

**OVERVIEW**

**CALIFORNIA  
AQUACULTURE**

**JFAC October 4, 2015**

**The purpose of this overview is to provide an introduction to the three panels that follow. They consist of three topics that describe existing and future aquaculture and their value to California:**

**1. Offshore Marine Finfish Aquaculture**

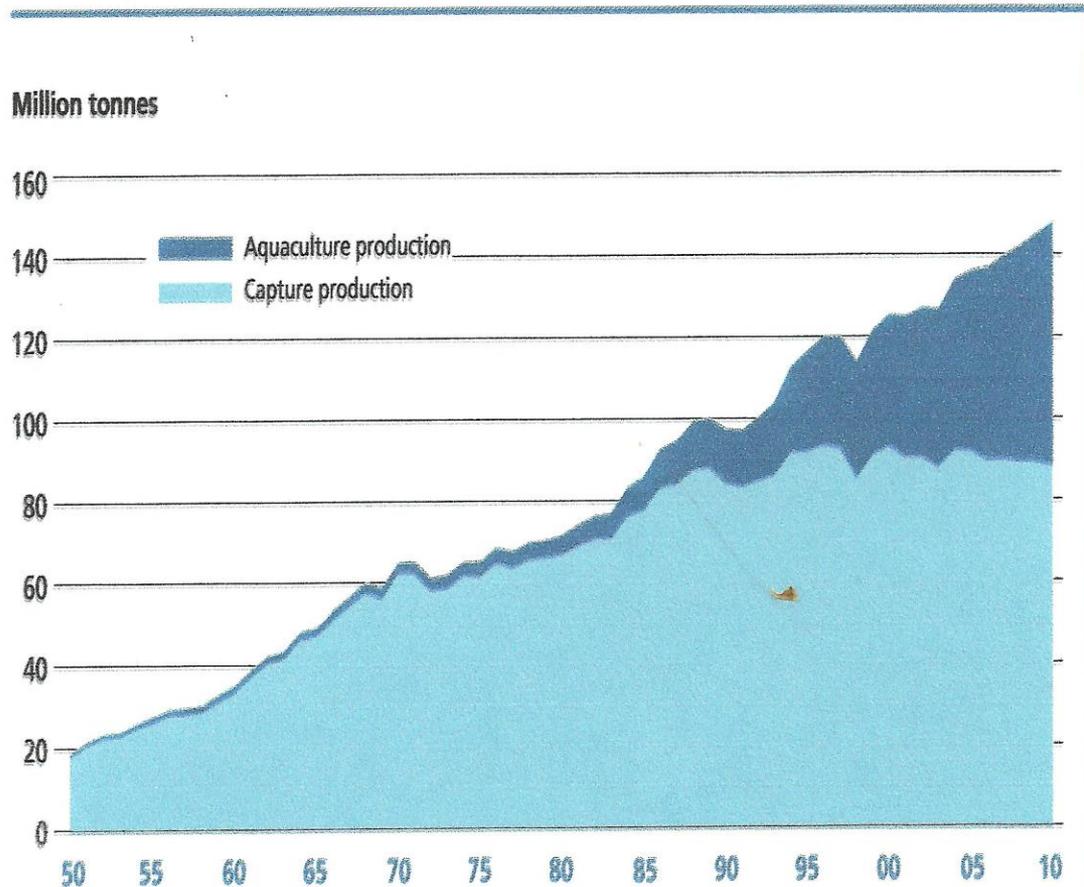
**2. Inland Freshwater Aquaculture**

**3. Shellfish Aquaculture**

# FAO Statistics for Fishery and Aquaculture 1950-2012 (1)

Figure 1

World capture fisheries and aquaculture production



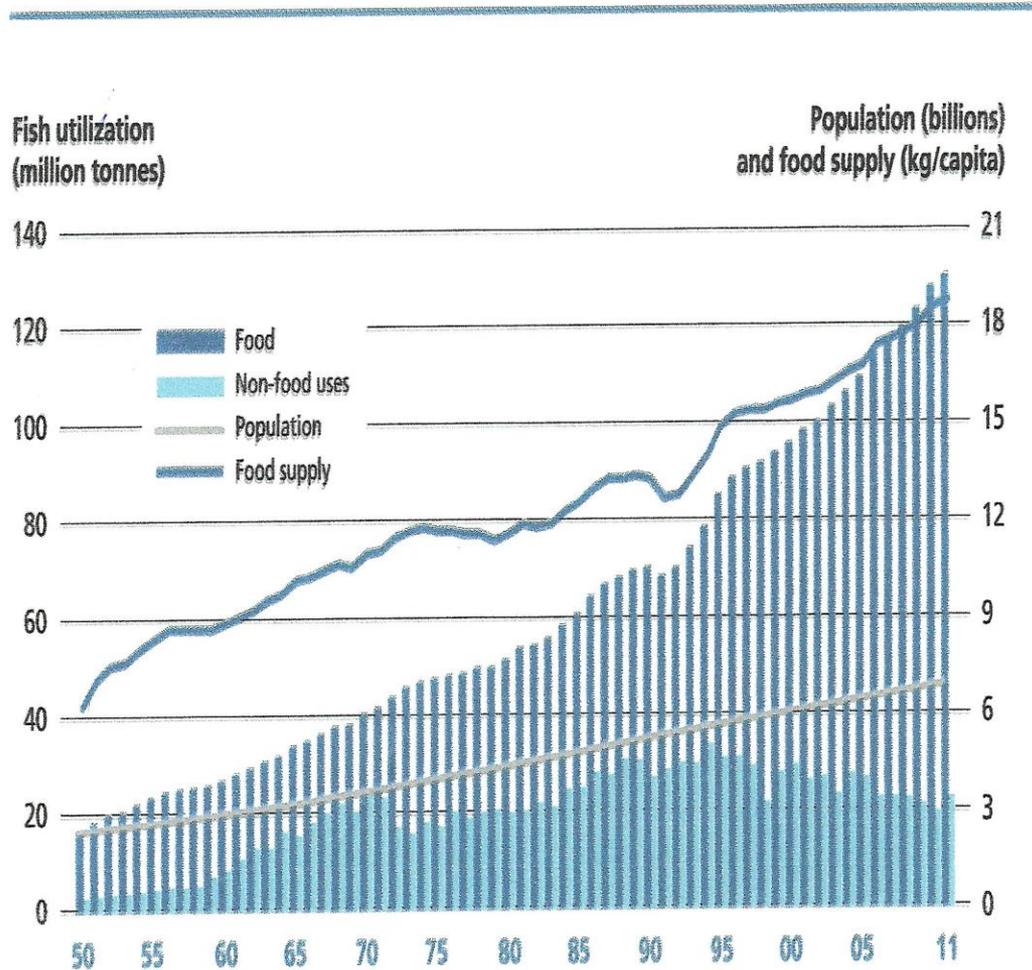
Capture fishery production has been flat since 1985, We have reached a **Maximum Sustainable Yield (MSY)** for the oceans.

All the additional fish in the world since then comes from aquaculture production.

# FAO Statistics (2)

Figure 2

World fish utilization and supply



**Aquaculture has not only maintained the supply of fish but actually increased per capita consumption as population grew from 3 to 7 billion persons!**

**Aquaculture fish supply is the largest single incremental source of animal protein while traditional animal sources are declining.**

# **Aquaculture in the U.S.**

**We import about 90% of our seafood from foreign sources. About half of those imports are produced by aquaculture in foreign countries.**

**Although the United States has the largest ocean economic zone in the world, one of its longest coastlines, and more irrigated agriculture than any other country, it is a minor aquaculture producer.**

**How can this be?**

**Why are we in this situation?**



# **Offshore Marine Finfish Aquaculture**



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# Inland Freshwater Aquaculture





# Shellfish Aquaculture





# **Economic Value to California**

**The existing farmside economic value of current inland fresh water fish farming and marine shellfish culture is about \$100 million dollars.**

**Because aquaculture is a primary production technology, its gross domestic product (GDP) value to the State of California is a multiple of at least three to four times the farm side value.**

# Recreational Fishery Value

Almost all warm water recreational fishing is created by stocking of fish from aquaculture. It makes a contribution to the economy much greater than its farm side value.

The value of recreational fish stocking of trout, catfish, bass and other sunfish has a very high economic multiplier of 10 to 30 times because of the very large amount of economic activity that it generates from equipment, travel and lodging and tourism.

# **Indirect Value of Shellfish Farming**

**Shellfish farming has a high economic value not only in its direct contribution to GDP but is an integral part of many coastal communities because of its environmental and cultural influences. These all contribute to value of coastal tourism in California.**

# Potential Future Economic Value

The largest opportunity for expansion of aquaculture in California is clearly offshore marine finfish aquaculture

Unfortunately, it is for practical purposes presently outside any legal framework for it to be implemented in California marine waters.

# **Magnitude of Marine Finfish Culture**

**Marine finfish aquaculture in California state and federal waters has a potential economic value that would come from at least ten's of millions of pounds high value fish (striped bass, yellowtail, white sea bass and several other potential species).**

# **Value of Marine Fish Farming**

**From less than 0.2% of state waters, marine fish farming could produce hundreds millions of dollars of farm side value and....**

**More than a billion dollars GDP creating thousands of jobs, the restoration of working waterfronts, and a huge improvement in the variety, quality, and nutrition from fresh fish available to the California consumer.**

# Challenge and Opportunity

The relationship of the industry to its major regulatory agency is, at best, a kind of amiable tolerance. We need a proactive and supportive CDFW to make advances in aquaculture production.

Recommend to the legislature that the CDFW significantly upgrade its staff expertise and resources to promote and support an expanding aquaculture industry

Finalizing and the marine PEIR after 14 years since its enabling legislation is an essential step for offshore marine finfish aquaculture.