

The Impact of Bottom Trawling on Food Security, Sovereignty and Nutrition

Sumatra, Indonesia

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This case-study is part of the wider Transform Bottom Trawling Coalition research highlighting the global impact of bottom trawling on food security.

Introduction

Sumatra is home to diverse small-scale fisheries along both the Malacca Strait in the north and the Indian Ocean coast in the west. A West Sumatra study notes that fishing along the western coast is predominantly small-scale and central to coastal livelihoods, but fish production has declined since 2019 due to fishing pressure and environmental deterioration, with households responding through diversification, seasonal migration, and women group empowerment (Zamzami et al. 2023).

Bottom trawling and related industrial gear are reported in North Sumatra, parts of the Malacca Strait and Sumatra's Indian Ocean coast, including Bengkulu, where trawlers have long entered traditional fishing zones reserved for small-scale fishers. A JALA and EJF briefing describes North Sumatra as a national hotspot of trawl conflict and notes that the 3-mile traditional fishing zone is often violated, with weak enforcement and recurring clashes between trawlers and artisanal fishers (JALA and EJF, undated). A 2025 Mongabay report documents that current rules allow trawlers beyond a 12-nautical-mile exclusion zone, but local fishers report persistent inshore trawling within a few miles of shore (Simangunsong 2025).

Reports from Bengkulu highlight continued operation of prohibited trawl gear in coastal waters, including reports of up to 30 trawl boats operating in a day, and claims by traditional fishers that trawling has reduced their catches by as much as 80 percent while damaging coral reefs and spawning habitat (Lestari et al. 2024). Policy has shifted from national trawl bans in the early 1980s to later authorizations in specific zones and a 2015 prohibition on trawl and seine nets that was later revised (FAO 2017; ICSF 2021). In addition, Lestari et al (2024) report governance failures, including weak enforcement, reported bribery, and ongoing conflict between trawl and traditional fishers, reinforcing that bottom trawling affects food security and livelihoods across.

Key context

- Sumatra small-scale fishers rely on nearshore species like anchovy, mackerel, pomfret and crabs.
- Interviews and reports describe trawlers operating inside inshore zones and reducing SSF catches.
- Households report lower fish intake, higher costs, and stress on livelihoods and family wellbeing.
- Enforcement gaps and shifting trawl rules fuel conflict and erode trust in governance.

Key Informant Interviews

To deepen the understanding of these impacts, two interviews were conducted with key stakeholders:

- Interview 1: Local artisanal fisher from the Bengkulu area in Sumatra
- Interview 2: Representative from the Indonesian Traditional Fishers Union (KNTI)

In addition, we used information from two documentaries about the current situation of bottom trawling in Sumatra, which included interviews with small-scale fishers, fishers participating in bottom trawling and people in local fish markets.

The interviews focused on research questions regarding (1) negative competition; (2) participation in trawling; (3) nutritional impacts; and (4) prevailing narratives.

Results Based on Interviews

1. Negative competition and impact on small-scale fisheries

Competition and spatial conflict are the dominant themes. North Sumatra reports describe trawlers operating within restricted nearshore zones, including both the traditional 3-mile area as well as the current 12-nautical-mile exclusion zone, with weak enforcement and frequent encroachment (JALA and EJJ, undated; Simangunsong 2025). Interviewees report that these intrusions reduce small-scale catches, require fishers to travel farther and spend more days at sea, and contribute to empty nets and reduced incomes.

Ecological impacts are also cited. The JALA and EJJ briefing describes trawl gear as non-selective and notes severe bycatch and discarding in North Sumatra, reporting estimates that bycatch-to-shrimp ratios can be extremely high and that a large share of the catch is discarded (JALA and EJJ, undated). The Bengkulu interview similarly reports that trawlers use small mesh sizes that capture juveniles and bycatch, discarding what is not economically valuable (high-grading), which is perceived to undermine local stocks and fishing seasons. These accounts link bottom trawling to local stock depletion, habitat damage, and reduced access to nearshore species that support household diets.

Social conflict and insecurity are also part of the food-security impact. The North Sumatra briefing documents long-standing clashes between trawlers and traditional fishers, while the Mongabay report describes incidents of fishers burning trawlers after repeated incursions and a lack of response to complaints (JALA and EJJ, undated; Simangunsong 2025). In Bengkulu, the interviewee noted that declining catches contribute to household conflict and educational disruptions for children.

2. Participating in trawling and food security

Across interviews, local food-security benefits from trawling are described as limited or indirect. The Bengkulu interviewee reported no local participation in trawling from their village, emphasizing community norms that discourage involvement in trawl operations and noting that trawler crews are often recruited from other islands. In addition, even where local participation in bottom trawling is more prevalent, such as in West Sumatra, small-scale fishers see little nutritional benefit from bottom trawling.

Evidence based on our interview from North Sumatra suggests that trawl catches are primarily routed through traders and export channels rather than local provisioning. A trawler deckhand interviewed by Mongabay noted that catches are sold to port traders who then supply exporters in Tanjung Balai, while small-scale fishers are left with shrinking nearshore catches (Simangunsong 2025). Taken together, the evidence suggests that trawling does not reliably deliver local nutrition benefits and can instead redirect food fish into commercial chains.

3. Nutritional impacts and consumers

Interview sources identify small pelagics and nearshore species as central to local diets. In North Sumatra, key food species cited include anchovies, mackerel, sole and crabs, while the KNTI interview highlights the importance of *teri* (anchovy) and mackerel. The KNTI interviewee reports that families who once ate fish daily now find it unaffordable. In Bengkulu, the interviewee described consumption of lower-value fish while higher-value species are sold, reflecting a trade-off between income and direct food access. Market structure also shapes food access. The Bengkulu interviewee reported dependence on middlemen due to limited cooling capacity and distance to urban markets, which affects how much fish remains for local consumption. North Sumatra accounts link trawling to reduced availability and higher prices, with households reporting diet changes and reduced fish intake, consistent with national research showing that access and income mediate food security in Indonesian fishing communities (e.g., Roberts et al. 2022).

4. Narratives and policy framing

Interviewees emphasize a gap between national policy narratives and local food-security realities. Both the KNTI interview and documentary notes state that fishers' rights are not adequately protected and that government narratives do not recognize small-scale fishers as a food-supply foundation. Policy shifts have repeatedly reshaped expectations: national trawl bans were introduced in the early 1980s, later adjusted through authorized zones, and a 2015 ban on trawl and seine nets was later revised (FAO 2017; ICSF 2021). The Mongabay report indicates that current regulations only allow trawlers to operate beyond 12 nautical miles, yet enforcement capacity is limited or based on documentary and interviews non-existent (Simangunsong 2025).

Counter-narratives and resistance are visible in Sumatra. JALA and EJF document long-term organizing by fisherfolk networks in North Sumatra, while Mongabay reports describe community actions and calls for stronger enforcement against illegal trawling (JALA and EJF, undated; Simangunsong 2025). In Bengkulu, the interviewee reported strong community norms against participating in trawl operations, suggesting that local social sanctions serve as an informal form of resistance.

Conclusion

In Sumatra, bottom trawling undermines local food security through three main pathways: nearshore encroachment, non-selective harvest, and shifting market access. These processes reduce both the availability and affordability of local fish for small-scale households. Interview evidence from North Sumatra and Bengkulu indicates reduced catches and household stress, with high-value species moving into export channels while local diets rely on lower-value fish. In addition, the cultural and traditional significance of fish is also being eroded by reduced fish availability, compounding the social impacts. Sources show that these impacts occur within a policy landscape marked by inconsistency, with repeated trawl bans and exemptions and persistent enforcement gaps (JALA and EJF, undated; FAO 2017; ICSF 2021; Simangunsong 2025).

Priority actions emerging from the evidence include:

1. Stricter enforcement of inshore exclusion zones,
2. Transparent monitoring of bycatch and discards,
3. Recognition of small-scale fisheries as a core food-security sector, and
4. Targeted support for household resilience including women-led livelihood strategies and market access improvements that reduce reliance on middlemen (Zamzami et al. 2023).

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