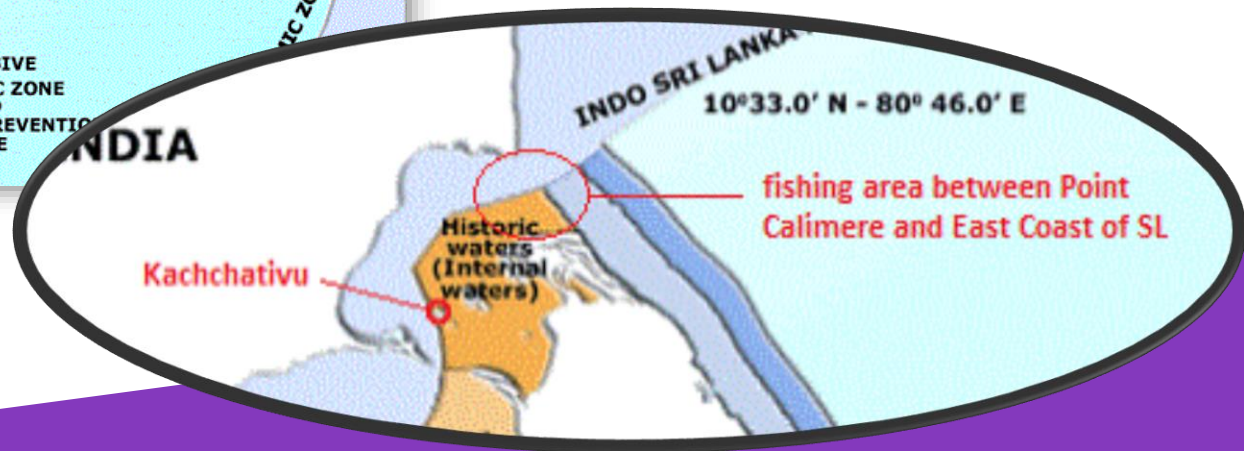
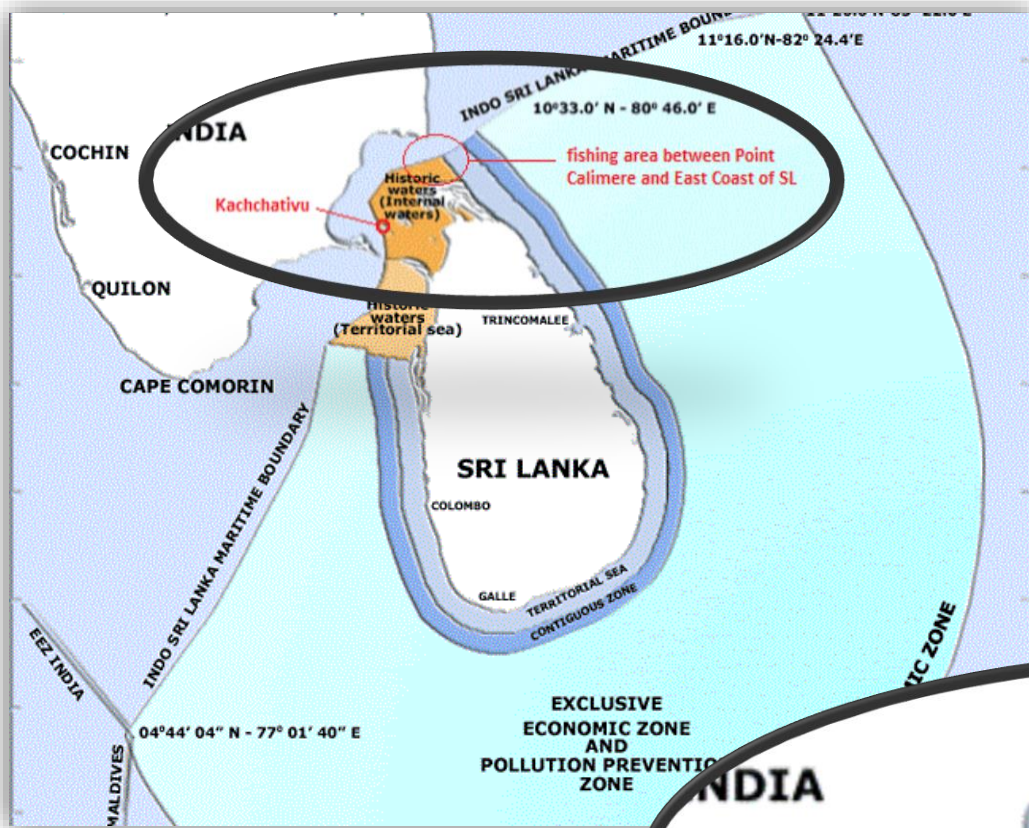




User Rights

2018

Sri Lanka's small scale fishermen
and mechanized trawlers



Sri Lanka's Coastline: 1340km^2

Exclusive Economic Zone (EEZ): $223,000\text{km}^2$

Contributions of the Fisheries



Nutrition

60% Annual
National
Protein
Requirement



Livelihood

2.7 million
Coastal
Communities
enriched



Employment

Approx.
560,000 jobs
provided

Main Fishery Sectors

Marine Fishery

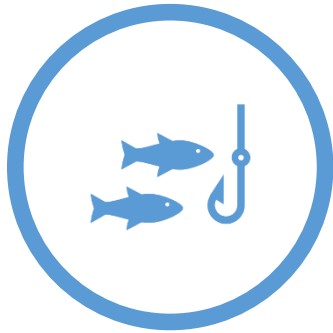
Inland

Aquaculture

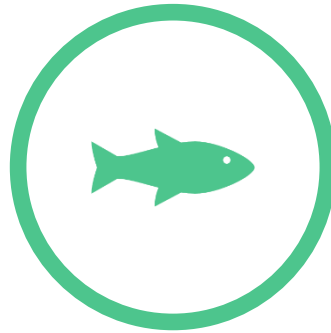
High Seas

Coastal

Marine Fishery



SMALL SCALE
FISHING INDUSTRY



MARINE FISHERY
SECTOR
FISHING IN SRI LANKA'S EEZ AND
HIGH SEAS



86% ANNUAL
FISHERY
PRODUCTION

Fishing Fleet

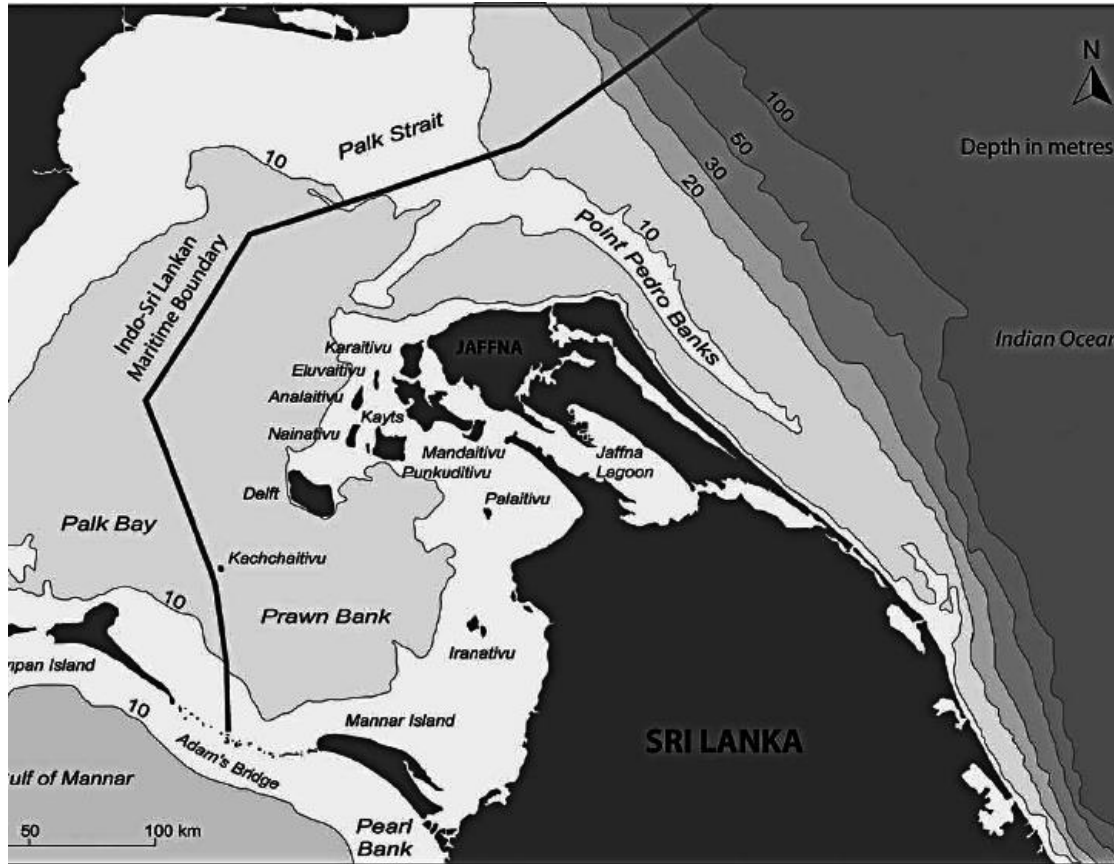
- Category: Small scale fishing vessels
- Multi day boats (IMUL*)
- consists of in board engine, insulated fish
- holds WITHOUT larger scale facilities:

NO

Freezers
Longline spools
Echo Sounder
Fish finder etc.

- Day Boats (OFRP)- (Insulated fish box)
- Non-Motorized Traditional crafts (NTRB)
 - Outrigger canoes
 - Log-rafts
 - Beach-seine craft
 - Other planked and dugout craft
- Crew Component of 1-8 people for all types of vessels





Fishing in the North of Sri Lanka

- **Biodiversity hotspot**
 1. Includes over 20% of the Indian Oceans marine life
 2. Over 3600 species in Gulf of Mannar

- **Shallow fishing grounds**

Majority of fishing conducted using

- Vessels: small motorized and non motorized crafts
- Gear : gill nets, hand line, small scale purse seine

- **30.8% marine fishery production in 2016**

Squid Fishery

8 species of squid found in Sri Lanka's EEZ

- Underutilized due to high requirement of man power and resources
- Traditional methods used, Manual
 - Nets
 - Hand line
 - Jig lines





Fishing Rights



Regulation

- Open access fishing rights (except beach seining and stake net fishing)
- Fishing grounds accessible to Sri Lankan origin and owned fishing vessels
- Establishment of Marine Protected Areas and habitats
- The Fisheries and Aquatic Resources Act No 2 of 1996
- The Sri Lanka Coast Conservation Act no. 57
- National plan of action to prevent, deter and eliminate Illegal, Unreported and Unregulated (IUU) fishing

Fisheries and marine laws are constantly being updated to ensure regulation and management of

- Import-export management
- prohibition and reduction or unsustainable fishing gear and practices
- protection of Endangered, Threatened and Protected species.



Fleet Management

Requirements of all fishing vessels

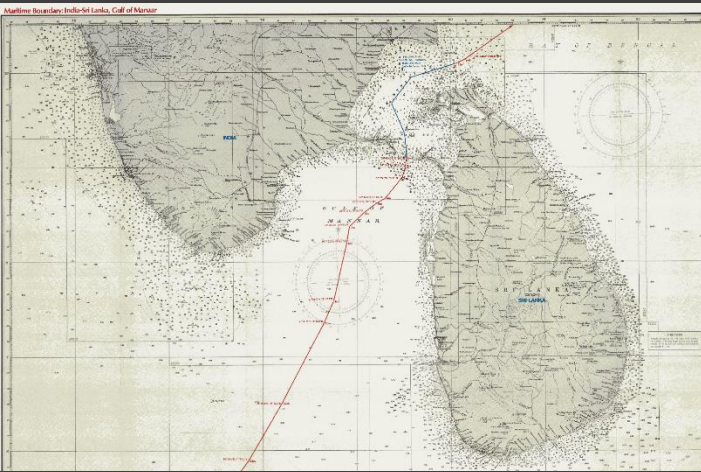
- Be registered and licensed for fishing
- maintain a log book for each catch
- All high seas fishing vessels consist of a Vessel Monitoring System (VMS)

International level regulation

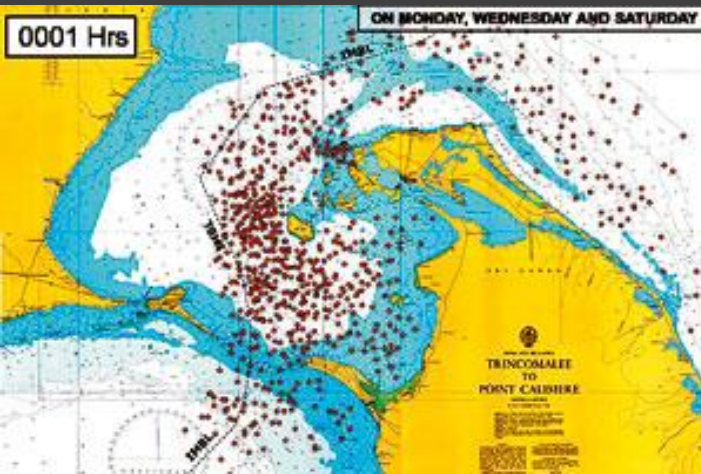
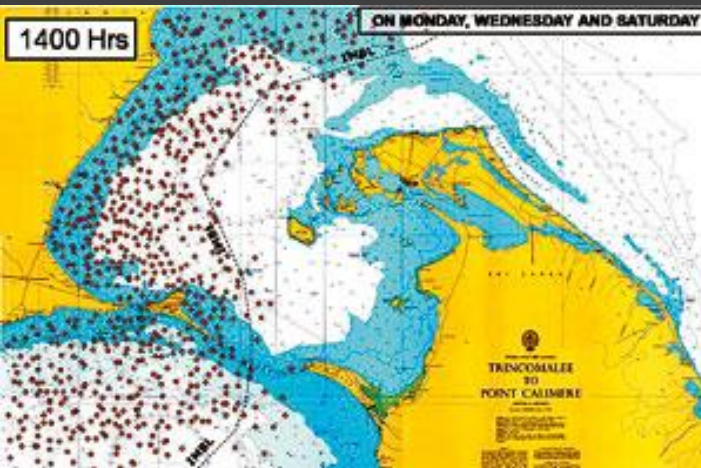
- Ratified the FAO agreement on port state measures (PSM),
- works closely with the Indian Ocean Tuna Commission (IOTC)
- Adopted the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Main Challenge

Conflict between Sri Lanka's
small scale fishermen and
mechanized trawlers



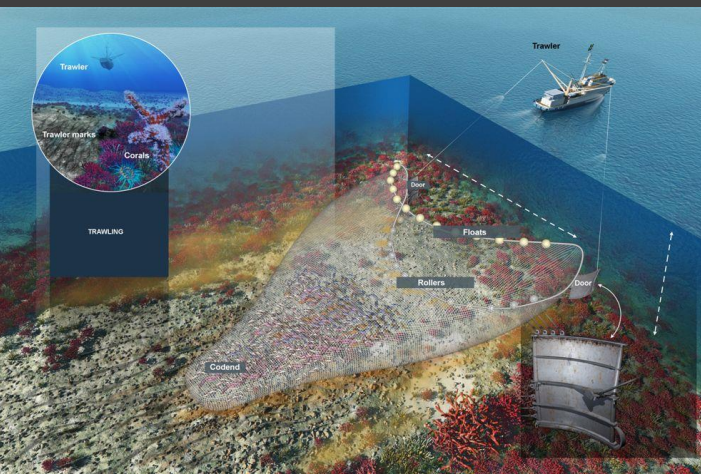
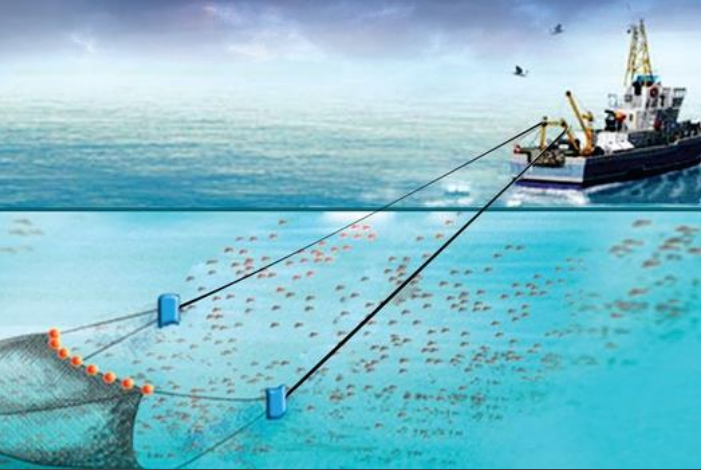
Fishermen in the North of Sri Lanka are faced with restriction of fishing grounds and depletion of marine resources due to illegal mechanized bottom trawlers



- Establishment of Indo-Sri Lankan Maritime boundary line (IMBL) and fishing rights signed by India and Sri Lanka in 1976.
- Restriction of Sri Lankan Fishermen in the North and East due to Civil War (1983).
- Illegal crossing of IMBL by illegal mechanized bottom trawlers to the Palk Strait and Gulf of Mannar.

Mechanized bottom trawling

- A net digs in to the first foot of the sea floor and dredge up everything as the net is dragged across the ocean floor.
- The dragging of the iron bars or metal plates fixed at the mouth of the trawling net
- The dredging of the sea bottom dislodges all sediment, coral and vegetation as the net gets dragged.
- Entire ecosystem of the area is destroyed



Limited Access to Fishing Grounds

- Sri Lankan fishing boats (17-23ft L.O.A)
- Mechanized Bottom Trawlers (28-46ft L.O.A)
- Unsafe for small boats to fish and the time trawlers are being utilized due to
 - Running over/cutting gear set by Sri Lankan fishermen
 - Damage to small boats due to collisions
- Bottom trawling is restricted in Sri Lankan waters (Sri Lankan fishermen have to face criminal charges and imprisonment if found guilty of mechanized bottom trawling)
- Sri Lankan fishermen are limited to immediate coastline and fishing, avoiding bottom trawlers





Depletion of marine resources

- Northern districts contributed to 30.8% marine fishery production in 2016
- Jaffna contributed 25% prior to 1985 and 7% in 2016
- Destruction of the ecosystems including
 - Sea bed
 - Nursery grounds
 - Coral



Ecosystem is never completely restored after damage

Indiscriminate fishing

- 80-90% by catch
- Catch of marine mammals and other Endangered/protected species
- Economic loss: Estimated loss of over USD 750 Million annually due to illegal bottom trawling



Moving
forward

Introduction of
environmentally sustainable
fishing practices and
modernized gear to increase
fishing operations



Proposed solution to conflict

- Introduction of environmentally friendly fishing practices, modernized gear and stringent enforcement of prohibited fishing gear will ensure that fishermen can sustainably utilize the marine resources.
- Increased vigilance and reporting = reduction of illegal mechanized bottom trawlers.
- Application of
 - Size segregated (SS) devices in pole and line fishing
 - automated squid jigging
- as a viable environmentally friendly solution to mitigate the conflict currently faced by small-scale fishermen.
- reducing the over exploitation of the fish stocks, pollution and environmental degradation of the sea bottom caused by dragged gear.



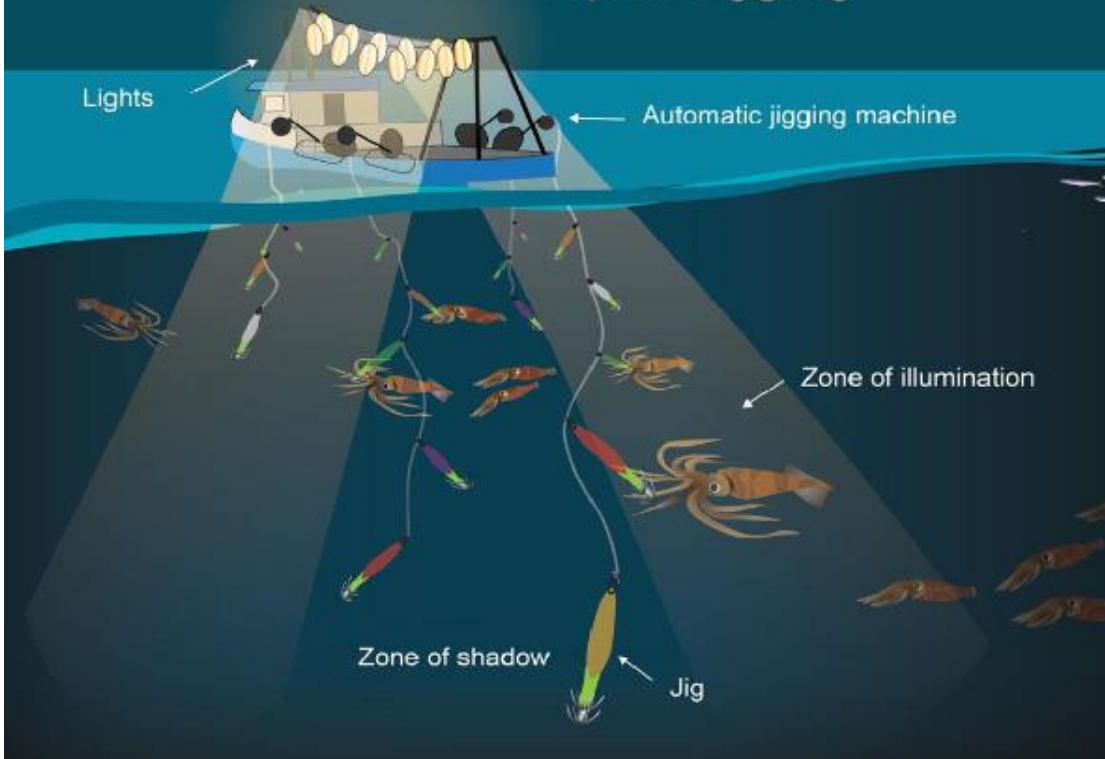
Size Segregation devices in pole and line fishing

Majority of fishermen in the north of Sri Lanka use gillnetting or beach seining as preferred fishing method due to the shallow nature of their fishing grounds.

- Gillnets are considered to be one of the least catch controllable and least environmentally sustainable gears.
- it is suggested that
 - Marine fishermen switch to longline, handline, jigging and pole and line gear.
 - vessels involved in pole and line fishing have a catch size regulation device installed on board.
- The Yellowfin tuna (YF), a highly migratory, pelagic species is one of the most commercially valuable species caught by Sri Lankan fishermen.
- Considering the low recruitment rates reported in the latest IOTC stock assessments this study proposes that a **minimum catch size** is introduced for pole and line fishing to minimize juvenile catch



Squid Jigging



- Less labour intensive
- Increased productivity
 - “2 fishermen + 2 automatic jigging machines = estimated productivity of 10 fishermen using hand jigging same cost of production”*
- Increased presence of Sri Lankan Fishermen in the fishing grounds

Automated squid jigging

Summary

- Sri Lanka's marine fishery is highly regulated
- Sri Lanka has an open access approach to marine fishing grounds
- The presence of illegal mechanized bottom trawlers in northern Sri Lanka has depleted marine resources and limited fishing ground access to small scale Sri Lankan fishermen.
- A solution to the conflict faced by small scale squid fishermen of Northern Sri Lanka due to Mechanized bottom trawlers was proposed.
- Proposed actions:
 - Introduction of size segregated fishing devices
 - Introduction of Modernized fishing gear - automated squid jigging
- In order to enable the Sri Lankan Fishermen to regain access to their fishing grounds and sustainably utilize their marine resources

Thank you

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