

PENANG SANGAM HIGH SCHOOL

HOME ECONOMICS

YEAR 13 (week 10)

Strand	FOOD AND NUTRITION
Sub strand	FOOD SUPPLY
Content learning outcome	<ul style="list-style-type: none">• Study and discuss ways to overcome the effects of climate change on national and household food supply.

FOOD SUPPLY (ENSURING AVAILABILITY OF FOOD)

- Food security is the state of having reliable access to a sufficient quantity of affordable, nutritious food.
- Pacific Islanders traditionally have achieved food security, through gardening, fishing, hunting, and selling products or labour for cash, but the local food production has slowly started being replaced with urbanization and cheaper, poor quality food imports.
- Climate change will increase threats to food security, through its impacts on food production, health, infrastructure, the ability of countries to import food, and the ability of households to purchase food.
- Commercial agriculture, fisheries and tourism are also likely to be badly affected.

• Household food security is when we deal with this issue at family level, focusing on the individual members.

• For the Republic of the Fiji Islands to make food security a reality, its people must first fulfill the following conditions:

1. Have adequate food supplies (either domestically grown or imported).
2. Have available food supplies.
3. Have stability of food supply.
4. Have access to food at the household level, especially those households with low incomes.

• Strengthening subsistence farming for domestic consumption is still the most important tool in attaining food security.

A. CLIMATE CHANGE ADAPTATIONS

Effects of Natural Disasters on Food and Water Sources

- Future greenhouse gas emissions increasing the air temperature.
- Rainfall events becoming more intense and less frequent, with implications for flooding and drought.
- Increasing sea levels
- The possibility of cyclones might become stronger, last longer, have higher wind speeds and unleash more rainfall causing widespread crop damage.

Impacts of natural calamities on food security

- Three broad categories of natural calamities affect the agricultural sector include:

1. physical natural disasters
2. biological disasters
3. environmental disasters.

1. Physical Natural Disasters

A. Cyclones

- The amount of the damage caused to crops and vegetation together with damage to foreshores and coral reefs depends on the storm intensity and increased with wind speed.
- The low atmospheric pressure can cause the sea to rise, causing the engulfment of low-lying areas and foreshore damage.
- Traditional cropping patterns that mitigated [action of reducing] the adverse impacts of cyclones are not as strong as they were.
- Deforestation- the degree of protection is not as it was as in the past.
- Traditional food preservation has all but disappeared as a strategy for disaster mitigation.

B. River flooding

- is a common disaster on the larger islands of Fiji.

C. Landslides

- It is associated with river flooding land which can have serious impacts on food crops, with associated siltation and debris having a much wider impact on the agricultural sector.

2. Biological Disasters

- The introduction of a pest or disease can cause a far greater long-term disaster than a cyclone or a volcanic eruption.
- There can also be an inter-relationship between physical and biological disasters. A cyclone can seriously disrupt delicate ecological balances and lead to a rapid proliferation of a pest or disease.

3. Environmental Disasters

- These can be externally induced, such as a rise in sea level, or internally induced, such as uncontrolled burning, deforestation, unsustainable cropping patterns and the attack of animals.
- This can also harm the environment due to human activity.
- There is also uncontrolled burning which is causing soil erosion, destroying the vegetable cover, exposing the soil to strong winds, a hot sun, and pelting rains.

Three broad categories of food producers are found in Fiji.

1. Subsistence producers (Farmers) – They may earn income from other sources but they do not normally sell their

produce. They can be urban wage earners and those living in remote islands who cultivate perishable crops, such as cassava and dalo (taro), which are quick to deteriorate after harvesting.

2. Semi-subsistence, or Semi-commercial Farmers – They grow food for themselves and for commercial sale as their source of cash income.

3. Commercial Farmers – They generally produce on a large scale and make food production a business. They include commercial poultry, commercial fishing, cattle ranching, extensive dalo cultivation, sugarcane cultivation, coconut plantations and aquatic farming.

- Most villages practice subsistence farming with common crops being dalo, cassava, sweet potato, breadfruit and bananas for home consumption.
- The biggest challenge will be in the country's ability to sustain domestic food production levels in line with the local demands and meet the marketing potential as one moves from subsistence to commercial farming.
- The fresh produce markets are satisfying most of the needs of consumers. Yet there is concern that major foods of high nutritional value in the market places (e.g. dalo) are losing ground to imported foods (e.g. rice).
- Possible explanations are the high prices of fresh produce compared to the prices of imported foods.
- as the consumers' income increases, the demand for better choice and quality of food increases

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- Farmers are more driven to supply the domestic market but food production remains a major problem.
- Supplies are inadequate, prices are high and production is irregular and seasonal.

Effects of Climate Change on Agriculture

- Prices of locally produced crops are higher compared to imported goods such as rice and flour.
- Many urban populations in the Pacific are now very much dependent on cheap foreign imports for their daily consumption.
- The majority of rural people still lives and depends on subsistence food production and fisheries, and production is heavily dependent on the seasonal rainfall. In the long run normal rainfall may be affected which can affect agriculture.
- Other effects are loss of soil fertility and erosion, increasing coastal inundation, salinization and erosion as a consequence of sea level rise and human activities may contaminate and reduce the size of productive agricultural lands thereby, threaten food security at the household and local levels.
- Storm and cyclone damage to equipment for processing and storing food, and to roads, rail and vehicles, can upset the effective supply of food, and goods to markets, and thus threaten the livelihoods of rural growers.

Effects of Climate Change on Fisheries.

- The decrease in fish abundance may be caused by degraded reefs, mangroves and the turbidity, salinity and temperature of water.
- There will also be an increase in incidences of fish poisoning. Sea level rising and sea surface temperature changes will affect the production of plankton which will result in the decline of fisheries productivity and food security.

Effect of Climate Change on Drinking Water

- In Fiji our atolls (e.g.Lau group) face this problem on a daily basis.
- The five main drinking water sources are; (1) rain water, (2) ground water, (3) surface water, (4) desalinated water, and (5) imported drinking water.
- Not all these sources are accessible and available readily to islanders, making them vulnerable to natural variability in precipitation patterns or changes in storm tracks.
- Tropical cyclones threaten drinking water supplies.
- Storm surges have contaminated freshwater lenses with saltwater for months and damaging rainfall collection systems.

Activity questions

1. Define food security.
2. Discuss the effects of climate change on our food sources.
3. Discuss how families can overcome food shortage?
4. Explain the use of compost on food security.