

Chapter 6: Aquaculture and Agriculture threats to Mangroves [Cedar IP1]

Aquaculture threat to Mangroves

Core Concept: Converting complex, multi-functional ecosystems into single-use agricultural land destroys the natural tidal balance and introduces harmful pollutants.

Statistics

52% OF MANGROVE LOSS

is driven globally by the aquaculture industry.

38% SHRIMP FARMING ONLY

is responsible for this global decline.

Regional Pressures

Southeast Asia: Experiences annual mangrove loss rates nearly double the global average, heavily driven by rapid shrimp pond expansion.

Shrimp farmers dig channels to supply the ponds with enormous quantities of freshwater and seawater. These water diversions alter the natural flow of water that maintains the health of surrounding mangroves.

Real-Life Impact [LDQ case study examples]

Mekong Delta, Vietnam: Due to disease and severe ecosystem collapse from cleared mangroves, farmers often get only one good harvest every four years, leaving them with neither forests nor sustainable income.

Agricultural threat on Mangroves

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Real Life Impact [LDQ case study examples]

Palm oil in Borneo

To meet global demand, oil palm plantations in Malaysia grew from just **60,000 hectares** in 1960 to over **3 million hectares** by 2001, rapidly encroaching on coastal zones and fragmenting remaining mangrove habitats.

Rice in west Africa

Guinea-Bissau has west Africa's largest mangrove rice cultivation area. Historical expansion has dedicated up to **70,000 hectares** to this crop, which blocks natural tidal flushing and introduces chemical fertilizer runoff.

Why is agriculture a threat?

- Despite their resilience, mangroves can tolerate only a limited amount of agricultural and industrial pollution without dying.
- In addition, waterways are often diverted for irrigation or paved over for roadways, which alter the natural flow of water.
- Because mangrove forests are adapted to tidal fluctuations, they can be destroyed by such changes to their habitats.