

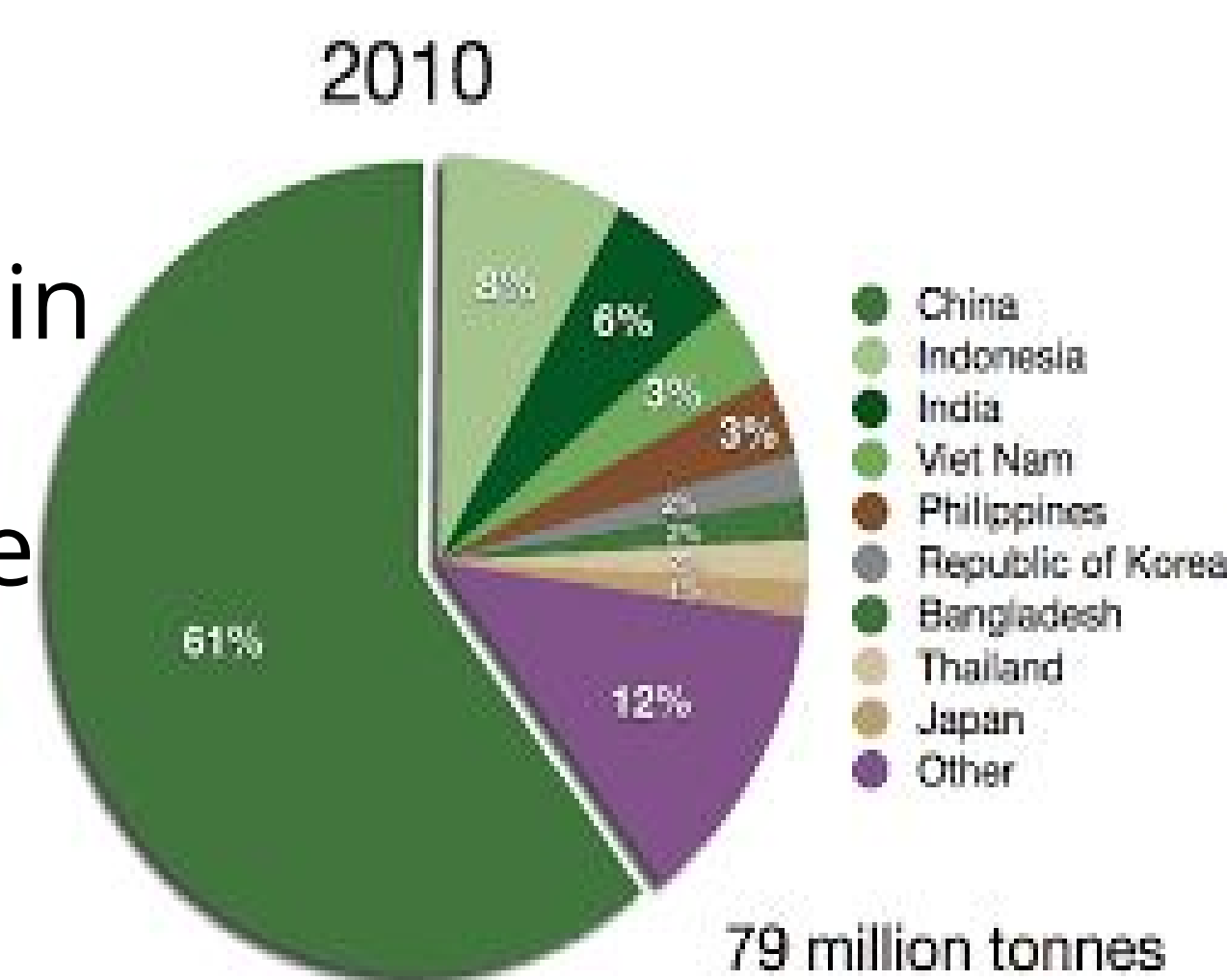
Aquaculture: The Environmental Impacts of Shrimp Farming on its Surrounding Ecosystem



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What is Aquaculture?

- The breeding, raising, and harvesting of marine species
- Can take place in the open ocean, in inland ponds, or in man-made tanks
- Primary products of marine aquaculture:
 - Oysters
 - Clams
 - Shrimp
 - Mussels
 - Salmón



Shrimp Aquaculture

- Farmed shrimp accounts for 55 percent of the shrimp produced globally
- Most shrimp aquaculture occurs in China, followed by Thailand, Indonesia, India, Vietnam, Brazil, Ecuador, and Bangladesh
 - This has become a substantial income for these countries
- Investors seeking profits have greatly intensified farming methods although at significant cost to the environment.

Types of shrimp Farms

Offshore

- Shrimp kept in cages underwater
- High concentration leads to large amounts of waste
- Higher risk of picking up diseases and bacteria

Inland

- Shrimp kept in shallow, inland ponds
- Excessive waste leads to eutrophication of the farms
- Waste water drains into soil and causes increased acidity and salt levels

Closed-System

- Shrimp kept in indoor facilities that are closely monitored
- Pond water is recirculated through filters, which helps remove toxins
- Often considered most sustainable, though high in cost

The Environmental Dilemma

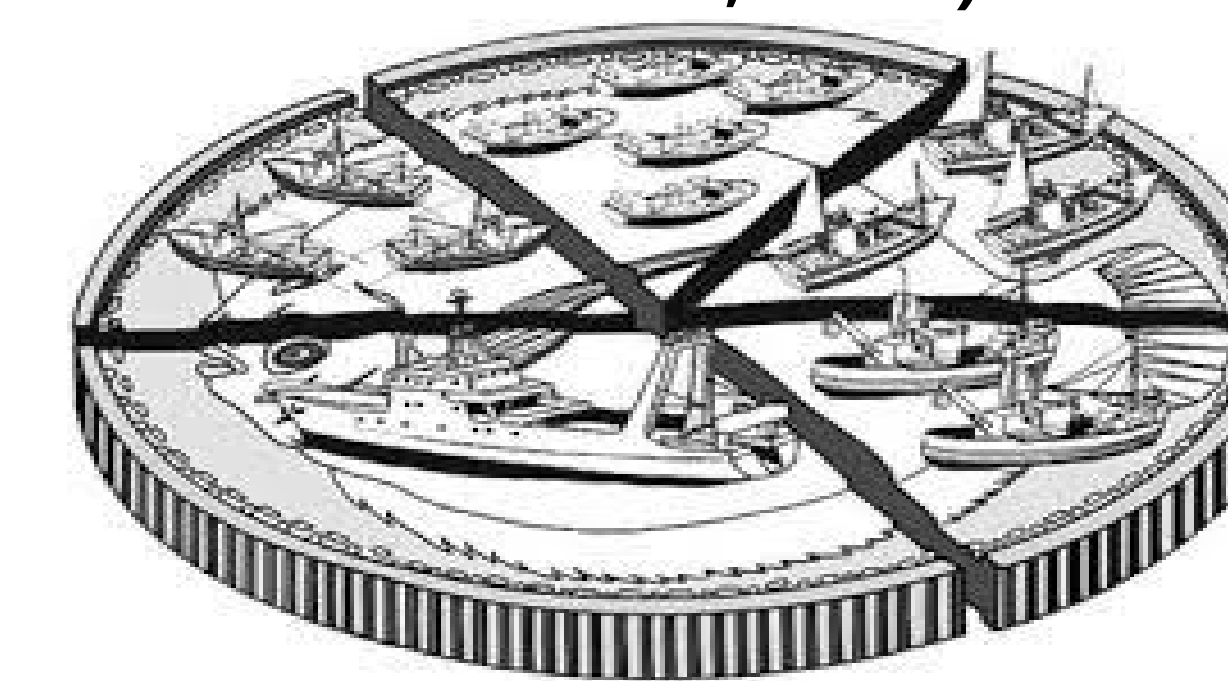
- As aquaculture production rises, the amount of food increases, which correlates into more waste material and other suspended solids.



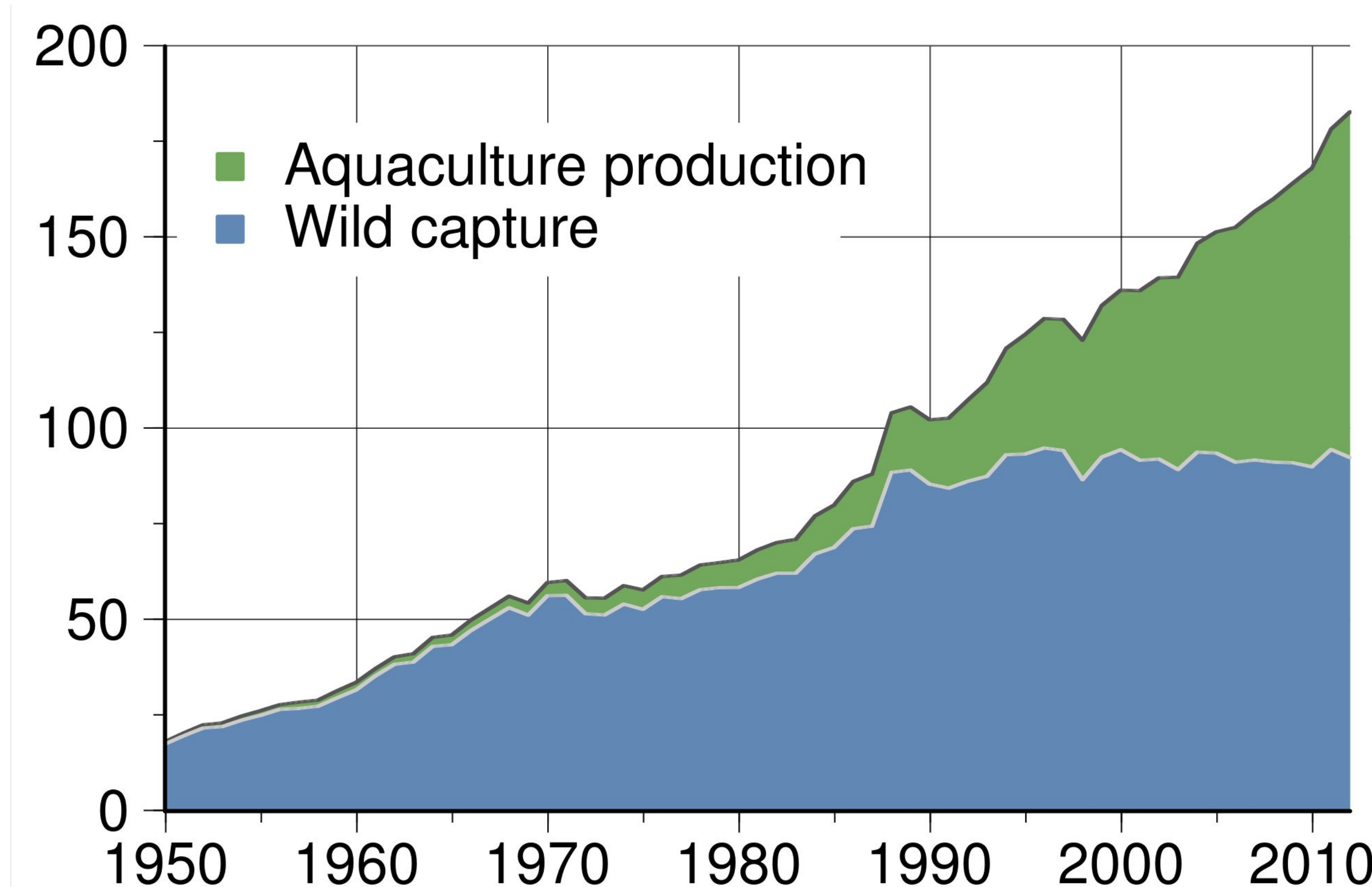
- This waste is responsible for oxygen depletion and a higher level of turbidity in the waters. These two things are prominent factors in the salinization of water supplies.
 - This wastewater also adds salts and acids to the soil which can make the surrounding land unsuitable for plant growth
- Shrimp waste that is rich in nutrients causes an increase in aquatic algae and plant growth and causes the amount of oxygen to decrease.
- Large-scale shrimp farming also destroys coastal habitats through the physical degradation of wetlands.

Solutions

- Introduce a waste treatment facility like we use with our cities. For example, waste is filtered out, and it is exposed to microorganisms that eat and break down the waste so that it is not toxic, and it is then able to be released back into water supplies
- Build fisheries deeper into the ocean because it doesn't have such a huge impact on our wetlands
- Set a quota for everybody growing shrimp fisheries where they can only breed and sell a certain amount.
- Force buyers to buy shrimp from produces meeting set standards
- Breed shrimp less susceptible to disease
- identify critical habitats (e.g. lagoons, mangroves), their state, and existing threats (agriculture, urbanization, etc.)



Visual Aid



Conclusion

- Waste from shrimp aquaculture is hurting our environment in more ways you think
- Because of the high demand of shrimp, intensive farming is becoming an even bigger problem
- There are different solutions we can utilize that will take the effort of everybody involved to ensure their success
- Everyone must cut down on the amount of shrimp they need, so that farms are less concentrated

Works Cited

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