**YEAR 12 HOME ECONOMICS - WORKSHEETS WEEK 2**

**STRAND: HEC 12.1 SUB STRAND: HEC 12.1.3 HOUSING**

**CLO: HEC 12.1.3.1** Explore the climate change concepts, its effect on the environment and analyze housing vulnerability to changing climate conditions in Fiji.

**LESSON 61**

**HOUSING**

**Climate change** is a change in climate pattern due to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels. It has contributed to an increase of greenhouse gases in the atmosphere which in turn contributes to the boost in temperatures over most land surfaces.

**Effects of Climate Change**

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**Coastal erosion** Accelerated coastal erosion, saline intrusion into freshwater sources and increased flooding from the sea may cause large effects on human settlements.

**Droughts** Changing rainfall patterns will lead to water shortages.

These deep, persisting droughts will become more prevalent. Weather patterns that people were used to for hundreds and thousands of years are changing imperfectly – and they will not return to normal.

**Floods** Major floods that used to happen only once in 100 years now take place every 10 or 20 years. Flooding can be disastrous.

**Fire** Fire was once a healthy, natural part of our ecosystem; however climate change and other pressures are causing more intensified firestorms, sparking more damage and putting wildlife more at risk.

**Rising in temperature** Greenhouse gases are trapping more heat in the Earth's atmosphere, which is causing average temperatures to rise all over the world.

**Change in Landscapes** Hot, dry forests, rising sea levels— environmental changes brought on by global warming take a heavy toll on wildlife and human communities that rely on any given landscape for food, water, shelter, and income. As climate change alters ecosystems, feeding grounds may become barren and summer grounds inhospitable.

**Storms** As temperatures continue to rise, more and more water vapor could evaporate into the atmosphere, and water vapor is the fuel for storms. A warmer, wetter atmosphere could also affect tropical storms (hurricanes). Warmer temperatures may also heat ocean waters farther from the Equator, expanding the reach of large tropical storms.

**Illnesses**

Changes in climate affect the average weather conditions that we are accustomed to. Warmer average temperatures will likely lead to hotter days and more frequent and longer heat wavesImpacts from Heat waves can lead to heat stroke and dehydration, and are the most common cause of weather-related deaths. Young children, older adults, people with medical conditions, and the poor are more vulnerable than others to heat-related illness.

**Climate-Sensitive Diseases**

**Food-borne Diseases** Higher air temperatures can increase cases of salmonella and other bacteria-related food poisoning because bacteria grow more rapidly in warm environments. These diseases can cause gastrointestinal distress and, in severe cases, death.

**Water-borne Diseases** Heavy rainfall or flooding can increase water-borne parasites such as *Cryptosporidium* and *Giardia* that are sometimes found in drinking water. These parasites can cause gastrointestinal distress and in severe cases, death.

**Animal-borne Diseases** Mosquitoes favor warm, wet climates and can spread diseases such as dengue fever and malaria.

**Economics Loss** More intense hurricanes and downpours could cause billions of dollars in damage to property and infrastructure. High sea temperatures also threaten the survival of coral reefs, which generate income for Fiji in the food market as well as in the tourism industry. Sea-level rise, floods, droughts, wildfires, and extreme storms require extensive repair of essential infrastructure such as homes, roads, bridges, railroad tracks, airport runways, power lines, dams, levees, and seawalls.

**Mass migration and security threats.** Global warming is likely to increase the number of "climate refugees"—people who are forced to leave their homes because of drought, flooding, or other climate-related disasters.

**Lost productivity**. Disruptions in daily life related to climate change can mean lost work and school days and harm trade, transportation, agriculture, fisheries, energy production, and tourism.

**LESSON 62**

**FACTORS TO CONSIDER WHEN BUILDING A HOUSE DURING THE CLIMATE CHANGE**

**1. Plan and Structure** A house plan is a set of construction or working drawings , which is also called blueprints , that defines all the construction specifications of a residential house such as dimensions, materials, layouts, installation methods and techniques.

**2. CHOICE OF HOUSING MATERIAL**

TIMBER

* Using wood products reduces the need to burn fossil fuels for concrete and steel products, which reduces the amount of carbon released into the atmosphere which is the fourth positive impact.
* Plant based materials can be used to make high performing building structures, protecting against external weather and making a building more comfortable, healthy and energy efficient to live in.

**3. ACCESSORIES FOR COMFORT AND ESTEEM**

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| Ventilation is the intentional movement of air from outside a building to the inside  -Ceiling fans and table/floor fans circulate air within a room for the purpose of reducing the temperature.  - Natural ventilation is the ventilation of a building with outside air without the use of a fan or other mechanical system. | Furniture   * Wood can be the right choice because it gives natural effect to the Kitchen. * Besides the light weight, it also has good resistance to moisture and insects. * It also has very good resistance to water . | Built-ins   * Built- ins are as a non-detachable part of a larger structure. * The main characteristic of built-in furniture is that is allows one to create that smooth transition between spaces and that coherent décor that makes one’s home feel airy. | Plumbing   * Plumbing is the system of pipes, drains, fittings, valves, and fixtures installed for the distribution of water for drinking, heating and washing, and waterborne waste removal. * also refers to the skilled trade which installs and maintains it. |

**4. Safety**

* Pest control refers to the regulation or management of a species defined as a pest, usually because it is known to affect a person's health and the economy.
* A practitioner of pest control is called an exterminator.

Termite

How to prevent termites from infesting your home:

1. Eliminating their water source removes one of the three requirements for survival.

2. Remove any brush or heavy growth from around your home.

3. Use treated timber for any wooden structures that will have direct contact with the ground. As decay items, they attract termites to the area by providing a food source.

5. Make sure your home is properly ventilated. Adequate airflow prevents the buildup of moisture needed by termite colonies.

**LESSON 63**

**Insect Control**

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| Ants  1. keep counters free of crumbs and sticky spots.  2. Keep a small spray bottle handy, and spray the ants with a bit of soapy water.  3. Set out cucumber peels or slices in the kitchen or at the ants' point of entry.  4. Leave a few tea bags of mint tea near areas where the ants seem most active.  5. Set any of the items at the entry area in a small line, which ants will not cross eg: lemon juice, cinnamon or coffee grounds. | Cockroaches  1. The best defense is a clean kitchen and bathroom.  2. vacuum well and wash the area with a strong soap. Dispose of the vacuum cleaner bag in a sealed container.  Other remedies  - Spraying directly with soapy water will kill them.  - In an empty one pound coffee can, place 1 or 2 pieces of bread which have been soaked thoroughly with beer. Place in areas known to have roach infestations.  - Leave cucumber slices or garlic in the affected area as deterrents. | Mosquitos  1. The first line of defense is to seal their point of entry such as destroying their places.  2. An effective natural bug repellent is to mix one part garlic juice with water in a small spray bottle.  3. The leaves, seeds and seed oil of the Neem tree contain sallanin, a compound which has effective mosquito repelling properties.  4. Planting marigolds around your yard works as a natural bug repellent because the flowers give off a fragrance bugs and flying insects do not like. | Flies  1. Use mint as a fly repellent.  2. Place a small, open container of sweet basil and clove near pet food or any open food in the house.  3. A few drops of eucalyptus oil on a scrap of absorbent cloth will deter flies. Leave in areas where flies are a problem. | Bed bugs  1.A thorough cleaning and vacuuming is required, followed by preventive measures such as wash all bedding in hot water (120 degrees Fahrenheit or hotter). This will kill any bedbugs in the bedding  2. Non-toxic bed bug spray can be applied which kills bed bugs and their eggs on contact. It also acts to prevent bed bug activity for up to two weeks. This spray can be applied to mattresses, furniture, luggage and clothing. |

**DISASTER PREPAREDNESS**

* A natural disaster is caused by the forces of nature such as a hurricane, tornado, or earthquake.

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| 1. Before the cyclone   1. Prepare an emergency kit.  2. Check that the walls, roof and leaves of your homes are secure  3. Preferably fit shutters, or at least metal screen  4. A portable battery radio, torch and spare batteries  5. Keep emergency phone numbers on display  6. Pack an evacuation kit of warm clothes, essential medication etc. to be taken. | 1. When the cyclone strikes   1. Stay inside and shelter .  2. If driving, stop-but well away from the sea and clear of trees.  3. Disconnect all electrical appliances.  4. Beware the calm `eye’. If the wind drops, don’t assume the cyclone is over.  5. Strong table or bench or hold onto a solid fixture. | 1. After the cyclone   1. Don’t go outside until officially advised it is safe  2. Heed all warnings and don’t go anywhere  3. Beware of damaged power lines.  4. If evacuate, don’t return until advised.  5. Listen to local radio for official warnings & advice  6. Check for gas leaks. Don’t use electricity |

**LESSON 64**

**DISASTER PREPAREDNESS**

**Earthquake**

1. Preparation for an earthquake:

1. Become aware of fire evacuation and earthquake safety plan.

2. pick a safe place in your room, home, school etc., could be under furniture.

3. practice “drop, cover and hold on” in each safe place. keep a flash light in case the earthquake strikes during the night.

B. If you are inside when the shaking starts:

1. Drop, cover and hold on. Move as little as possible.

2. stay away from windows to avoid being injured by shattered glass.

3. stay indoors until the shaking stops and you are sure it is safe to exit.

4. Be aware that fire alarms and sprinkler systems frequently go off in buildings during an earthquake, even if there is no fire.

**C.** If you are outside when the shaking starts:

1. find a clear spot (away from buildings, power lines etc.)

2. if you are in a vehicle, pull over to a clear location. Avoid bridges.

3. If a power line falls on your vehicle, do not get out, wait for assistance.

4. If you are in a mountainous area or near unstable slopes or cliffs, be alert of falling rocks and other debris.

D. What to Do After an Earthquake:

1. After an earthquake, the disaster may continue. Expect and prepare for potential aftershocks, landslides or even a tsunami.

2. Tsunamis are often generated by earthquakes. Each time you feel an aftershock, drop, cover and hold on.

**LESSON 65**

**REVISION QUESTIONS**

1. Define Climate Change.

2. Fiji is prone to natural disasters like cyclones and earth quakes. Explain one way you can help your family prepare for:

a. Cyclones b. Earthquakes

3. Discuss the factors to consider when building a house in a flood prone area.

4. State three ways in which you can prevent termites from infesting your home.

5. Explain the point to consider when choosing **furniture** as a choice of housing material

for a new home.

6. Cockroaches can be a nuisance in many homes if not treated properly. Discuss **how** cockroaches can be treated in the home.

7. State **one** caution that needs to be taken:

i) When you are inside a building and the earth starts to shake.

ii) When you are outside a building and the earth starts to shake.

iii) What to do after an earthquake.

iv) When the cyclone starts.

8. Explain the principle behind the choice of the following housing materials:

i) Timber ii) Furniture

iii) Built-ins iv) Ventilation

9. Identify **three** passive designs feature that can be included in houses to ensure that the

occupants remain thermally comfortable**.**