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# 100 Billion Dollar Baby: Aquaculture Keeps Growing

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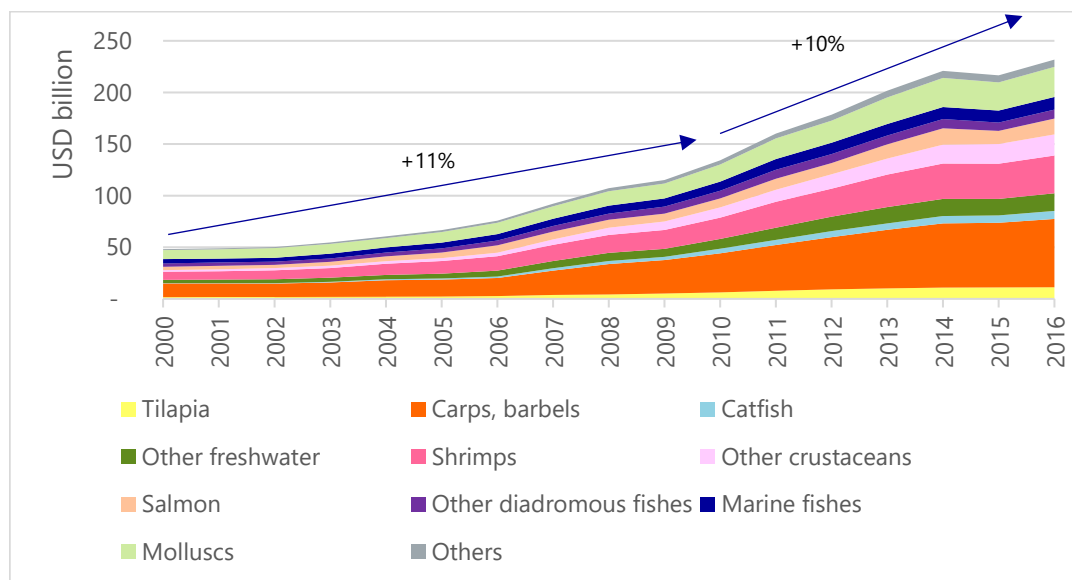
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From 2010 to 2016, the aquaculture industry increased its value by USD 100bn, reaching USD 232bn. The growth is mainly driven by crustacean and freshwater fish farming in developing economies, particularly in Asia, as well as Atlantic salmon in the West. With improved biosecurity, new husbandry technologies, and novel feed ingredients, further growth of USD 100bn can be achieved in less than a decade.

## Aquaculture has grown by nearly USD 100bn in six years

Aquaculture is the fastest-growing protein-producing industry. According to the latest FAO statistics, its total value reached USD 232bn in 2016 – represented by a CAGR of 10% for the last six years (2010-2016) (see Figure 1). Poultry and beef grew by 8% and 6%, respectively, in the same period. In volume terms, total production included 80m tonnes of fish and shellfish. Although the growth rate was slightly higher for the period 2000 to 2010 (11% CAGR), in the last six years, aquaculture increased its value by another USD 93bn. As a comparison: before 2010, it took 15 years to grow by USD 94 billion.

Figure 1: Aquaculture has achieved rapid growth, 2000-2016\*



\* Note: Aquatic plants are not included.

Source: Food and Agriculture Organization of the United Nations, Rabobank 2018

## All of the large seafood categories are growing

**Crustaceans.** From 2010 to 2016, crustaceans enjoyed the highest growth rates in value terms. Their production increased by USD 26.5bn – representing 28% of the total aquaculture value growth. The production value of shrimp grew by a CAGR of 10% – mainly a result of the increasing volume of shrimp production in India, Ecuador, and Vietnam. The higher supply and demand for red swamp crayfish, which Chinese consumers have started to favour in recent years, led to ‘other crustaceans’ increasing in value by 13% for the same period.

**Freshwater fish.** Among finfish, the value of freshwater species increased the most. Carps, tilapia, and catfish grew by 9% to 10% each in value terms. This growth mainly came from Asia. Carps kept on dominating the freshwater production. Catfish (including pangasius) had the lowest growth in value terms. For the last couple of years, the Vietnamese pangasius industry has started to lose share in American and European markets, due to its poor image – however, its supply increased in Indonesia, China, Bangladesh, and India. For tilapia, Indonesia, Egypt, and Brazil experienced considerable growth in production.

**Molluscs.** The value of farmed molluscs increased by USD 12.6bn from 2010 to 2016. China is the main producer of bivalve molluscs, including mussels, clams, oysters, and scallops. However, Peru also contributed to the growth of the mussel production.

**Salmon and marine fish.** Among the premium marine-farmed species, salmonid farming leads the way and has increased in value by a CAGR of 10%. In general, supply has expanded, but we have seen some volatilities, mostly due to biological challenges. This occasional supply shortage kept the prices and value of salmon farming high. Only in 2015, the sector experienced a negative value growth due to the Russian embargo for Norwegian and Scottish salmon, accompanied by good supply coming from Chile. Marine fish has only shown a slight value increase in the last six years. The production of seabass and seabream has been stable for the last couple of years, due to the issues in the largest producer, Greece, while seabass production has grown in Turkey. However, with the current consolidation in Greece, there is long-term potential for the growth of the seabass and seabream sector.

## We can maintain this growth if three challenges are addressed

Although the annual growth rates of aquaculture remain strong, they have been gradually slowing down. We expect farmed seafood production to stay on track to remain the fastest animal protein-producing industry in the next decade. The growth in aquaculture will come from crustacean and freshwater fish farming in developing economies in Asia, followed by South America and, to a limited extent, Africa. The production will remain to be both for exports and local-for-local consumption. Salmon will continue to enjoy value growth, mainly in Norway and in Chile – but its production will grow with a slightly lower rate, due to licence constraints.

Switching to more technology-driven and efficient intensive farming technologies has enabled fish farmers to increase production in the last few years. Improved genetics, new husbandry technologies, and innovations in aquafeed will be the three key factors determining aquaculture’s future. Further long-term growth in the sector can only be achieved through modernisation and professionalisation, while maintaining a strong respect for the environment and local communities.

# Imprint

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