

OCEAN SCIENCE IN ACTION

9.3 HOW STABLE ARE THE PILLARS OF FOOD SECURITY? PILLAR ONE: FOOD AVAILABILITY

VIDEO DURATION– 05:43

This lecture will look at the first dimension of food security, **Food Availability**.

Food Availability is **defined as the physical existence of food**. This pillar of food security is important to analyse both on a national and household level, to fully understand the impact the availability of fish has on different scales.

When we discuss the national level in economics we are referring to the country in a “zoomed out” picture, looking at the country’s economy and overall population.

When we discuss the household level, we are “zooming in” to analyse a stereotypical household unit as a representation of what happens on a smaller scale.

The most important question to address here is how big is the small pelagic stock size and at what level can it be fished sustainably. And here we hit the first problem. Not much is known about the small pelagic stock of Tanzania. The key statistical information such as catch and effort is not very reliable due to the challenges of the data collection. Acoustical surveys which can provide stock estimates are rare and don’t provide us with the complete picture, which makes understanding and managing under-researched species difficult.

However, small pelagics play an important role in the availability of domestic marine food in Tanzania, as the small pelagic fish catch accounts for over twenty percent of total fish catch in Zanzibar, and over a third of the total marine artisanal fisheries catch in mainland Tanzania. On average, Tanzanians rely on fish for 23.4% of their total animal protein intake.

Once the small pelagics are caught, what happens next?

Fish trade has become an important source of income for fishers. For example, artisanal fishers on the island of Pemba estimate that small pelagics account for 34% of their commercially important stock. This means that selling small pelagics in domestic markets helps sustain livelihoods in coastal communities.

At the national level, food availability is a combination of domestic food production, commercial food imports and exports, food aid and domestic food stocks.

When there is sufficient food availability the dependence on food imports, or in drastic situations, food aid, is much lower. Contrastingly, in situations where food availability declines, food imports have helped stabilise fluctuations in domestic food supply and price volatility.

National food self-sufficiency is defined by the FAO as the extent to which a country can meet its food supply needs from domestic production. Trends in this are an important indicator of food security, as it illustrates whether a country is experiencing a food deficit or food surplus. The assumption is that if enough food is produced to meet local demand, a country is food secure and able to export the excess.

We will now look at the national fish food self-sufficiency, which will concentrate on Tanzania's fish imports and exports. How reliant is Tanzania on marine food imports? Let's take a closer look at their fish trade.

Using national data, this graph shows that Tanzania is a net seafood exporter with an extremely low amount of seafood imports compared the amount of seafood exported. Based on the adapted FAO definition, Tanzania is marine food secure at a national level.

Exporting fish generates income for the country. This method of measuring marine food security highlights the positive impact that fish trade can have on national wealth. This is what we discussed previously as indirect marine food security. It is, however, important to assess the household level of food security alongside national scale measurements. Although Tanzania will benefit economically from fish exports, this wealth will not necessarily reach the artisanal fishers participating in the local domestic market.

The national measurement of Tanzania's dependence on fish for protein is reported at 23.4%. This is measured as the percentage that fish accounts for, out of total animal protein intake. This is slightly above Africa's average of 20%, but is far below other nations like the Seychelles at 51.1%.

Of the active fisheries in Tanzania, 79% of them report that fishers consume a portion of their catch. This means that fisheries are providing fishers and their families with an important nutritious food supply.

At a smaller scale, artisanal fishers on the island of Mafia for example, consider small pelagics to account for a quarter of their subsistence stock. This means that small pelagics are not only commercially important but also play an important role in feeding fishers and their families.

Increasing fishing pressure with the increasing number of boats and fishers is another important factor impacting availability of the small pelagics.

Here is **Dr Narriman Jiddawi** to tell us more.

“Number of fishermen has gradually been increasing with time, now there are about 49,000 fisherfolk according to the census of 2016. The catch is increasing but the catch per unit effort is maybe not increasing because there are so many fishermen and many boats, around 8,000 fishing vessels. The catch is about 34,000 tonnes.”

In this lecture we have discussed the first pillar of food security – Food Availability. We have seen that, in Tanzania, there is an economic and nutritional dependence on fish both at a national and household level. In the next lecture we will look at the second pillar of food security, food access.