9.4 HOW STABLE ARE THE PILLARS OF FOOD SECURITY? PILLAR TWO: FOOD ACCESS

VIDEO DURATION– 07:34

This lecture will look at the second dimension of food security, **Food Access**. We will discuss what factors influence access to food, and why it is important to understand and characterise this pillar when we want to evaluate how food secure a nation or a community is.

Food Access is achieved when **all individuals and households have enough resources to obtain food in sufficient quantity, quality, and diversity for a nutritious diet.**

Access to food is determined by many factors such as income, purchasing power, quality of transport needed to reach food markets and costs involved in producing your own food such as growing fruit and vegetables.

In our case of local artisanal fishers, one of the most critical factors is access to boats and gear to be able to catch small fish. For the rest of the costal population, which might rely on the small pelagics, access to them depends on the accessibility of the local markets and affordability of this fish.

In summary, access to food depends on the financial ability to buy food or to produce it. It also depends on affordability. It has been projected that by 2050, millions of people in developing countries might not be able to afford fish, which is currently relied on as a major source of food and protein in the coastal population.

Before we discuss barriers limiting access to food for fishers or wider coastal communities, it is important to define subsistence fisheries as they are the most dependent on fish for direct food security.

Subsistence fisheries are local, non-commercial fisheries, with the purpose of catching fish to provide food to their families and community. Pure subsistence fishers do not participate in trading or selling of the fish they catch.

In Tanzania, fishers' access to small pelagics is determined by access to a boat and adequate fishing gear.

Dr Narriman Jiddawi:

> "The type of vessels used in small pelagic fishery are bigger vessels, like the Dhows and boats, and usually they use engines not sails because they have big gears like the purse net and surrounding seine nets, which are not easy to have in the small vessels. These vessels are however not affordable among the local community. So usually it is the middleman or trader who can afford to buy these types of vessels and gear. They give the gear to fisherman to use and then they divide what has been obtained or the income in three lots. One lot goes to the fishermen, (if they are 10 or 20 they divide among themselves), one lot to the middleman, one is used for repairs and vessel maintenance."

In a scenario where fish stocks are depleted, subsistence fishers in remote fishing communities that directly rely on fish as a source of protein, may not have adequate income or transport to access alternative food sources from domestic markets to replace protein in their diets.

How is access to food measured? We will first look at measurements on a national level.

Access to food on a national level is determined by the state of the economy. In theory, a stronger economy would allow for greater investment directly into the fishing industry, or indirectly into building roads and improving access to markets.

As we mentioned previously, access to food depends on income. On a national level, this is measured by assessing the Gross Domestic Product, or GDP. GDP measures economic growth in a country by assessing the increase in goods and services a country produces over time. Economic growth does not automatically ensure food security. However, it is considered to be a proxy for development and economic access to sources of food.

Here we see a graph of Tanzania's fluctuating GDP growth rate over the period of 1989 to 2016. This graph shows how Tanzania's economy experienced a drastic decline in growth between 1990 and 1992. Within that time, the percentage of the total population that were undernourished grew from 30% in 1990 to 40% in 1995. The economy has, however, recovered from the decline and reported a 6.87% growth rate in 2016, along with the percentage of undernourishment declining to 32% over that time period.

An example of measuring food access on a household level is the US Aid Household Food Insecurity Access Scale. This scale is based on a set of nine questions that have been used in several countries to distinguish food insecure from food secure households across different cultural contexts. An example of a question asked is: *In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed, because there was not enough food?*

What determines adequate access to small pelagics in coastal communities?

Availability of the fish in the sea, does not guarantee that an individual or a community can access it as a food source. Small pelagic catch requires adequate access to fishing gear such as purse seine nets and the small boats typically used in this fishery. In addition, access can be limited by the weather and the size of the boats. Small vessels are highly vulnerable to weather conditions and can only fish in the near shore waters. Even bigger vessels are limited to the quieter part of the monsoon cycle.

During the northeast monsoon, which is from October to March, access and catches are greater since the sea is relatively calm with weaker currents. During the southeast monsoon, catch is lower due to extremely strong currents, which makes it dangerous for fishers with small boats.

In Tanzania, extreme events known as marine heatwaves cause certain small pelagic fish species to move deeper and further out into the Pemba channel in search of cooler waters. The stock may remain the same, but such events change the behaviour of the fish, reducing their catchability. Fishers therefore have restricted access to the few species still available closer to shore.

Dr Narriman Jiddawi:

> "As you are aware now, the sea surface temperature is changing, and it is impacting the fish. According to the fishermen they say that before they could get the fish nearer but now, because of the increase in temperature, they have to go a little bit further where it is deeper and cooler. Most of the fishing vessels these fishermen are using are not seaworthy, so they only go to a specific distance where they know they are safe and sound. They do not go out to the very deep 200-meter depth, no – about 30 to 60-meter depth is the maximum they go."

In this lecture we have discussed the second pillar of food security – Food Access. We can now see the importance of both availability of and adequate access to fish in Tanzania.

In the next lecture we will look at the final pillars of food security, Food Utilisation and Stability.