

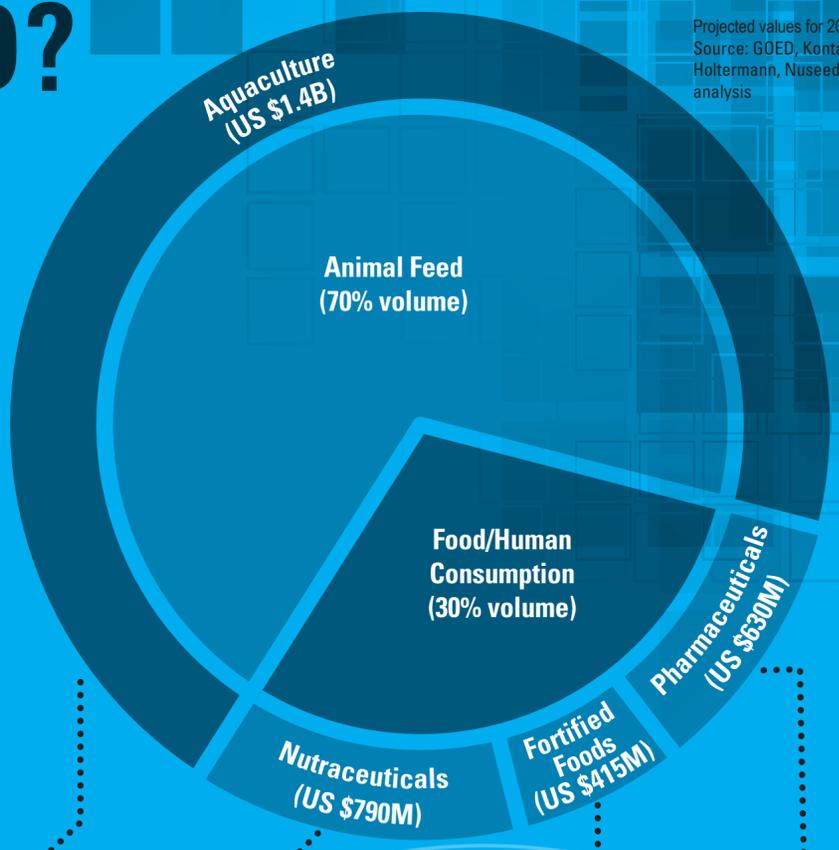
# HOW IS OMEGA-3 OIL USED?

Projected values for 2023  
Source: GOED, Kontali, Holtermann, Nuseed analysis

Omega-3 oils, particularly the long-chain EPA and DHA types typically found in oily fish, are important for human and fish health. Demand for these oils is increasing year-on-year, while existing supply from fish oil is limited. Developing new, sustainable sources of these healthy long-chain omega-3 oils is essential.

## Market sectors

The global omega-3 oil market is broken into a four key sectors, all aimed at providing long-chain omega-3 oils for direct and indirect human consumption. It is used in multiple ways; in the production of feed for animal consumption (mainly fish) and in producing supplements and other functional applications for human nutrition.



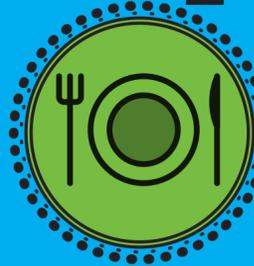
## Aquaculture

Aquaculture (farming fish and other marine animals) is the main feed-based market for omega-3 oils. While fish are a source of omega-3 oils, they do not make them; ocean microalgae make the oils which the fish consume in the food chain. Adequate consumption of long-chain omega-3s is important for fish health and consumers.



## Nutraceuticals

Nutraceuticals are dietary supplements for human consumption that provide nutrients which are typically not consumed in sufficient quantities for optimum health. Research completed in 2016 found that DHA and EPA consumption rates are insufficient in most regions of the world, leading to avoidable health problems.



## Fortified Foods

Fortified Foods have essential nutrients, such as vitamins and minerals, added to improve the nutritional function of the food for improved health outcomes. This can help address health concerns by enhancing every-day foods in a convenient way for consumers.



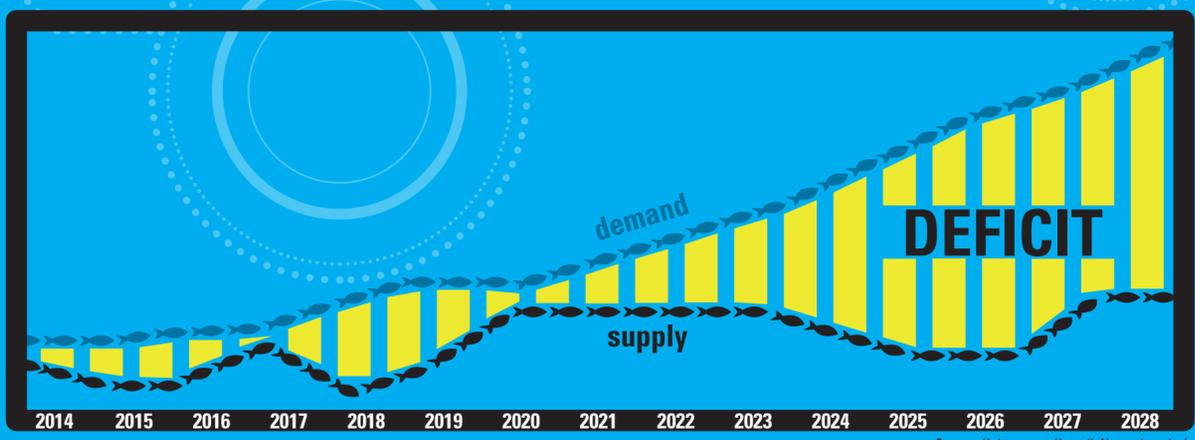
## Pharmaceuticals

Pharmaceuticals are aimed at treating a medically diagnosed illness or condition using specific dosages for specific health outcomes, under a physician's care. Products take many years to develop, with additional testing often at higher doses than supplements.

## Market trends

The global omega-3 oil market is projected to reach approximately US\$3.2 billion by 2023.

Demand for long-chain omega-3 oils is growing as awareness of the health benefits of this important nutrient increases, along with increased consumption of fish and growing populations with higher disposable incomes in emerging markets. However, with limited supply options – primarily wild-caught fish – current levels of production are not sustainable and there is increasing concern to protect wild fish stocks.



This is reflected in fish oil price trends over recent years.



Addressing this issue with sustainable sources of long-chain omega-3 oils is essential to keeping pace with demand for this important nutrient.