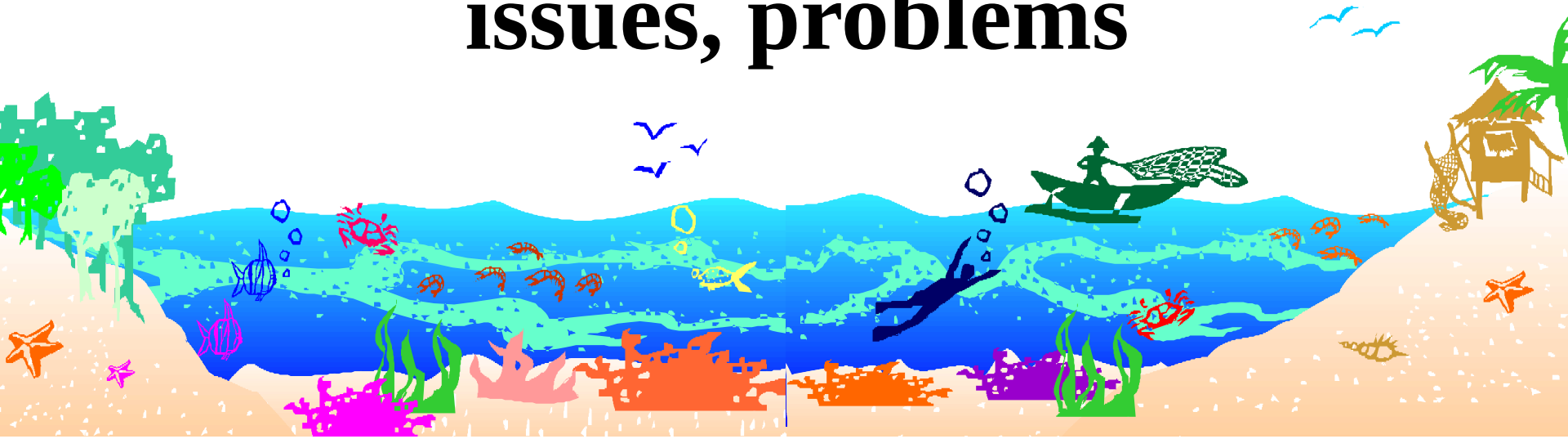
Lecture/Discussion #2:

The Philippine coastal zone: An endangered environment, issues, problems



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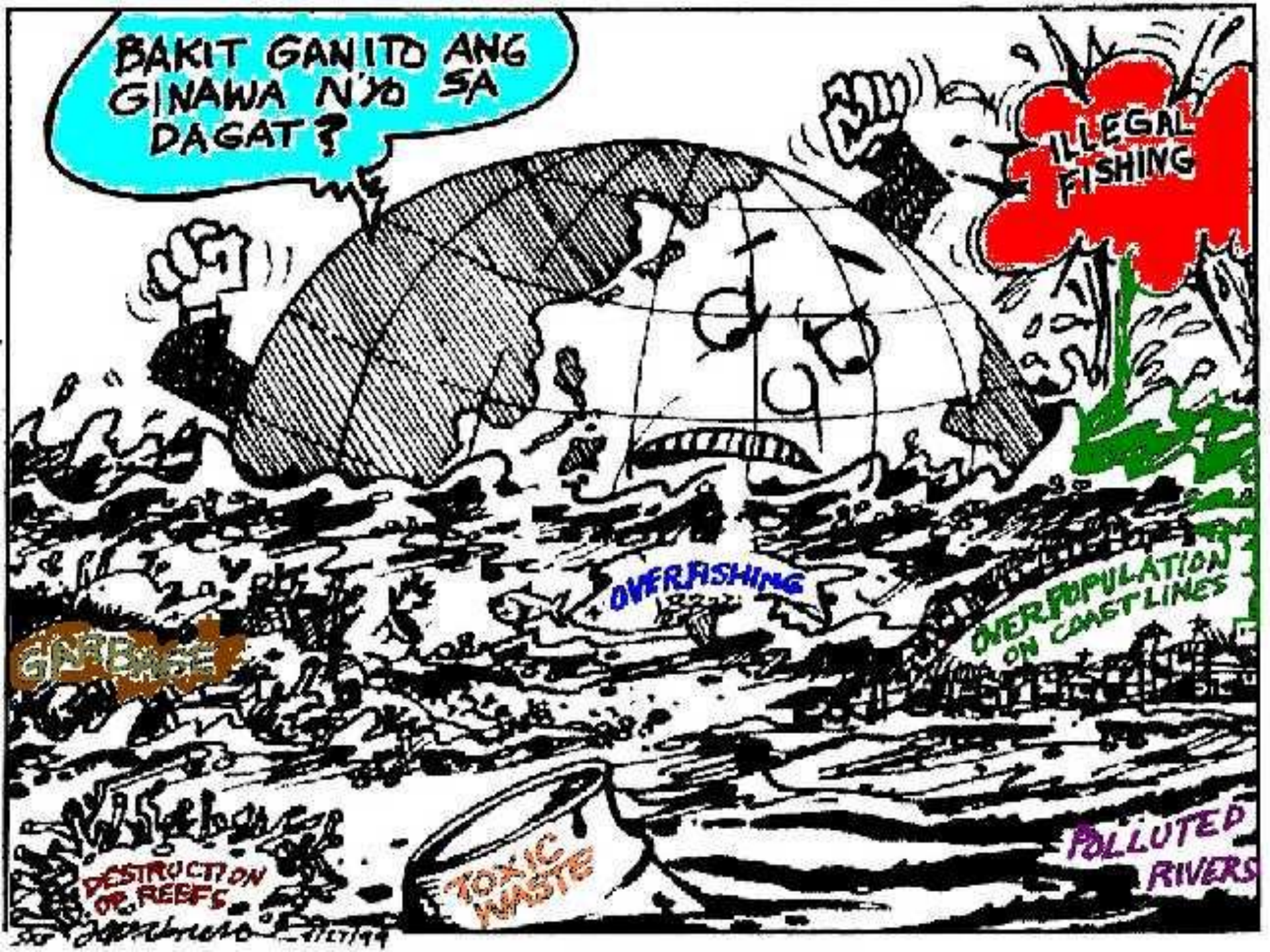
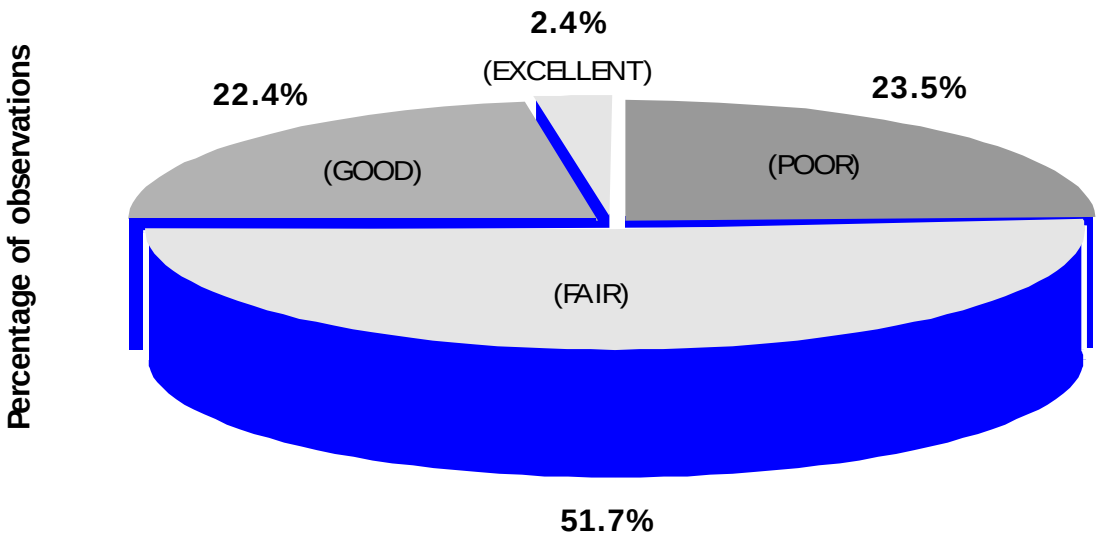

BAKIT GANITO ANG GINAWA N'YO SA DAGAT?
ILLEGAL FISHING
OVERFISHING
OVERPOPULATION ON COASTLINES
DESTRUCTION OF REEFS
TOXIC WASTE
POLLUTED RIVERS

TRAWLING
OVERFISHING
DETERIORATING ECOLOGY
POLLUTION
SILTATION
SEDIMENTATION
DOMESTIC WASTE

Coral reef degradation

Status of Philippine coral reefs at 14 localities

(85 reefs samples)



Coral reef condition as percentage of hard coral cover

0-24.9% Poor 25-49.9% Fair 50-74.9% Good 75-100% Excellent
(85 reefs sampled)

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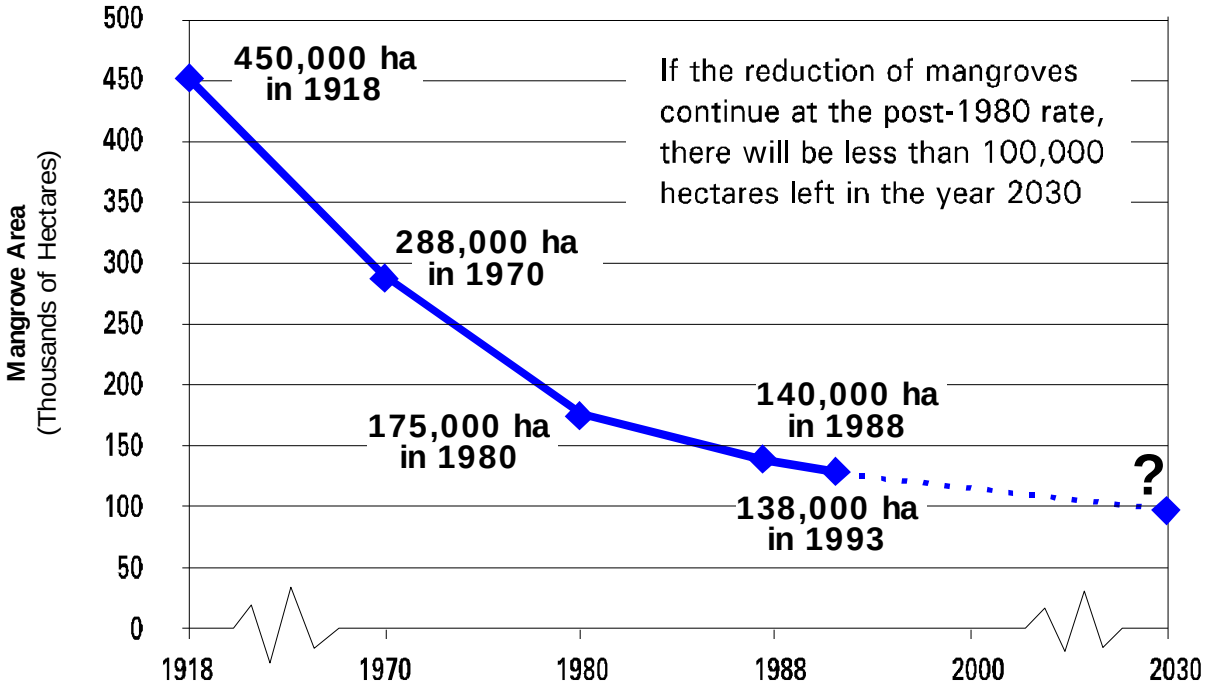
Mangroves in trouble

Decline of mangrove resource in the Philippines



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Loss of seagrass beds

Loss of seagrass beds are attributed to the following:

- Land use activities such as encroachment in the habitat through reclamation and improper shoreline development including the construction of structures that impede natural water movement
- Use of destructive fishing gears that scour and scrape the seagrass beds
- Sedimentation and siltation from upland areas
- Introduction of water borne pollutants from domestic and industrial wastes

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Loss of marine sand through mining/quarrying and inappropriate coastal development

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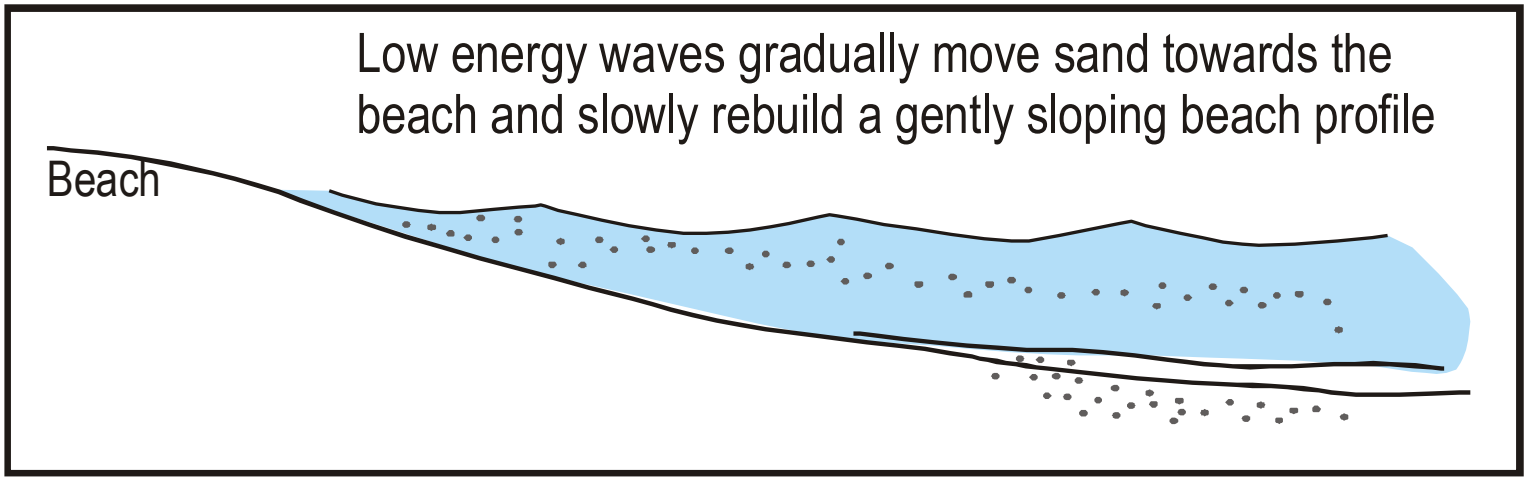
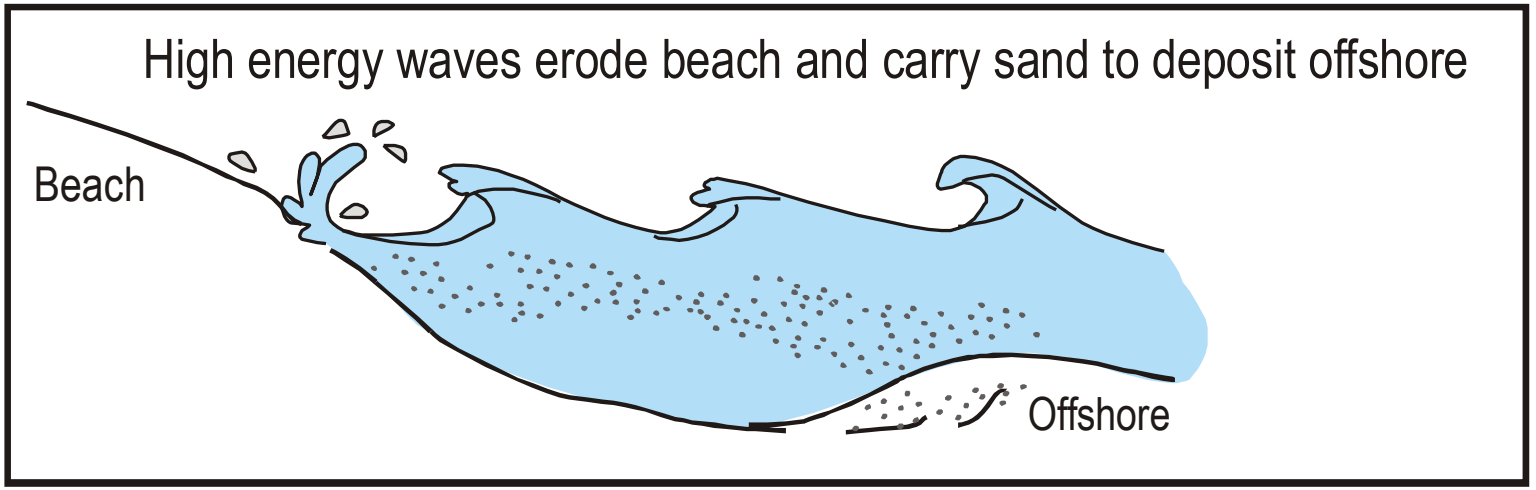
Seasonal variations in beach erosion and accretion





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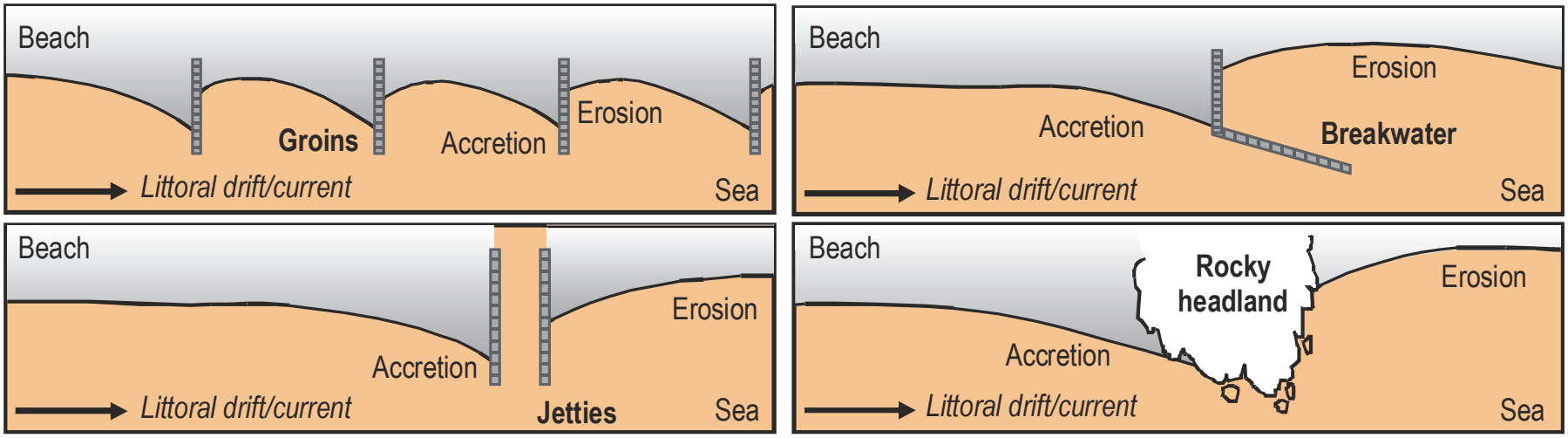
Examples of down-drift erosion resulting from hard engineering solutions and headlands as seen from aerial view



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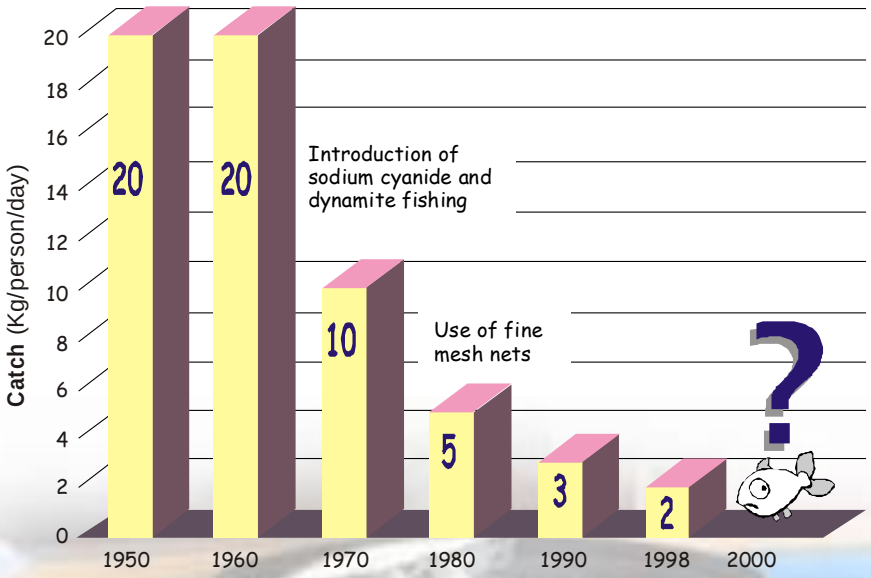
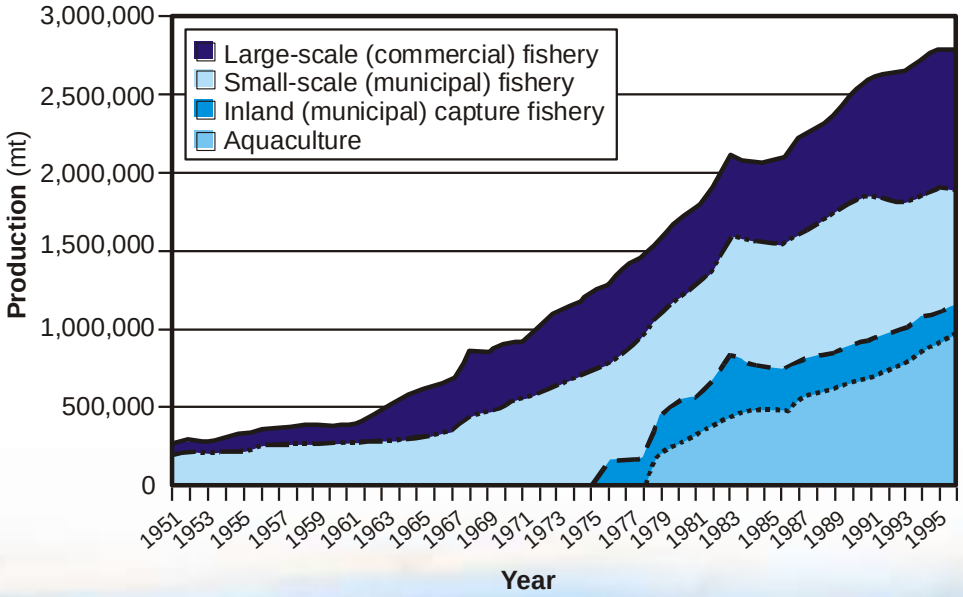
Declining fish catch

Trend in estimated daily fish catch per municipal fisher for Olango Island, Cebu



Fisheries-related food production for 1951-1996



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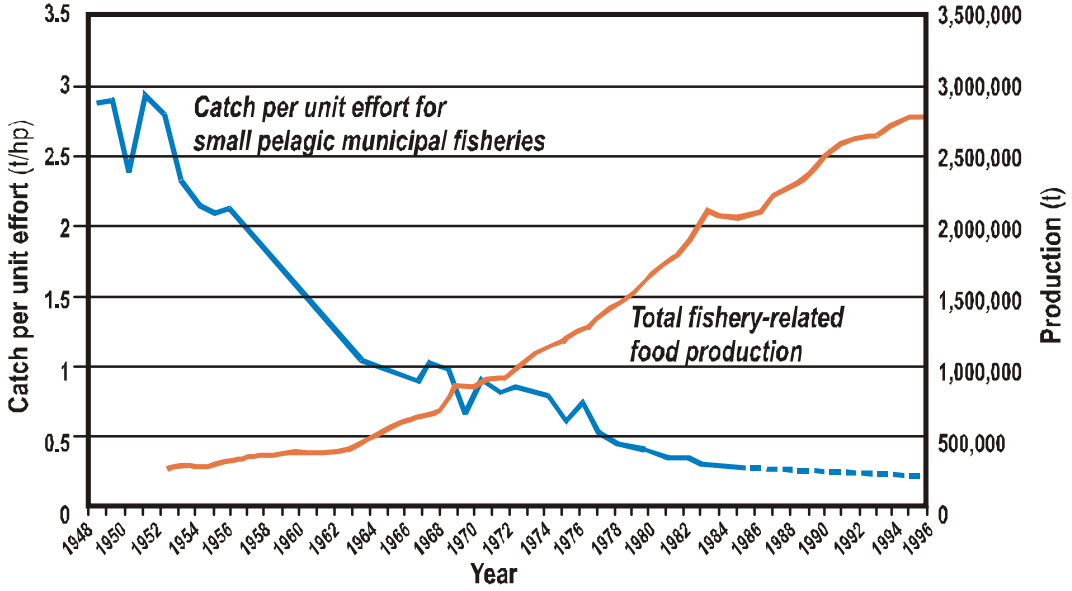
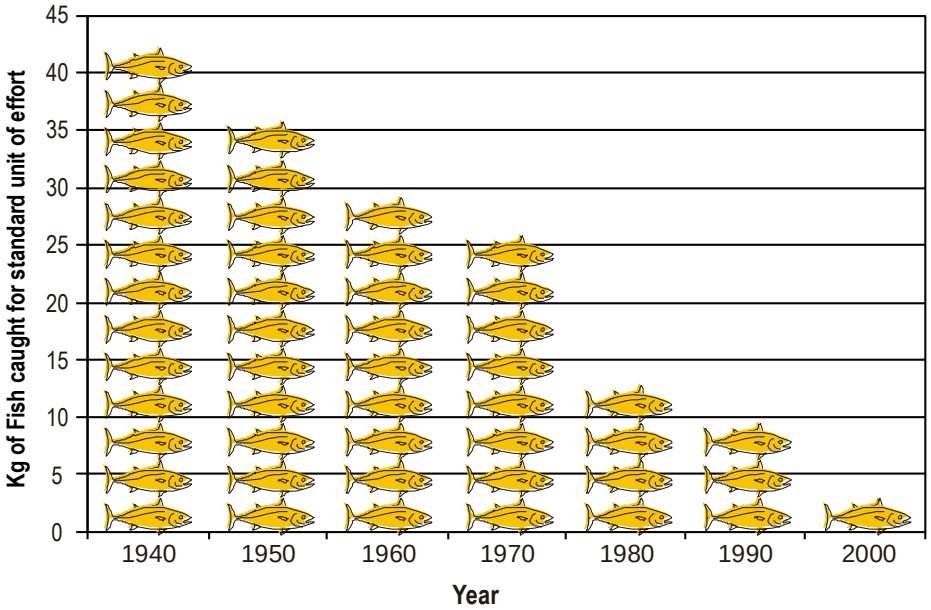


Trend in catch per unit effort for municipal small pelagic fisheries since 1948 and total fisheries production

Average catch of fish per unit effort since 1940s for fishers using hook-and-line from six provinces around the Philippines



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Illegal destructive activities

- Blast fishing, use of poisons, superlights, muro-ami, fine mesh nets, in fishing
- Conversion of mangroves and seagrass habitats to land or other uses resulting in decline of nearshore catch
- Mine sand and beach mining/quarrying
- Harvesting of banned species including corals, whale sharks, manta rays, giant clams and endangered marine species
- Non-observance of shoreline setback regulations resulting in damaging construction activities and development in the coastal zone
- Inappropriate tourism activities/ development
- Pollution
- Loss of marine biodiversity

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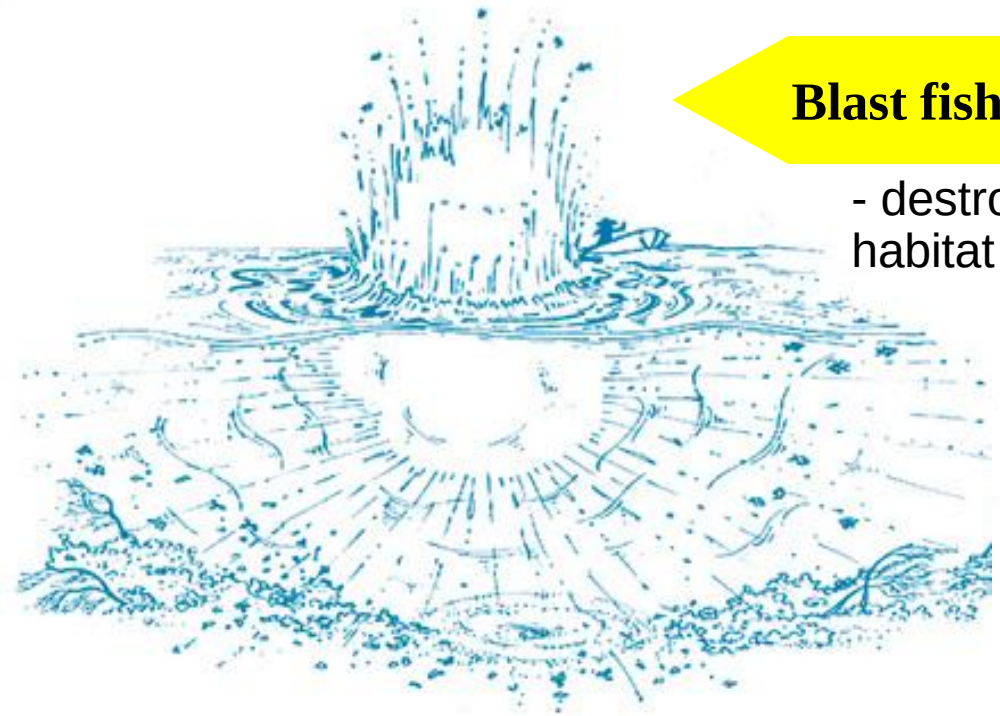
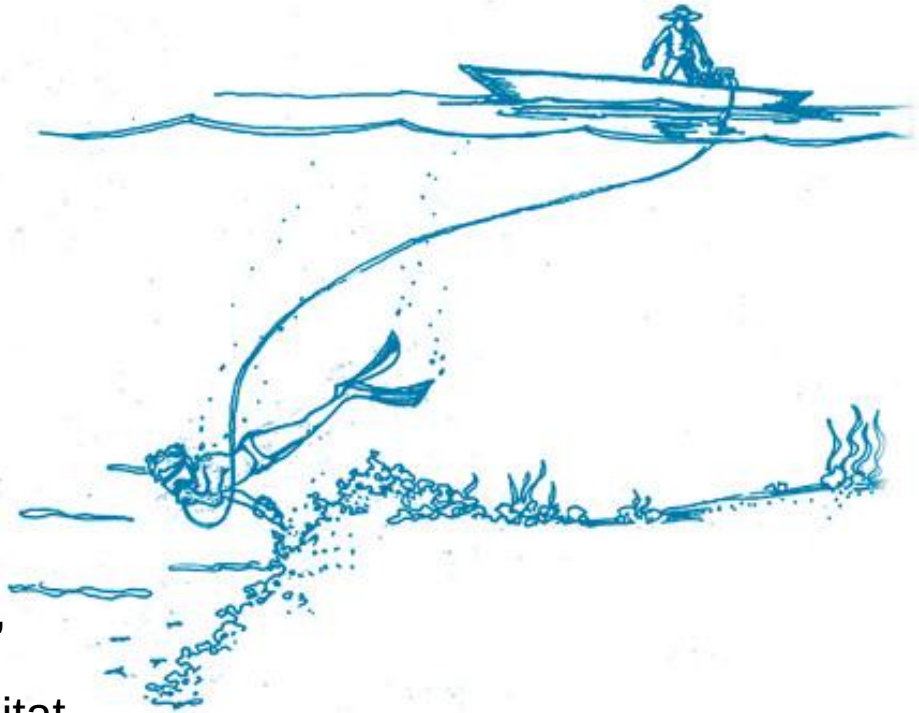
Common fishing gear (nationally or locally) in the Philippines and the potential damage caused by the gear



Blast fishing

- destroys the reef and fish habitat along with the fish



Compressor fishing

- allows the fisher to use poison, collect almost anything, and to seriously disturb the bottom habitat

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Too much fishing is killing the fishing.

Overfishing occurs when the quantity of fish harvested causes a net reduction of the fish population, thereby limiting production from fish stock for the future.

For so long now, fish are caught much faster than their ability to naturally replenish.

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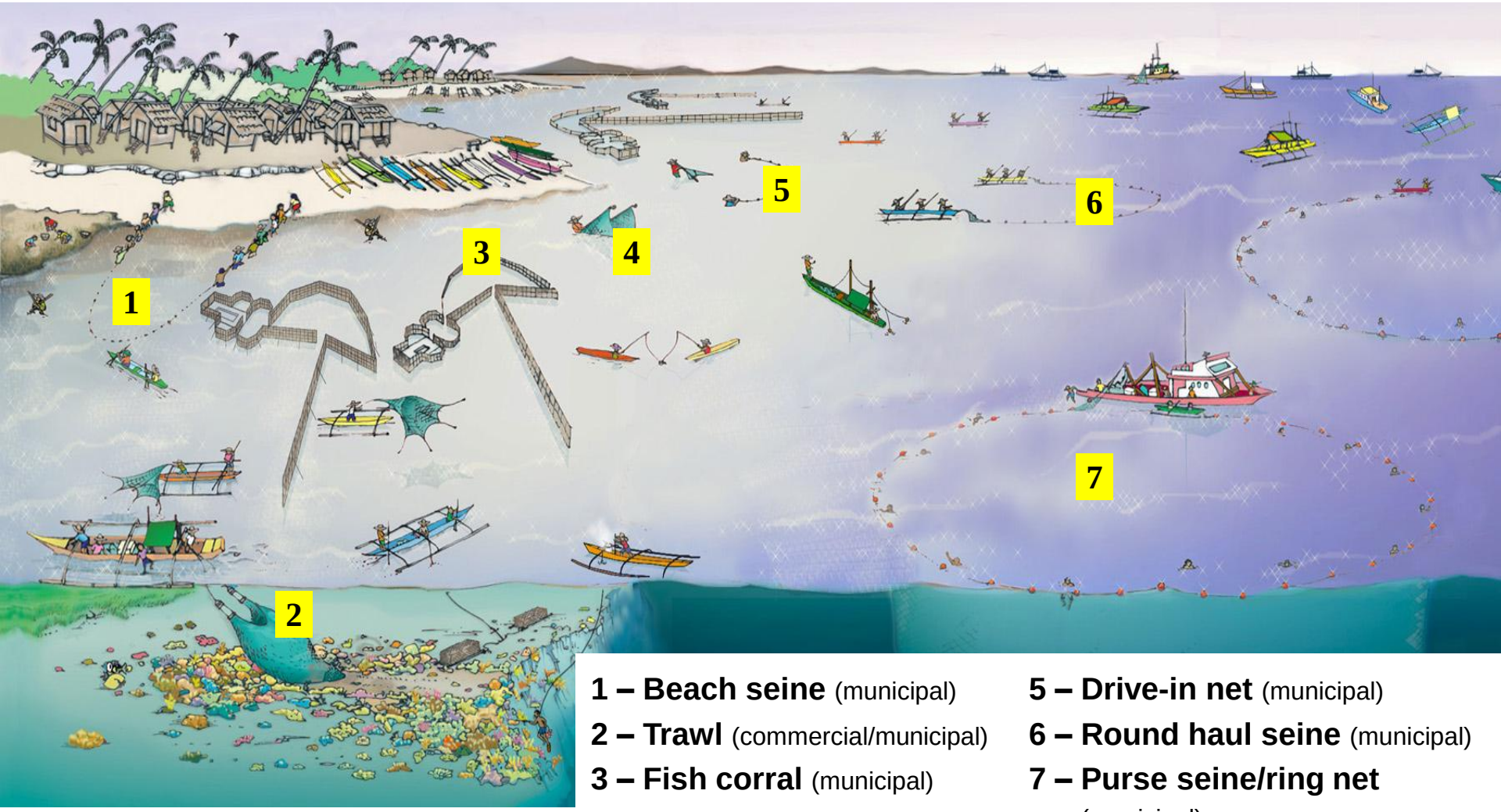
The lack of management measures and open access fishing result in overfishing and overexploitation of fish stocks



1 – Beach seine (municipal)
2 – Trawl (commercial/municipal)
3 – Fish corral (municipal)
4 – Scissor net (municipal)
5 – Drive-in net (municipal)
6 – Round haul seine (municipal)
7 – Purse seine/ring net (municipal)

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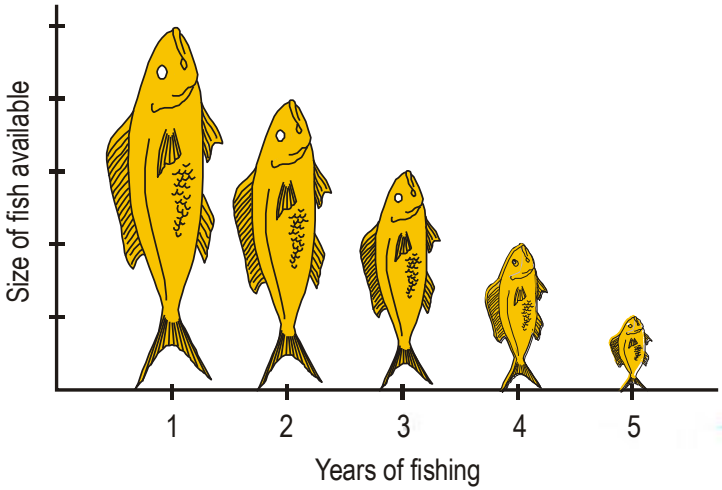
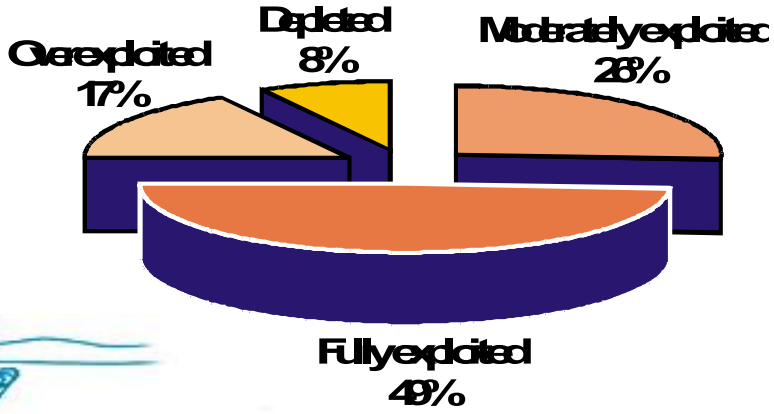
Overfishing

Growth overfishing



Level of exploitation of world's major fisheries



Current technologies give us the ability to catch everything in the sea

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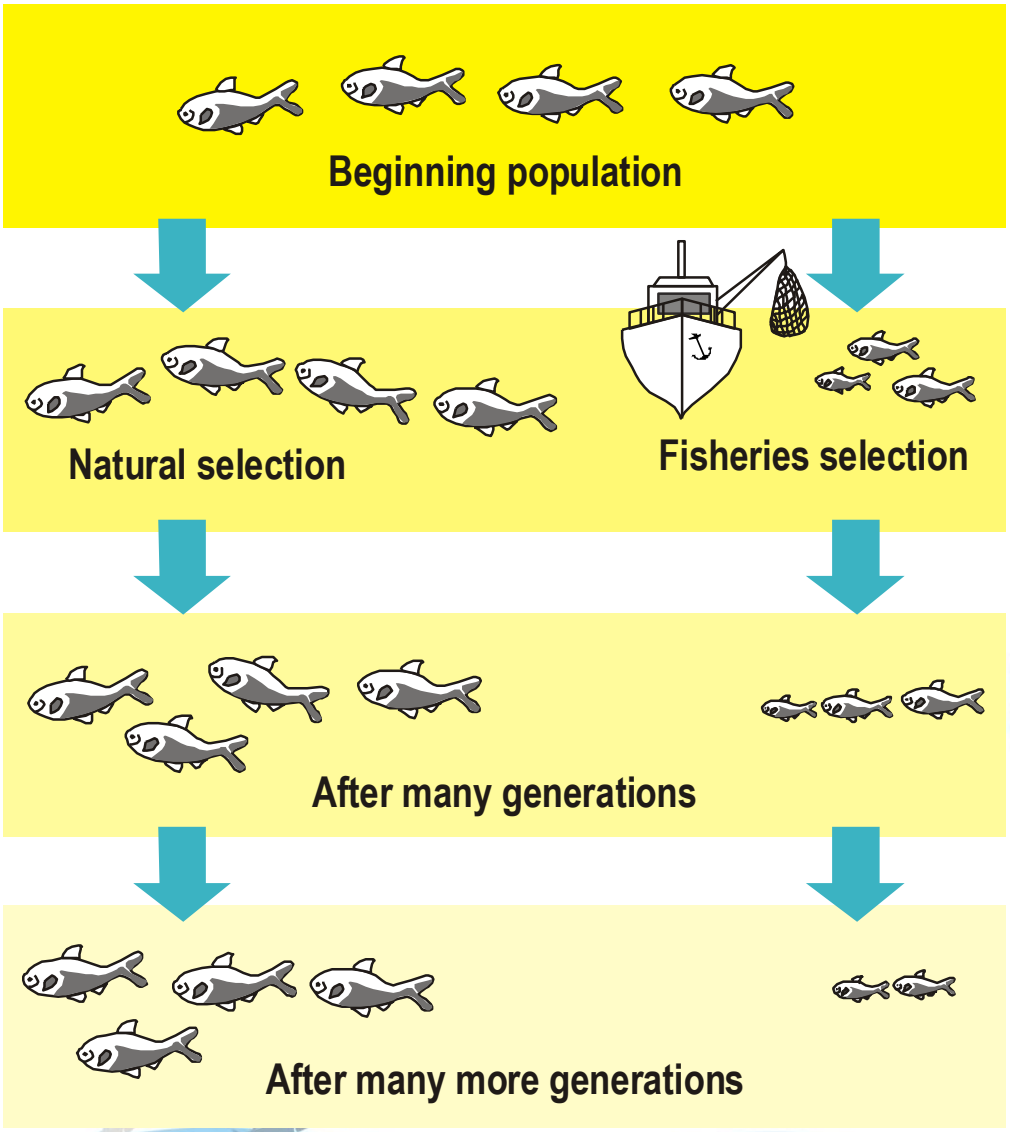
Long-term impacts of overfishing



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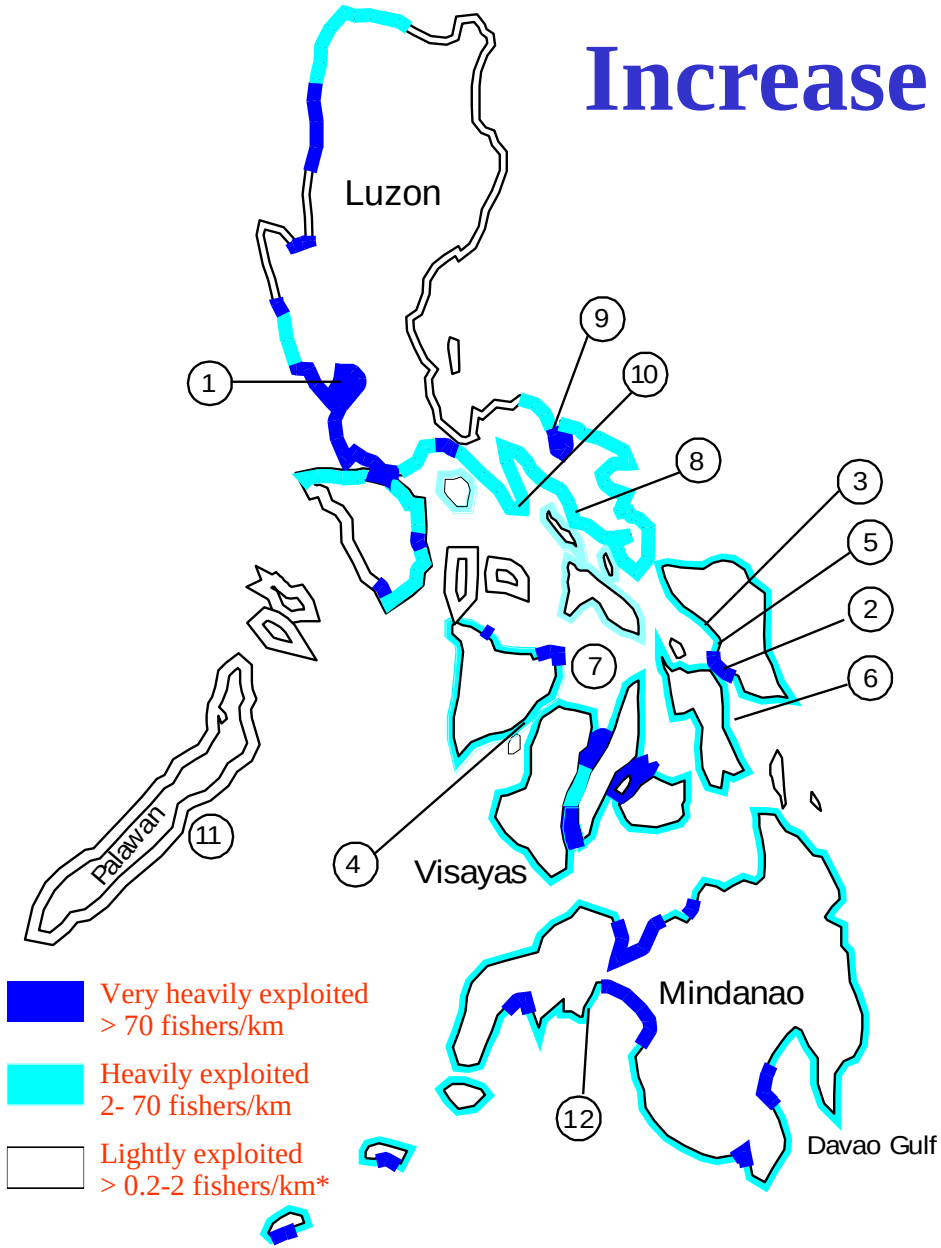
Increase in density of fishers



*The only coastal areas which may not be overfished occur here.

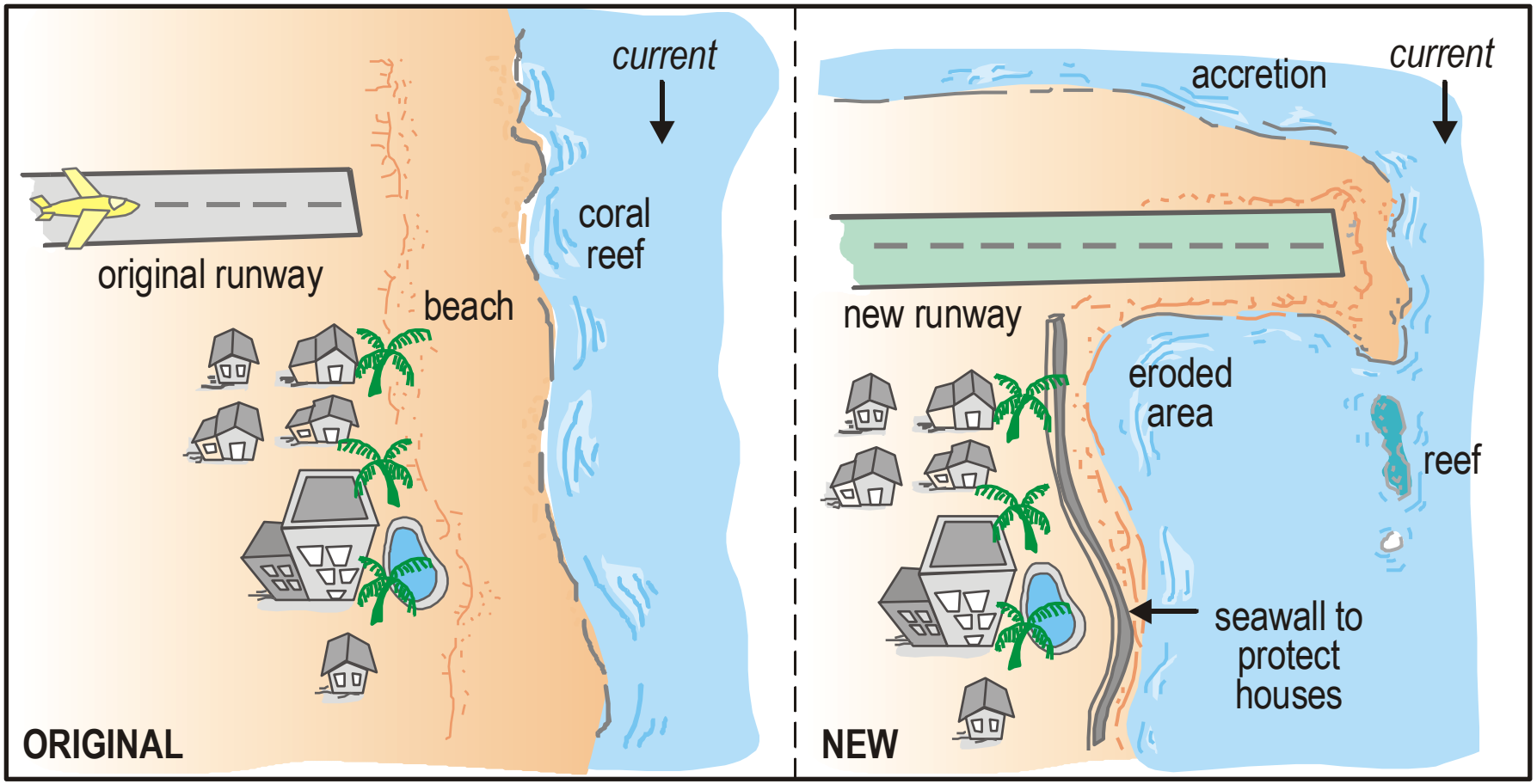
All major bays in the Philippines are heavily exploited

Important fishing bays:

1. Manila Bay
2. Carigara Bay
3. Samar
4. Guimaras Strait
5. Maqueda Bay
6. Leyte Gulf
7. Visayan Sea
8. Burias Pass
9. San Miguel Bay
10. Ragay Gulf
11. Honda Bay
12. Illana Bay

Source: Edralin *et al*. 1987

Inappropriate coastal development



Extension of airport runway interferes with sand movement, Dumaguete City

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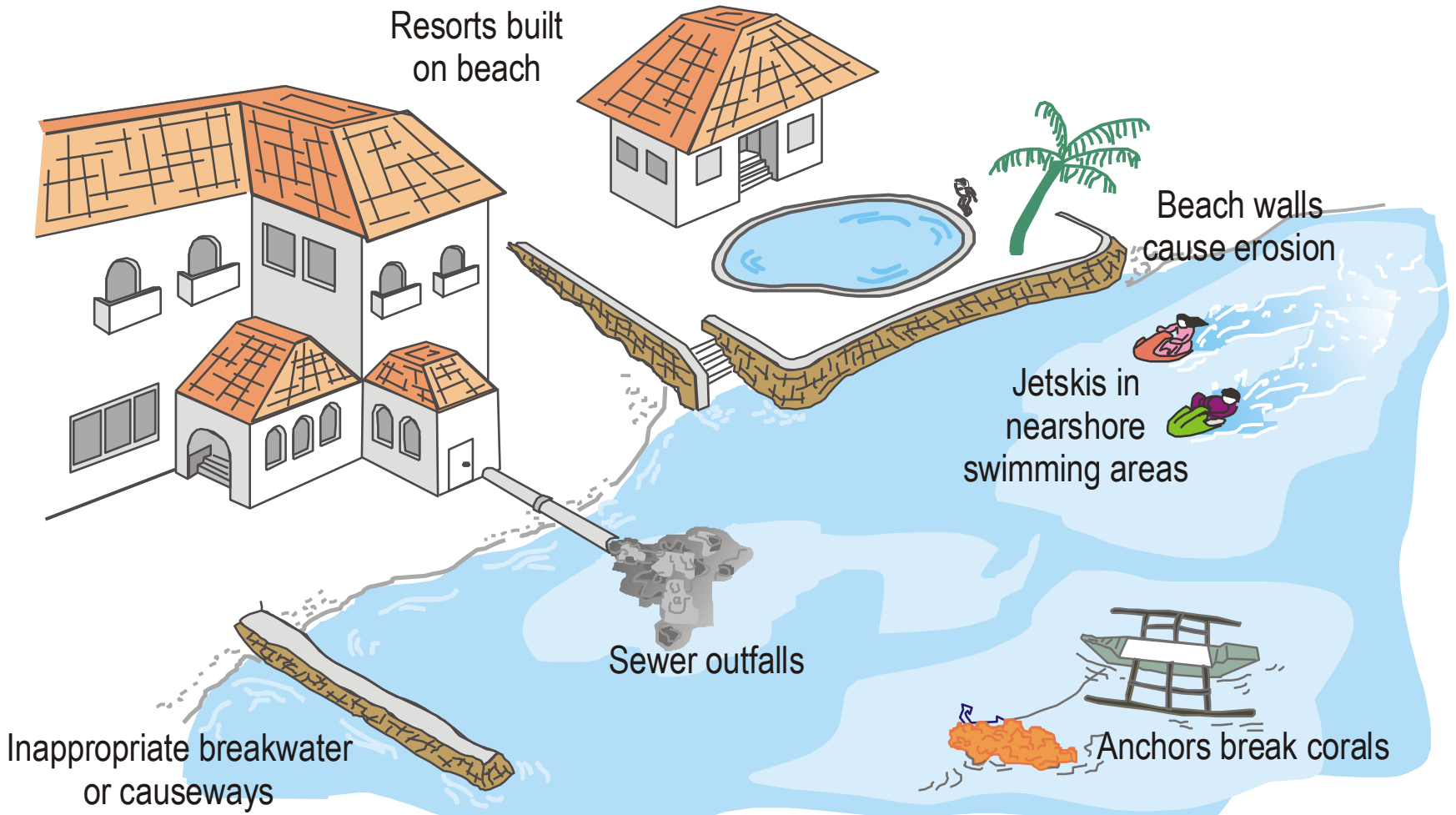
Frequent environmental impacts of tourism development and activities on the coastal zone



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Resource use conflicts

- Coastal areas all over the Philippines are being developed rapidly because people like to live and do business near the sea.
- The consequence is that beaches, foreshore land areas and nearshore coastal habitats are in demand and are being utilized for a wide variety of conflicting human uses including industry, construction, dumping, boat landings, tourism and human settlements.

Nearshore fisheries support many thousands of coastal dwellers through livelihood and food

Commercial size fishing vessels often compete with small-scale fishers in municipal waters

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Pollution and loss of water quality

Improper waste disposal is becoming a major problem

- About 50% of the coastal and marine pollution in the Philippines comes from runoff and land-based discharges.

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Erosion, sedimentation, accretion

- Illegal logging and improper site development have resulted in erosion of lands and subsequent sedimentation of wetlands and foreshore areas.

Shoreline erosion causes a real loss of land

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Growing population and deepening poverty

The average Filipino family has more than 5 members

- The coastal areas are under increasing pressure from rapid population growth of 2.4% per year and the consequent concentration of development activities in the coastal strip.
- More than 60% of the Philippine population live within what are considered coastal areas.
- The increasing population and poverty have put additional pressure on resources, subsequently resulting in increasing environmental damage, overfishing and alarming degradation of habitats.

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