

to the marine ecosystem and food security. Fishing communities in India predict that unsustainable fishing driven by the FMFO industry will cause an end to fisheries soon<sup>2</sup>. There is an urgent need to relieve the growing pressure on industrial feed fisheries in India for long-term socioeconomic and ecosystem stability.



"If we are grinding up fish that people could be eating, to sell as feed for fish to wealthier people, that will never be sustainable"

-Dr. Daniel Pauly

# Feasible Solutions Exist

## Aquafeed Industry



- Shift fishing effort from the FMFO fishing to sustainable and selectively-fished stocks
- Provide employment through the production of fishmeal alternatives

## **FMFO Policy**

- Implement stricter regulations on fish size to prevent juvenile and non-selective catch
- Phase-out FMFO fishing
- Develop guidelines for sustainable feed ingredients



### Aquaculture Industry



- Prioritize cultivating species that do not require fish feed
- Invest in researchers and companies for fishmeal alternatives like food waste or insects

### **Certification Schemes**

 Remove MSC, ASC, and IFFO certification of reduction fisheries, fish that is not used for direct human consumption, and farmed fish reliant on FMFO feed



## Success with Aquafeed Alternatives

Enterra, a Vancouver based insect-protein company, has successfully reared Arctic Char with flies<sup>3</sup>. The Food and Agriculture Organization of the United Nations estimates that insects could replace anywhere from 25-100% of the remaining fish meal in the diets of farmed fish with no adverse effects. Promising research also suggests that turning discarded food into fishmeal could create jobs for fishing communities, eliminate food waste, and reduce pressure on the aquafeed industry<sup>4</sup>.

## It is **your** responsibility to act.

Urgent action with concrete measures **must** be taken to reduce the intensity of FMFO fishing in India to environmentally sustainable levels and ensure that it meets the food security and livelihood needs of local populations and fishing communities.

#### References

- 1. Tacon, A. G., & Metian, M. (2009). Fishing for Aquaculture: Non-Food Use of Small Pelagic Forage Fish—A Global Perspective. Reviews in Fisheries Science, 17(3), 305–317. https://doi.org/10.1080/10641260802677074
- 2. John, H. (2020, January 9). Fish meal and fish oil industries pose threat to the fishing sector in India. Mongabay. https://india.mongabay.com/2020/01/fish-meal-and-fish-oil-industries-pose-threat-to-the-fishing-sector-in-india/#:~:text=Tonnes%20of%20fish%2C%20including%20juvenile,security%20and%20severe%20environmental%20issues.
- 3. Payton, B. (2020, August 28). Taking the Fish Out of Fish Feed. The Tyee. https://thetyee.ca/Solutions/2020/08/28/Taking-Fish-Out-Fish-Feed/.
- 4. Rueter, A., & Beardmore-Gray, O. (n.d.). Alternatives: the fish you don't know you eat.
- https://globalreportingprogram.org/fishmeal/alternatives#:~:text=Extracted%20directly%20from%20algae%2C%20algal,to%20keep%20farmed%20fish%20healthy.

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