# FACTS ABOUT SUSTAINABLE AQUACULTURE

USSEC U.S. SOYBEAN EXPORT COUNCIL
FAS International Marketing | USB United Soybean Board

SOY-FED FISH
*Farming the land to sustain the sea*

Global demand for healthful seafood is growing at unprecedented rates due to:

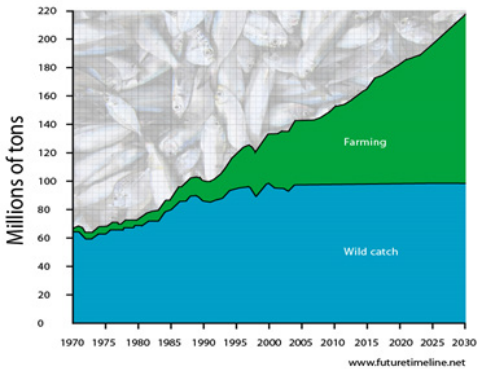
- Growing global population (projected 9 billion by 2050*)
- Rising middle class in Asia and India
- Health benefits of seafood: 2 servings/week recommended**

Wild-caught fisheries cannot to meet this demand:

- Additional 41 million tons of fish per year needed to maintain current consumption levels*
- 85% of world's fisheries fully- or over-exploited*
- Wild fish capture relatively flat since mid-1980's*

Aquaculture is increasingly relied upon to provide a sustainable source of nutritious and affordable seafood:

- Globally, aquaculture now provides 50% of all seafood for human consumption*
- Aquaculture is the fastest growing food production sector, and is expected to increase an additional 33% by 2021*




**AQUACULTURE IS SUSTAINABLE**

According to a 2011 report by Conservation International, aquaculture has the least environmental impact of any other protein production on the planet.***

Technological and biological advances in the past 25 years have greatly increased the sustainability factor of aquaculture.

**The Three "Legs" of Sustainability:**

**1) Hatchery technology**

- Hatching eggs from brood stock and raising them to fingerlings to stock pens, rather than catching wild fingerlings and raising to harvest size (ranching), eases pressure on wild ocean resources.
- Scientific advances in the past 10 years have enabled biologists to determine and raise the algae and live feed critical for the nutritional needs of larval fish.

**2) Responsible Management**

- Careful siting and rotation of pens/ponds mitigates environmental impact.
- Judicious stocking densities and constant monitoring of water quality and benthic impact assures optimal conditions.
- Advanced fish health science avoids disease and prophylactic antibiotics.
- Improved net technology deters escapes .
- Focus on native species avoids problems with invasive species.

**3) Sustainable Feed**

- Replacing wild-caught fishmeal and fish oil with alternative proteins, such as soy, eases pressure on ocean resources.
- Feed research has resulted in new formulations of soy-based feed to better meet the nutritional needs of popular carnivorous fish species, reducing fish in:fish out ratios for many species to close to 1:1.
- Soy-based feeds are more affordable for aquaculture operators than fishmeal and fish oil.
- Soy can scale up to meet demand for a growing global aquaculture industry.

Sources:

* United Nations Food & Agriculture Organization
** American Heart Association
*** Conservation International, "Blue Frontiers" 2011

**FORMS OF AQUACULTURE**

- Freshwater Pond – carp, tilapia
- Freshwater Runways – trout
- Saltwater Ponds - shrimp
- Near-shore Ocean Net Pens – salmon
- Offshore/Open Ocean – kampachi, cobia, tuna
- Closed Containment – tilapia, testing various marine fish, shellfish
- Multi-trophic – ocean net pens with mussels

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