Global aquaculture production is growing at a CAGR of 5.8% and is expected to continue. New aquafeeds and other scarce inputs are required to fuel this growth. In 2016, feed production reached 39.9 million tonnes (equal to 50% of food fish volume).

For aquaculture growth to be sustainable, innovations and technology development are needed to resolve current pain points. Efforts should aim to:

- **Improve nutritional profiles of fish feeds**: For aquaculture to take pressure off wild fisheries, the volume of fish used in feed should be less than fish produced.
- **Turn fish farms into Alcatraz (“Aquatraz”)**: Wild fish populations can be endangered by escapes, so equipment and system design must limit this risk.
- **Improve fish health the natural way**: Reduced use of antibiotics and chemicals, and higher immunity through nutrition, will improve yields, profits, and sustainability.
- **Make aquaculture cleaner**: Rivers, bays, and farmland should not be polluted by farming operations and effluents could be upcycled into other products.
- **Improve energy and water efficiency in production systems**.

### FOOD FISH PRODUCTION
**MILLION TONNES**
Source: FAO, 2018

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<td>Value</td>
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<td>32</td>
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**CAGR 5.8%**

### AQUAFEED USAGE BY SPECIES
**Source: Alltech Global Survey 2018**

- **Salmon, trout, smelt.** 8%
- **Shrimp, prawn.** 13%
- **Other seafood (specific species volumes individually small).** 28%
- **Seaweed, algae.** 5%
- **Oysters.** 3%
- **Clams, cockles, arkshells.** 4%
- **Scallop, mussels.** 4%
- **Tilapia, other cichlids.** 5%
- **Catfish.** 4%
- **Carp, barbels, other cyprinids.** 27%

**2016 SEAFOOD PRODUCTION BY AQUACULTURE**
Source: FAO, Rabobank 2018

**VALUE US $243.4 Billion**

**VOLUME 110.2 Million Tonnes**

**WHERE TO INVEST IN AQUACULTURE**

- **Feed**
- **Management**
- **Health**
- **Water Quality**
- **Genetics**
- **Technology/data**
- **Equipment for Production Systems**
- **Aquaculture Farms**