Fish Food

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Some troubling news has hit the headlines. While we talk about the global crisis across many fisheries, with fish populations plummeting, surprising things are happening to fish catches. In fact, fully one-third of marine fish catches are being used as animal feed. At the same time, human consumers are turning to historically lower quality species for our own cuisine.

As the saying goes, this is a fine kettle of fish! What exactly is going on? A study in the **Annual Review of Environment and Resources** has examined marine fisheries. About 30% of marine species caught are "forage fish", amounting to 31.5 million tonnes each year. These include small to medium pelagic fishes such as anchovies, sardines, and pilchards. Traditionally, these species have not been considered fit for humans to eat. As a result, they have been poorly studied, and the impact on the marine ecosystem has not been described - until now.

Most of these forage fish, about 90%, are ground up and used as animal **feed** for pigs, poultry, and farmed fish. The study points out the dramatic oversight in the growth of these fisheries. By removing the small species in such large quantities, the marine food web is impacted. Larger fishes, marine mammals, and seabirds all rely on these fish resources.

In addition, with the decline of larger food fishes like cod, halibut, and swordfish, smaller forage fish might be a viable option for meeting human nutritional needs. After all, pigs and poultry are not natural piscivores, yet globally they consume vastly more seafood than whole nations like Japan or the US. At the same time, forage fish tend to be tasty and highly nutritious. Using this potential food source to feed other food species is incredibly inefficient and wasteful - adding an unnecessary intermediate step. Over recent years, anchovies, sardines, and similar species have become more popular for human recipes.

There are other options for livestock and aquaculture. Many agricultural crops can be used as a protein source. In fact, the UN's Food and Agriculture Organization (FAO) has an extensive list of various items that can serve as **feed**. But **fishmeal** and fish oil have become the cheaper alternatives for protein, due to to large-scale and efficient fishing techniques. Add in the ever-growing market for fish oil nutritional supplements. However, modern fishing methods are literally stripping every fish out of the ocean.

Recognizing the problem is half the battle. The next step is understanding the role of forage fish species in the ecosystem, and the effects of fishing. Only then can realistic and sustainable management plans be put into place. Several large research consortia are focused on a better understanding of marine fisheries. The **Sea Around Us Project**, the Lensfest Forage Fish Task Force, and the **Institute for Ocean Conservation Science** are all engaged in global studies in this area.