

FOODPRINT MELBOURNE

INQUIRY 5

What impact will changes in climate have on Melbourne's food supply?

WORKSHEET 7

Is Melbourne's food supply at risk with changes in climate?

PAGE 1 of 2

INTRODUCTION

As Melbourne's population grows, greenhouse gas (GHG) emissions resulting from food production will rise. An increase in the amount of land required to produce food, land degradation, and an increase in the number of livestock required to meet Melbourne's meat needs will contribute to this rise.

Climate change will have a significant impact on agriculture in Australia through decreasing rainfall, rising temperatures and increasing frequency of extreme weather events. This is likely to impact southern Australia, including Victoria.

ACTIVITIES

Use data sheet 7 to complete the following activities.

- Using figure 1:
 - List the food types that provide greater than 20% of the GHG emissions
 - Can you suggest why these food types provide the highest levels of GHG emissions?
- Figure 2 compares GHG emissions from feeding Melbourne in 2015 with the predicted emissions to feed a population of 7 million in 2050.
 - By what proportion has the level of GHG emissions increased?
 - GHG emissions for some food types have increased more than others. List these food types.
 - Suggest how Melbournians could change their dietary habits to reduce GHG emissions.
- Form a small group to act as a think tank. Look at the impacts on food supply as a result of climate change outlined in figure 3. Consider how a resilient food supply could be maintained if these changes occurred. Share your views with the class during a discussion.
- Droughts and floods – the two extremes – are likely to be more frequent and more severe in future. Figure 4 shows the impact of these events recently in Australia.
 - Outline how drought changes the economic situation of a country and how it might impact the food supply of a family.
 - Global and interstate trading is important in times of disasters. How does this contribute to the resilience of a food system?
 - The Brisbane floods had an impact on many parts of the food supply chain. Outline how too much rain affected the supply of food.
 - However, the people of Brisbane did not go hungry. Explain how this was avoided.
- Cyclones in northern Australia can have an impact on Melbourne's food supply. Read about the impact of Cyclone Debbie in March 2017 at <http://www.abc.net.au/news/2017-03-31/queensland-farmers-and-crops-hit-hard-by-cyclone-debbie/8405422>
 - In what ways would a cyclone cause damage to a farm?
 - Describe how the impact on the farm's ability to produce food may be felt for a long period of time.
 - How does a cyclone in Australia's north-east have an impact on the food supply across Australia?

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EXTENSION ACTIVITIES

1. In October 2016 vegetable farmers in South Australia experienced devastating floods. Read this article and watch the footage before making a summary of the event and its consequences for Adelaide's food supply.

<http://www.abc.net.au/news/rural/2016-10-03/south-australia-floods-farmers-await-damage-bill/7897852>

<http://www.abc.net.au/news/2016-10-29/salad-bowl-floods/7980148>
(11.18 minutes)

2. Climate change is affecting food production across the world. The impacts of climate change on food production are likely to lead to rising food prices and higher levels of food insecurity and hunger. The world's poorest people will be most affected by rising food prices, and some regions of the world are likely to be more affected than others. Using the maps in figure 5:
 - a. Describe which regions of the world are most vulnerable to food insecurity now.
 - b. What changes have occurred in the worst case climate change scenario by 2050?
 - c. With the best case scenario, which regions have lower levels of food insecurity in 2050?