%	98%	0%	0%	0%	0%	0%	0%	2%	0.07	2%
Taiwan	60%	0%	2%	0%	0%	5%	1%	0%	0%	31%	0.06	2%
Colombia	93%	0%	2%	0%	0%	0%	0%	0%	0%	4%	0.04	1%
Costa Rica	98%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.03	1%
Thailand	5%	0%	6%	0%	0%	1%	0%	0%	0%	87%	0.03	1%
Mexico	95%	0%	4%	0%	0%	0%	0%	0%	0%	1%	0.03	1%
United States	0%	4%	1%	3%	0%	59%	0%	1%	0%	32%	0.03	1%
% of total imports	30%	16%	13%	9%	2%	2%	2%	1%	2%	22%		

¹ This includes tilapia and pangasius included in broader whitefish categories such as "Tilapias, catfish, carp, eels, Nile perch and snakeheads, salted or in brine," and therefore may be an overestimate.

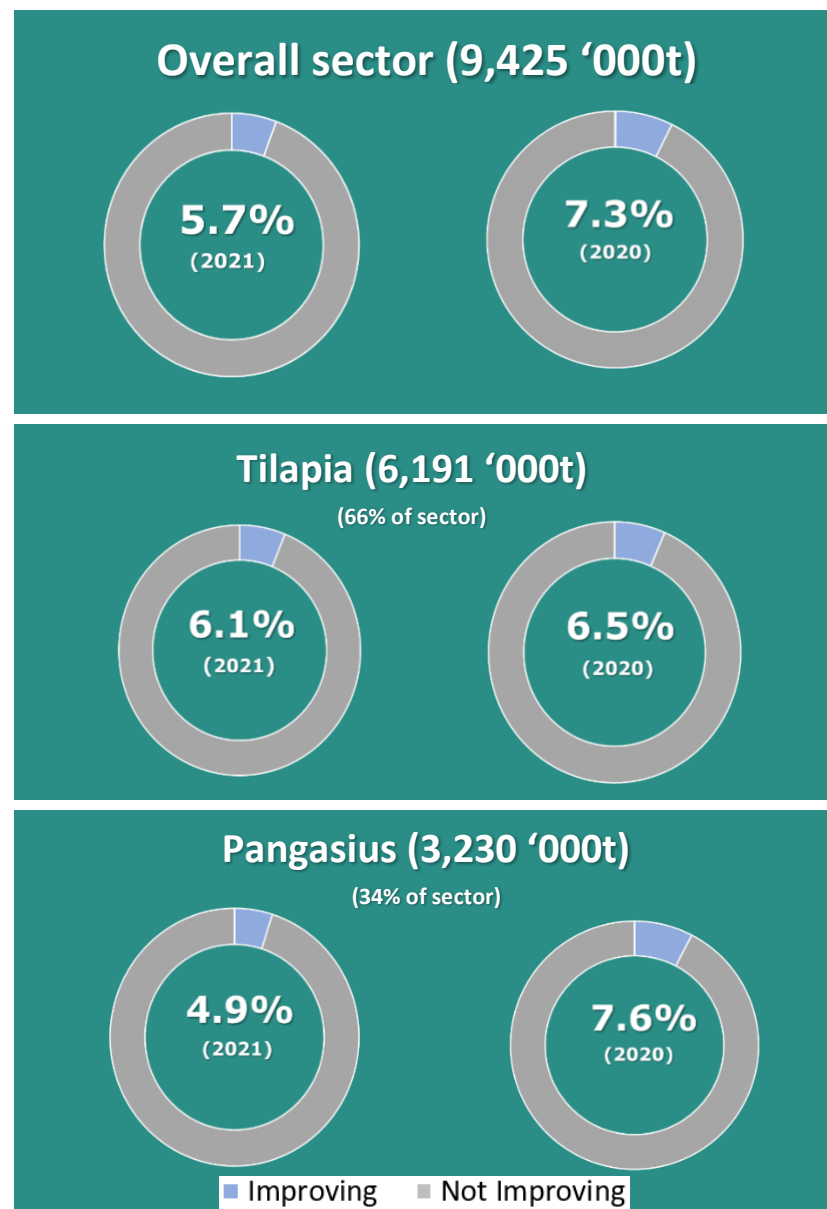
5 PROGRESS AGAINST THE 75% TARGET

Currently, 537,000 tonnes, or **5.7 percent of the global farmed tilapia and pangasius sector**, is classified as improving. About 70 percent (378,000 tonnes) of this is from certified tilapia, represented by the volume under one AIP, the [Hainan Tilapia Sustainability Alliance](#).

Compared to the same period in 2020, the farmed whitefish sector showed a drop in the percentage of volume classified as improving, from 7.3 to 5.7 percent.

This was primarily caused by a decrease in certified Vietnamese catfish production, which fell by about 50,000 tonnes. However, there was also a decrease in the number of tilapia farms and certified volume from China, and a significant decrease in certified tilapia from Honduras. The volume supplied by the AIP remained constant, at 100,000 tonnes.

Learn about SFP’s T75 strategy and prioritized fisheries [here](#).



6 CHALLENGES TO SUSTAINABILITY

[FishSource Aquaculture \(FS Aqua\) profiles](#) for major Asian farmed whitefish industries² identify several recurring sustainability issues across all geographies, specifically:

- A lack of adoption of area-based management approaches to reduce cumulative impacts on water quality and vulnerable aquatic and terrestrial habitats
- A lack of evidence of the enforcement of existing aquaculture planning, water quality, and disease management measures
- A lack of publicly available information and key aquaculture performance indicators on which to base assessments.

Under its [Framework for Sustainably Managed Aquaculture](#), SFP advocates for the greater adoption of zonal management (**Figure 4**). This approach to aquaculture management recognizes that farms are interconnected and aims to ensure that industry growth is based on an assessment of disease risk and the ecosystem’s carrying capacity.

The Framework, its five principles, and FS Aqua assessments can be used to drive improvements across multiple farms through the creation of aquaculture improvement projects (AIPs), such as the [Hainan Tilapia Sustainability Alliance](#), which is currently supporting the formation of an organized producer association and improving water quality management in Hainan, China. To reach Target 75, it will be vital to manifest further improvements in Vietnam, China, and Indonesia, as well as other major producing regions such as Egypt, Bangladesh, India, and Brazil (**Appendix 1**).

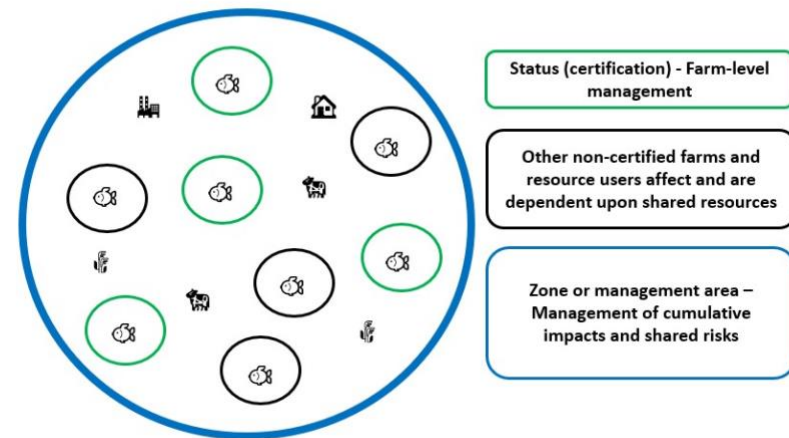


Figure 4 | Representation of the zonal management approach to aquaculture, where management is based on a consideration of all resource users operating within a defined zone or area, principally a water body.

² There are currently FS Aqua profiles for major pangasius-producing regions (province/states) in Vietnam and Indonesia, and major tilapia-producing regions in China and Indonesia.

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8 GLOSSARY

AIP	Aquaculture Improvement Project
ASC	Aquaculture Stewardship Council
BAP	Best Aquaculture Practices
EEZ	Exclusive Economic Zone
FAO	Food and Agriculture Organization
GLOBALG.A.P.	Worldwide Standard for Good Agricultural Practices
GCN	GLOBALG.A.P.'s certified, responsible farming and transparency label
ISSCAAP	International Standard Statistical Classification of Aquatic Animals and Plants
NEI	Not Elsewhere Included
SR	Supply Chain Roundtable
T75	SFP Target 75 initiative



Farmed pangasius ©Shutterstock

Appendix I - Top species and producing countries, and respective 2019 reported production of farmed whitefish

Species

Common name	Scientific name	2019 production ('000t)	% of total
Nile tilapia	<i>Oreochromis niloticus</i>	4,590.3	48.7
	<i>Pangasianodon</i>		
Striped catfish	<i>hypophthalmus</i>	2,682.2	28.5
	<i>Oreochromis (=Tilapia)</i>		
Tilapias nei	<i>spp</i>	1,099.9	11.7
Pangas catfishes nei	<i>Pangasius spp</i>	531.0	5.6
Blue-Nile tilapia, hybrid	<i>Oreochromis aureus x O. niloticus</i>	410.6	4.4
Mozambique tilapia	<i>Oreochromis mossambicus</i>	74.4	0.8
Pangas catfish	<i>Pangasius pangasius</i>	17.6	0.2
Three spotted tilapia	<i>Oreochromis andersonii</i>	4.8	0.1
Others		14.6	0.2

Source: FAO FishStat (FAO 2021a)

Countries

Country	2019 production ('000 t)	% of total
Viet Nam	1,863.0	19.8
Indonesia	1,698.0	18.0
China	1,641.7	17.4
Egypt	1,081.2	11.5
Bangladesh	797.6	8.5
India	594.0	6.3
Brazil	323.7	3.4
Philippines	279.4	3.0
Thailand	227.4	2.4
Cambodia	100.7	1.1
Colombia	96.0	1.0
Myanmar	94.5	1.0
Uganda	71.3	0.8
Taiwan	64.5	0.7
others	492.4	5.2

Source: FAO FishStat (FAO 2021a)



Large shrimp farm in Thailand ©Shutterstock

FURTHER INFORMATION

<http://www.sustainablefish.org/>

For additional information, please contact us at:
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14 LIFE
BELOW WATER

