getconnected

World Vision

A Global Education resource from World Vision

Food Security
July 2015

SPECIAL

40 HOUR FAMINE
40 YEARS
THANKS TO YOU

EDITION

WINNER
getconnected
AGTA 2014 Awards

What is food security?

What are the causes of food insecurity?

What are global organisations doing to address food insecurity?

The 40th anniversary of the 40 Hour Famine

40 HOUR FAMINE 40 YEARS

THANKS TO YOU

The 40 Hour Famine is about making a difference for children around the world who are suffering from hunger. By giving up something that matters for 40 hours during the month of August, participants raise awareness of, and much-needed funds towards, global food insecurity. The 40 Hour Famine has been going strong since 1975. We're inviting you to celebrate our iconic 40th anniversary. That's 40 years of reducing malnutrition, improving people's access to food, improving income and food production for families and more!

In 2014 alone, over 250,000 participants raised $5.2 million to fund community development projects that contribute to sustainable food security.

Through increased access to immunisation and vitamin supplements, in addition to nutrition training for parents and caregivers, the health of children under five is improved. In extreme cases, lives are saved by these resources and programs.

But it's not just the children who benefit – through support groups for pregnant women, agricultural and business training, and empowering communities to teach each other about cooking and breastfeeding, communities enjoy reduced malnutrition as well as ongoing and improved access to food.

Participants in the 40 Hour Famine can be ADVOCATES – making a stand by telling others why they're participating, FUNDRAISERS – raising money for World Vision projects that change lives, or LEADERS – making it possible by leading and inspiring others.

World Vision

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Contents

About this resource

What is food insecurity?
What are the causes of food insecurity?
How does food insecurity impact children?
What are global organisations doing to address food insecurity?

This issue of **Get Connected** encourages you to explore these questions and do something constructive with what you learn.

For additional resources visit
worldvision.com.au/schoolresources

Your comments on this resource are welcome at
globaleducation@worldvision.com.au

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Front cover image: Bangladeshi children Nurjahan (left) and Toffazal (right) showing off their father's garden.
Back cover image: Timor-Leste produced 105,000 tonnes of paddy rice annually between 2010 and 2014
Page 27 image: School vegetable patch. Photo: A&S Penrose

What is food security?

Food is a human right and is essential to live a safe and healthy life. In order for people to grow and develop, food must be **available**, food must be **affordable** and food must be **prepared safely**.

For most people in Australia and other high income countries, there is plenty of food in homes and on supermarket shelves. However, people living in poverty have limited access to food. Those who live in poverty may not have enough money to purchase sufficient food or have access to land on which to produce their own food.

In 2014, approximately 805 million people in the world did not have enough food to lead a healthy, active life. That's about one in nine people on Earth. The vast majority of these people live in developing countries. Poor nutrition is the underlying cause in nearly half (45%) of all deaths of children under five years old – 3.1 million children each year. While all people have a right to safe and nutritious food, this human right is denied to many. Like other important resources, food is not equally distributed across the world.

Tamin lives in Bangladesh where one in three children under five are underweight. In Australia, less than one in 100 children under five is underweight. Watch her story online on the Get Connected: Food security page.

In 2015, Sarah travelled with five other World Vision Youth Ambassadors to learn more about food security in Timor-Leste. Watch their story on the Get Connected: Food security page at **worldvision.com.au/schoolresources**

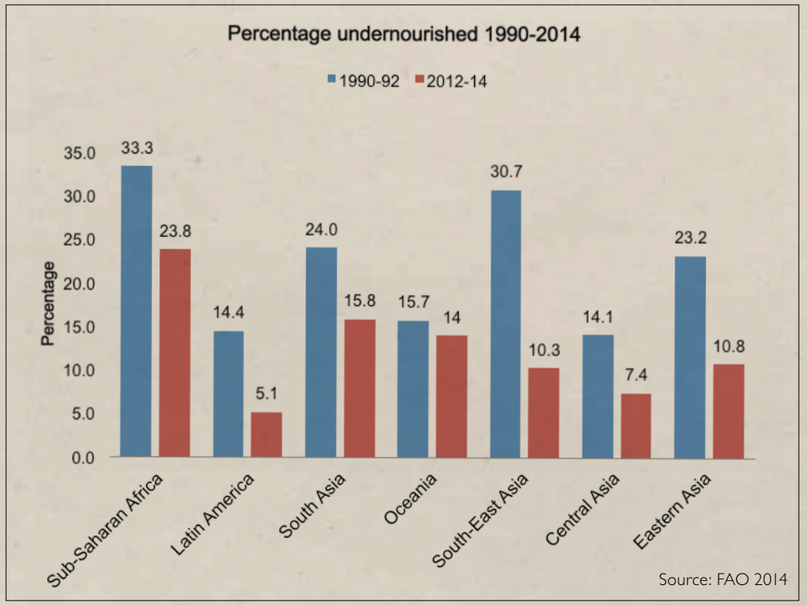
For you to do

1. Watch the video Food and the environment (3 min 27 sec) and make notes to summarise the information.
2. Watch the videos Tamin's Story (2 min 15 sec) and Youth Ambassador's in Timor-Leste (2 min 01 sec) with a partner. Discuss the purpose of each text and its use of language, voiceover, music and images to achieve that purpose. Evaluate the effectiveness of each text.
3. As a class, play the Global food inequality – simulation game.

All videos and the simulation game instructions are available on the Get Connected: Food security page at ***worldvision.com.au/schoolresources***

UNDERNOURISHED DOWN BY 209 MILLION

by Denise Ryan and Rod Yule



Source: FAO 2014

According to the Food and Agriculture Organization (FAO), the number of chronically undernourished people is down more than 200 million over the past 20 years. An estimated 805 million people were chronically undernourished in 2012-14. This is 209 million lower than in 1990-92.

However, as progress is being made, there continues to be great inequality. While increased grocery bills may mean Australians don't eat out as much, rises in the cost of food mean the world's poorest people don't get to eat at all, says the head of a leading international aid agency.

Australians spend 15 percent of their income on food, but households in developing countries often spend up to 75 percent of their income on food, World Vision Chief Executive Mr Costello says.

At a time when Australians are struggling with economic uncertainty at home, Tim Costello urges them to look beyond Australia and continue to address global food security and hunger. "For 40 years, young Australians have come together as global citizens in the 40 Hour Famine to improve food security around the world. This makes a difference!"

Launching the Zero Hunger Challenge, the UN Secretary-General Ban Ki-moon said, "We can't rest while so many people are hungry in the world while there's enough food for all. Somehow this food is not distributed equally or fairly. Some people are living in prosperity while marginalised people are hungry. We know this has to change."

Tim Costello:
World Vision Chief Executive.

Ban Ki-moon:
UN Secretary-General.

DID YOU KNOW?

The United Nations Declaration of Human Rights (Article 25, paragraph 1) states that "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food . . ."

For you to do

1. Where do you think a newspaper might place this story?
   (a) front page (b) sports page (c) international news (d) food section
2. Summarise this article in a 100-140 character tweet.

_____

_____

3. Create an alternative headline for this article.

_____

4. Name two sources quoted in this article, and explain why a newspaper would use them. Your explanation should include their reliability and possible biases.

_____

_____

_____

5. The article uses statistics to support the story. Use the article to complete the statistics below:

- Australians spend _____ of their income on food.
- There are _____ chronically undernourished people in the world.
- In developing countries, families spend up to _____ of their income on food.
- In the past decade, the number of chronically undernourished people in the world has been reduced by _____ .
- South-East Asia has reduced the percentage of chronically undernourished people from _____ in 1990-92 to _____ in 2012-14.

6. In pairs, brainstorm some reasons why the number of chronically undernourished people in the world has reduced in the past 20 years.
7. Identify one statement of fact and one statement of opinion in the article.

Food supply chain

The food we eat comes through a variety of steps and depends on many people, including farmers, farm workers, truck drivers, food handlers, bankers, shop assistants and agricultural suppliers.

The number of steps involved depends on the specific situation for each community and family. Home gardening and small farms can make the process much simpler and increase food security for families.

However, even a home garden may depend on other people to supply certain needs such as seeds, tools, fertiliser, and milling of grain. And all farms, large and small, are vulnerable to weather conditions and armed conflict.

For you to do

1. Choose a commonly eaten food, then create your own flow chart (with explanation text) to show the process of how that food comes from the land to your dining table.
2. Look at the food supply flow chart on the next page and list the problems that could arise at each step in the process and how these problems might be solved using the table below.
3. Use the food supply flow chart and rewrite as an information text using paragraphs.

Steps in the food supply process	What do people need to carry out these steps?	What are problems that might hinder these steps?	What are possible solutions to these problems?
Getting ready to grow the food			
Growing the food			
Moving the food from the field		*eg, war/conflict can damage roads and make travel dangerous*	
Processing, selling or storing the food			
Preparing and eating the food			

Food supply flow chart

Step 1. Getting ready to grow food
tools, soil, seeds, knowledge

Step 2. Growing the food
workers, climate, water

Step 3. Moving food from the field
roads, carts, truck, baskets

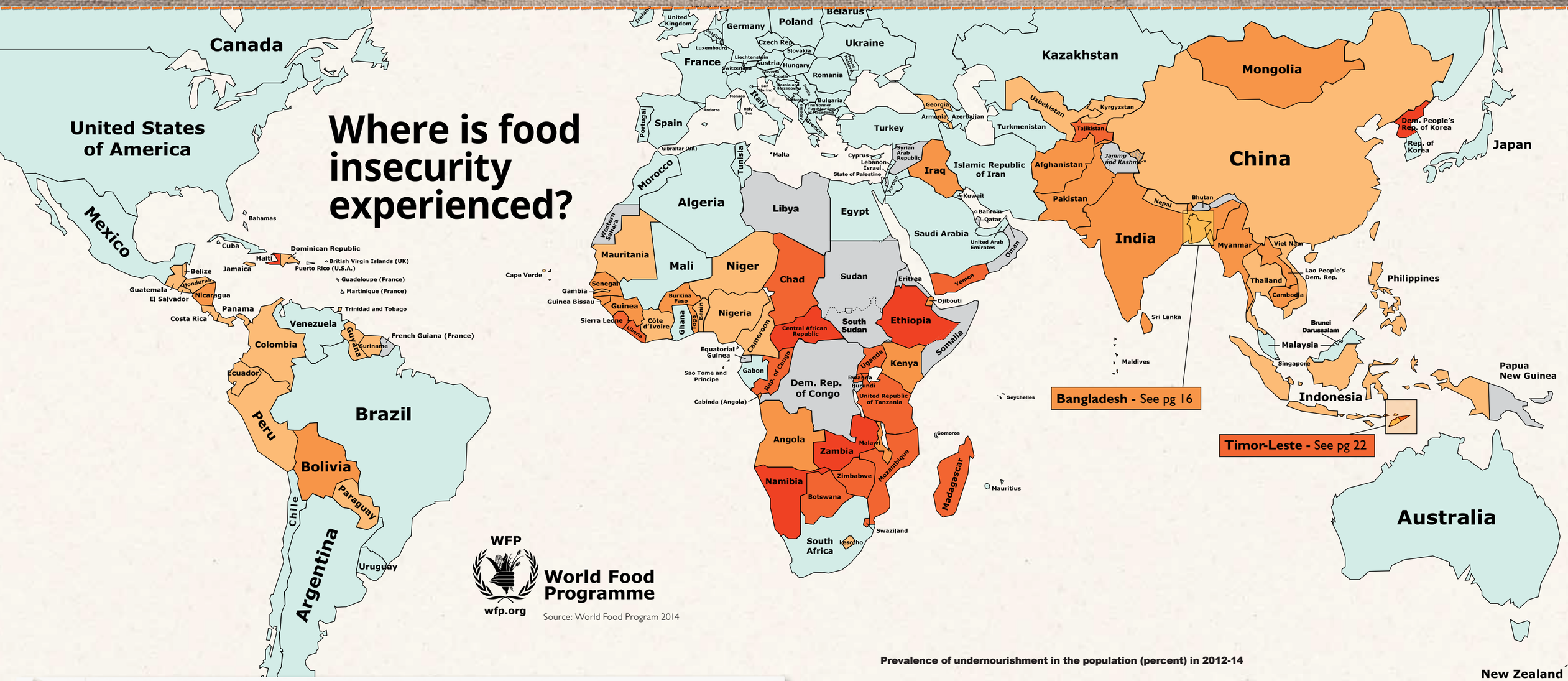
Step 4. Processing, selling or storing the food
marketplace, storage, jars, factories, shops

Step 5. Preparing and eating the food
cooking place, knowledge of nutrition and hygiene, cooking equipment, implements for serving and eating

DID YOU KNOW?

In countries affected by war, like Afghanistan and Syria, the food supply chain is often limited or broken. Farmers are forced to flee their villages and crops, so less food is produced. Fighting also limits access to food because transport becomes dangerous, roads are damaged and trucks may not be able to distribute food.

Where is food insecurity experienced?



Bangladesh - See pg 16

Timor-Leste - See pg 22

WFP World Food Programme wfp.org

Source: World Food Program 2014

Prevalence of undernourishment in the population (percent) in 2012-14

<5%	5-14.9%	15-24.9%	25-34.9%	35% and over	Missing or insufficient data
Very low	Moderately low	Moderately high	High	Very high	

For you to do

1. Find the following countries on the map above and identify their prevalence of undernourishment in the table below:

Australia Indonesia Ethiopia Timor-Leste India
North Korea Algeria Chad Bangladesh China

Very low <5%	Moderately low 5-14.9%	Moderately high 15-24.9%	High 25-34.9%	Very high >35%

2. Describe the spatial distribution of food security and undernourishment around the world.

3. Create five research questions from the data shown in the map.

4. Suggest reasons why undernourishment is used as a measure of food security. What are some other indicators or information that could be used to measure food security in a country?

What are the causes of food insecurity?

Food insecurity around the world has a variety of causes. In recent years, there has been an increased demand for and a reduced supply of food. Some of the main causes are:

CLIMATE CHANGE:
Global warming means that droughts are becoming more frequent, severe and widespread. This puts added stress on farmers to be able to grow enough food to survive. _____ in Australia and other grain growing countries cause a shortage of food to eat and increases the price of the food produced.

In 2014-2015, 230,000 people in Malawi were displaced by floods and more than 100 people lost their lives. The floods damaged crops, washed away livestock, and damaged infrastructure.

CONFLICT:
During times of armed conflict farmers may have to flee and so less food is produced. Crops and _____ can be destroyed in the conflict, and farmers can lose all of their equipment so it will take longer to begin farming again when they return home. In some areas, years after the conflict is over, farmers are still in danger from landmines left behind in the ground.

DECLINING AGRICULTURAL PRODUCTIVITY:
Over the past 20 years, world agriculture has become less productive. People are growing less food per hectare of land. This has been caused by the reduced supply of water for _____, poorer soils and reduced funding for agricultural research.

INCREASED BIOFUEL PRODUCTION:
Increases in the production of biofuels from food crops means that more _____ are growing crops to sell as biofuel rather than food. In 2013, nearly 40 percent of the United States' corn (maize) crops were turned into ethanol to fuel vehicles. This is causing a _____ of food and also increasing the price of other foods like rice and wheat.

INCREASED INCOMES:
Dramatic economic growth in China, India and other developing countries has resulted in higher _____ for food in these countries. People in these countries are getting wealthier, buying more food and consuming more food.

NATURAL DISASTERS:
Droughts, floods, severe storms and earthquakes can all damage farms, resulting in the loss of crops and livestock and damage to the local _____. Farmers can lose a whole season's harvest leaving them without food to eat or sell for an income.

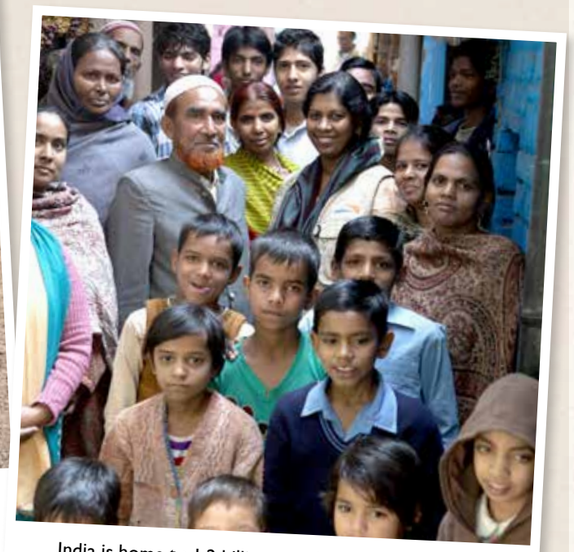
OIL PRICES:
Oil prices affect food production by increasing the cost of using farm machinery and of transporting food. As oil prices increase, this can push up the price of _____ and make it harder for poor families to feed their children.

POPULATION GROWTH:
In 2014, the world's _____ grew by an estimated 81 million people. More people mean more food will be required now and in the future.

REDUCED GRAIN SUPPLY:
In 1998 and 1999 the international average for grain stock supply was 116 days. By 2012, stocks had dipped to an _____ 70 days. However, with increased population and climate change instability, the Earth Policy Institute believes this buffer to be inadequate.

URBANISATION:
Over half the world's population live in urban areas. This means that as cities expand, there is less agricultural _____ available for growing food. Also, as farmers move into cities, there are less family farms producing food to eat.

After an extended drought, Tanzania passed a national irrigation law to protect farmers from the challenges of extreme weather and climate change, and to help farmers use irrigation to improve food security.



India is home to 1.2 billion people. Based on predicted population growth and urbanisation, food and water demand will create major challenges by 2050. India will need to produce more food, with less water and a declining rural work force.

For you to do

1. Choose the best word from the list below to complete each paragraph opposite.

   shortage droughts estimated environment demand land
   irrigation production population livestock farmers food

2. Read p. 10–11. Using this information create a mind map identifying the main causes of food insecurity and any inter-connections between these causes.

Demand for food is up

When the demand for a product like food increases, the price of that product can also increase. When the price of food increases, people have to spend more of their income on buying food. For people living in extreme poverty, they may have to eat even less and face worse hunger. Here are three reasons for the increasing demand for food in the world.

Increasing incomes

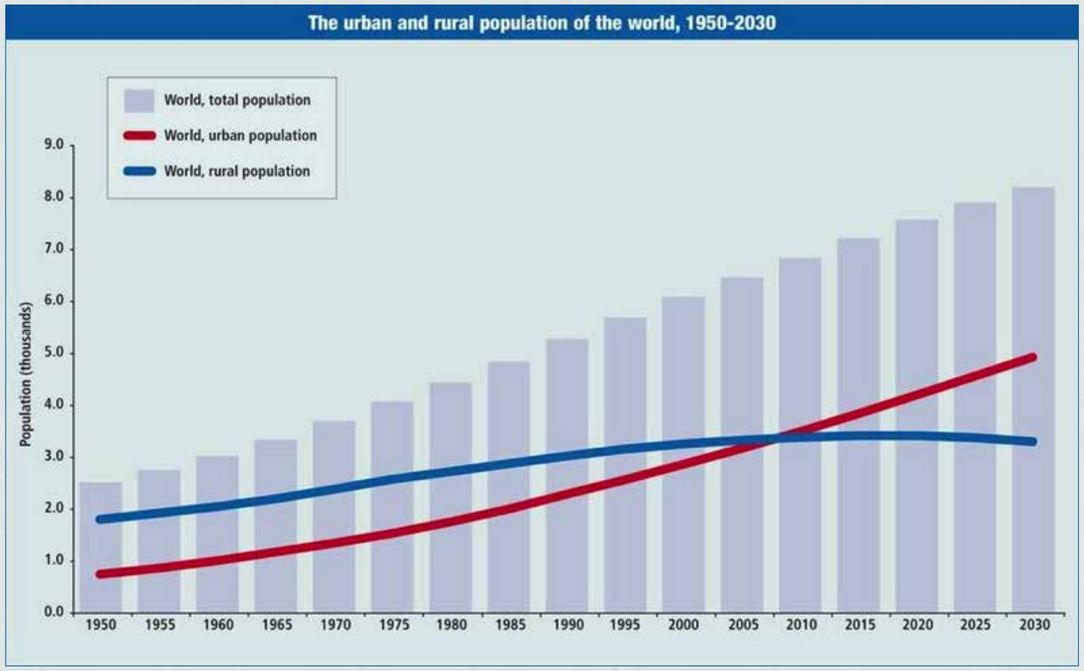
Economic growth has resulted in higher incomes for many millions of people. As more and more people have increased incomes, they now buy more food. Also, as incomes increase, families buy more meat products which use more water and food grain in their production. For example, 13 kilograms of grain is required to produce one kilogram of beef.

Population growth

The demand for food has also been rising because of population growth globally. In 2014, the world's population was estimated to have grown by 81 million people. Every year there are more mouths to feed. See graph below.

Urbanisation

In 2008, for the first time in history, half the world's population lived in urban areas. The movement of people from rural areas to towns and cities is a trend that will continue. Urban populations do not grow as much food as rural populations. As cities expand, there is less agricultural land available for growing food. Also, as farmers move into cities, there are less family farms producing food to eat. Finally, food must be transported to cities. As oil prices increase, this pushes up the price of food in cities.



Urban and rural population of the world, 1950-2030. Source: UN Population Division

DID YOU KNOW?

Keeping small animals such as chickens and goats helps food security. These are easy to look after, relatively cheap, and provide a source of income and food.

Food supply is down

Sustainable food security is threatened when environmental ecosystems are damaged, reducing the amount of food that can be produced. When there is less of a product (like food) available it can drive up the price. Examples of environmental challenges that can affect food supply include:

Deforestation and degraded soils

When trees have been chopped down, the land can become degraded with soil erosion. Good topsoil can be washed away in rain or blown away with winds, leaving bare soil that is not as productive. Through continuous cultivation, failure to return organic matter (eg, leaves) to soils, and overuse of chemical fertilisers, land has less ability to produce food.

Natural disasters

Each type of natural disaster can damage agricultural land and destroy crops and livestock in different ways. Floods can drown crops and livestock. Torrential rains can wash away topsoil. Droughts can cause plants to wither and die. When natural disasters persist for a long time, or re-occur frequently, farmers not only repeatedly lose their own food supply but it becomes harder to afford to rebuild and keep their farms going.

Less biodiversity

When communities depend on one or just a few crops, they are highly vulnerable if these crops fail. Biodiversity means having a good range of different crops so that if one fails, there are other crops to harvest and provide the necessary food.

Poor water management

Crops and livestock need water to survive, and extra water to thrive. Small scale irrigation, increased organic matter and permanent crops can reduce levels of water run-off, evaporation, and increase soil moisture retention.

For you to do

1. Use the six De Bono Thinking Hats to respond to the information on p. 12–13.

White hat: List three facts that you learnt about the growing demand for food and three facts about the challenges with supplying food.

Red hat: How do you feel about food insecurity in the world?

Black hat: What is a problem with an increased demand for food?

Yellow hat: What are some of the benefits of economic growth in countries like China and India?

Green hat: How could the world demand for food be decreased or slowed? How could the world supply of food be increased?

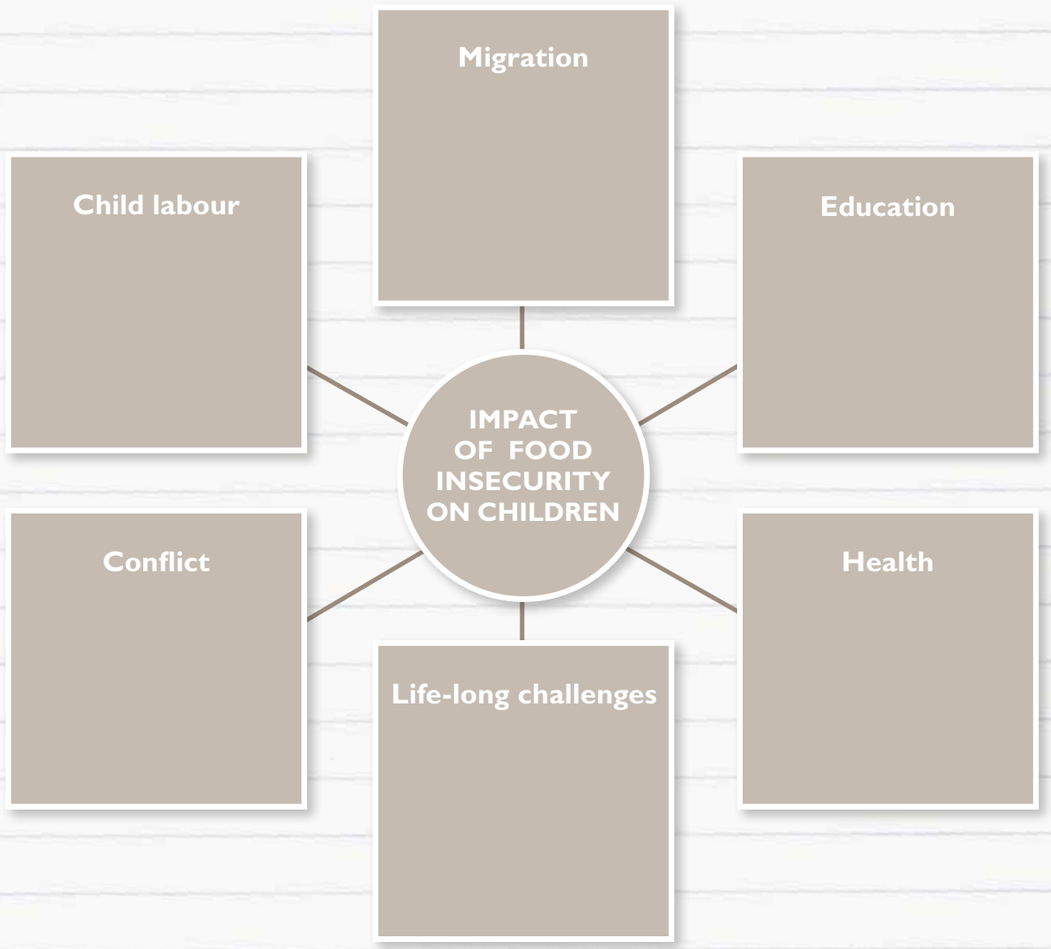
Blue hat: Make an overall assessment about the challenge of ensuring sustainable global food security.

How does food insecurity impact children?

Scarcity of food increases the risks of having poor health, becoming child labourers and receiving inadequate education for already vulnerable children. The limited supply and high cost of food impacts children in many ways.

For you to do

1. Read p. 15, then using the mind map, identify some key points about how food insecurity can affect children in these different areas of life.



With less food available, families cut out more expensive foods and just eat basic staples like rice or maize. This means children are not getting the right nutrition and become malnourished. They become weak, vulnerable to disease and their growth can be stunted.

Children can be taken out of school because parents can't afford to pay school fees or they need to work to pay for food. Lack of food and hunger make it difficult to concentrate on learning, and long-term malnutrition can affect mental development.

When food prices increase, children may have to work to earn money for the family to survive. Children may be forced to work in dangerous conditions and miss out on going to school.

Lack of access to enough nutritious food, particularly in early childhood, can have life-long effects. Lack of education and vulnerability to disease means when children become adults they can find it difficult to find and maintain work, and earn a higher income. Girls who have stunted physical development may have difficulty when giving birth to their own children.

When times are difficult, frustrated parents can sometimes take it out on the children. Also, when there is a shortage of food, tensions increase and this can lead to rioting or fighting that puts children at risk.

In the search for food, families may cross borders or migrate into urban areas. This can be dangerous for children who may have to live in refugee camps or urban slums.

Bangladesh country profile

Geography

The People's Republic of Bangladesh is about twice the size of Tasmania. It is a flat low-lying country at the junction of three mighty rivers: the Padma (Ganges), the Jamuna (Brahmaputra) and the Meghna.

Melting snows from the Himalayan Mountains and heavy monsoonal rains between June and October often cause annual floods, covering up to a third of the land. Forest cover is reduced as timber is used for fuel and building material. Soil eroded from the cleared mountain slopes builds up the fertile plain, but also chokes the river beds, creating more flooding. Coastal areas are vulnerable to destructive cyclones.

People

Bangladesh is one of the world's most densely populated countries with 156.6 million people. While most Bangladeshis still live in rural areas, the capital Dhaka is a megacity with a population of over 15 million people.

History

Under the partition of British India in 1947, the mainly Muslim nation of Pakistan was established, with two parts (East and West Pakistan) separated by India. In 1971, East Pakistan became the People's Republic of Bangladesh. In 1974-75, with poor infrastructure, political instability and major flooding, a food crisis resulted in the deaths of an estimated 1.5 million people.

Economy

The majority of Bangladeshis earn their living from agriculture. The fertile soil and climate are ideal for growing rice, jute (a natural fibre), sugarcane and tea. However, many people either own very small plots of land or are completely landless. Those who are landless have to work for low wages or a share of the crop. Many can only find seasonal work. Some poor families settle on silt islands, at great risk from floods or tidal waves. Few can afford drainage control measures, or to store grain for the next year.

Positively, women have increasingly gained access to microcredit and this has expanded opportunities for employment and income generation. In 2006, Muhammed Yunus and the Grameen Bank were jointly awarded the Nobel Peace Prize "for their efforts through microcredit to create economic and social development from below".

Living conditions

Many Bangladeshis live in extreme poverty. The majority of rural Bangladeshis live in small houses with woven bamboo walls, an earthen floor and thatched roof. In Dhaka, the wealthy have comfortable homes, but the poor crowd into unhealthy slums. They often build houses from waste materials, without drainage and sanitation.

Water from tube-wells is increasingly used for drinking, but people may still use water from ponds or rivers for cooking, dishwashing and bathing. Many people do not have adequate sanitation facilities. Inadequate sanitation can lead to diseases like cholera. There have been significant improvements in health, but diarrhoea, respiratory infections and measles still cause many young children's deaths.

Education

Bangladesh has made significant progress in increasing access to primary education for both girls and boys. However, many children do not continue on to secondary school.

	Bangladesh	Australia
MDG 1		
Proportion of population living on less than $1.25 a day (%)	1990 – 70.2 2010 – 43.3	
Prevalence of underweight children under 5 years old (%)	1990 – 66.0 2010 – 31.9	
MDG 2		
Proportion of students completing Grades 1-5 (%)	1990 – 43 2010 – 96.4	
MDG 3		
Proportion of seats held by women in national parliament (%)	1990 – 12.7 2014 – 20	
MDG 4		
Under 5 child mortality rate (number of deaths per 1,000 live births)	1990 – 146 2010 – 53	
MDG 5		
Maternal mortality rate (number of deaths per 100,000 live births)	1990 – 574 2010 - 194	
MDG 6		
Prevalence of malaria (per 100,000 population)	2008 – 776 2013 – 202	
MDG 7		
Proportion of land area covered by forest (tree coverage) (%)	1990 – 9.0 2010 – 13	
Proportion of people with improved sanitation (%)	1990 – 39 2010 – 63.6	
MDG 8		
Internet users per 100 population	1990 – 0 2010 – 75.8	

Source: MDG Bangladesh Progress Report 2013

BANGLADESH

Source: Map courtesy of The General Libraries, The University of Texas at Austin.

Over the past 40 years the proportion of the population living in urban areas in Bangladesh has increased from five percent to 28 percent. Dhaka is now a megacity of 15 million people.

For you to do

1. Research the Millennium Development Goal (MDG) data for Australia and complete the table on p. 16.

2. Choose an MDG and graph the changes in Bangladesh and Australia from 1990-2010. What trends do you observe and what are possible future directions?

3. Using the photo analysis worksheet, review the images of Bangladesh in the photo kit. Worksheet and photo kit available on the Get Connected: Food Security page at **worldvision.com.au/schoolresources**

4. (a) With a partner, brainstorm an initial list of questions about Bangladesh:

- Economic questions about money, trade and aid
- Social questions about people and culture
- Environmental questions about the natural and built environments

(b) After reading p. 18-19, review your questions – have any been answered? Do you have any new questions to add to your list?

Bangladesh environmental profile

Bangladesh is located by the Bay of Bengal. The coastal area makes up one third of the country. Approximately 29 percent of the population lives in the coastal zone. Bangladesh is at risk for cyclones, storm surges, and climate change-related rises in sea level. Approximately 70 percent of Bangladesh has a height of only five metres or less above sea level.

Bangladesh has a large freshwater ecosystem made up of rivers and ponds. Its floodplains form one of the world's most important wetlands, home to hundreds of species of unique plants, fish, birds and other wildlife. These are a source of income and nutrition for millions of people.

In the delta of the rivers Ganga, Brahmaputra and Meghna, at the point where it merges with the Bay of Bengal, is a large block of tidal mangrove forest which extends into India, and supports a large, biodiversity-rich ecosystem. Enormous amounts of sediments are carried by the three rivers and contribute to the expansion of the mangroves. Economic activities include timber, fishing and honey collection. Some parts of the mangroves have been converted for rice paddy and aquaculture farming. This area of Bangladesh has a subtropical monsoonal climate with annual rainfall of 1,600-1,800mm.

Dhaka, with a population of 15 million people, is located between four flood prone rivers, the Himalaya mountain range and cyclones from the Bay of Bengal. The urban poor are especially vulnerable to flooding with inadequate and overcrowded housing.

The large urban settlements like Dhaka, Chittagong and Sylhet depend on rural ecosystems for food. With urban expansion the demand for food is growing, and nearby forest and aquatic areas are being destroyed. The rural population depend on agriculture for income. Productivity of the land is declining. Damaging effects of climate change such as floods, salinity intrusion and droughts are affecting crop productivity.

Source: Adapted from Ecosystem in Bangladesh, http://bangladesh-ecosystem.blogspot.com.au/

Some of the environmental issues of concern in Bangladesh include:

- Pollution from the concentration of people and industrial activities in urban centres.
- Water pollution from agricultural and industrial chemicals entering the water system.
- Widespread natural arsenic contamination of the groundwater system.
- Loss of topsoil through erosion.
- Reduced soil quality due to salinity intrusion, loss of organic matter, and high intensity agriculture cropping.
- Degradation of wetlands and forests, contributing to a loss of biodiversity.
- High vulnerability to climate change.

Source: Asian Development Bank, Country Environmental Analysis: Bangladesh, 2004

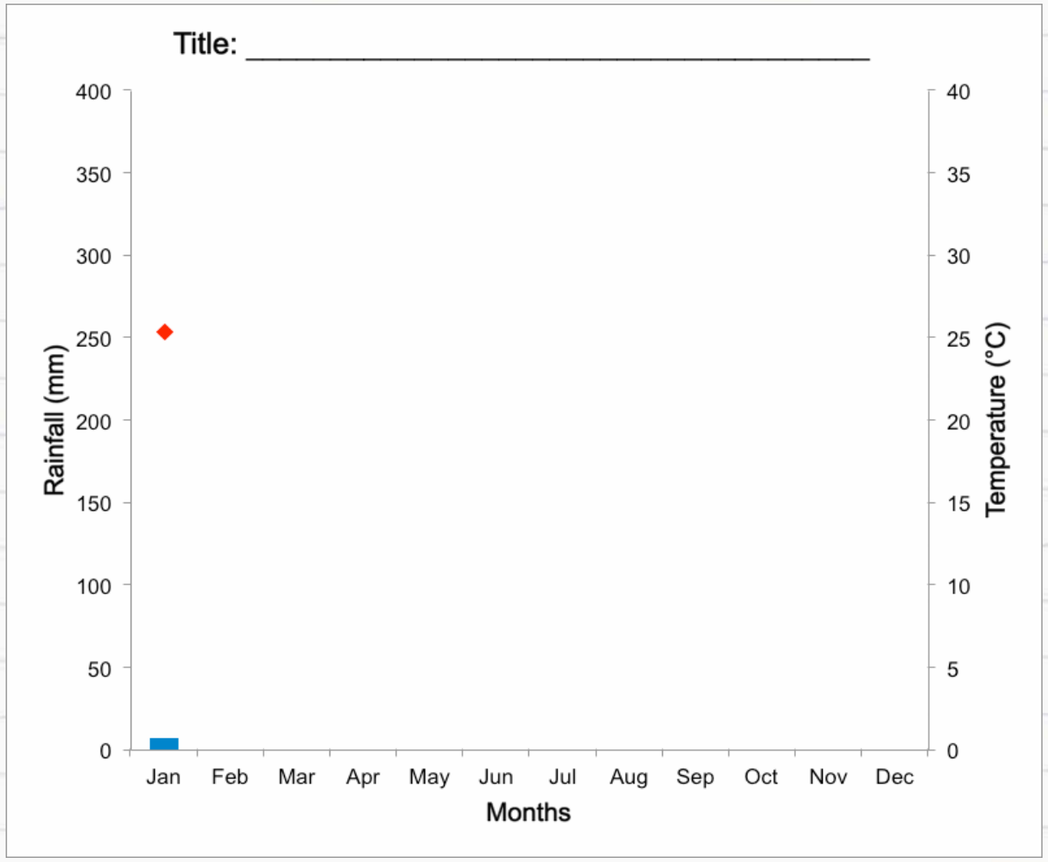
For you to do

1. Dhaka is the capital of Bangladesh. Using the information provided below about the temperature and rainfall in Dhaka, create a climate graph using the template provided.

Dhaka, Bangladesh climate data (23.7˚N, 90.4˚E)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean Daily Max Temp (°C)	25.4	28.1	32.4	33.8	32.9	32.2	31.4	31.6	31.8	31.6	29.6	26.4
Mean Total Rainfall (mm)	7	25	63	154	341	337	373	316	314	175	34	15

Source: World Meteorological Organization, data provided by Bangladesh Meteorological Department



2. With a partner, list some of the food security issues you think Bangladesh may face due to environmental and/or socio-economic factors.

Bangladesh - food security case study

Problems

While Bangladesh is nearly self-sufficient in rice production, food security remains a problem for the poor. Many are undernourished as a result of poor feeding habits and lack of access to nutritious foods. The average Bangladeshi diet lacks diversity or variety, with 75 percent of calories consumed coming from rice. Rice is the main staple that alone makes up the majority of total food grain produced and consumed in Bangladesh.

In Bangladesh, 32 percent of children under the age of five are underweight and 41 percent of children under five have stunted growth. These are two important measures of under-nutrition. Children in Bangladesh are more likely to show signs of under-nutrition and lack of access to sufficient food if:

- they are from a poor family
- their mother has no or little education
- they live in a rural area
- they are female
- they were small at birth

Interventions

In Bangladesh, World Vision uses different interventions to address under-nutrition and food insecurity. These include:

Educating families about good nutrition and healthcare.

Intensive feeding programs for malnourished children.

Agricultural training on growing new and a more diverse range of crops and rearing livestock.

Training in business skills and income generating opportunities, for example sewing.

Tamin's Story

Tamin and her family are an example of how these types of interventions can have a big impact. Tamin's parents received agricultural training on rearing chickens. At the end of the training they were given chickens to start their farm and now they have 35 chickens.

You can watch the video Tamin's Story (2 min 15 sec) on the Get Connected: Food security page at ***worldvision.com.au/schoolresources***

Over time they expanded their chicken farm, and improved their family's health and income. The chickens provide their family with eggs and meat to eat and to sell. With the extra money they were able to buy a cow for milk, to improve their home and their living conditions, and send Tamin and her sister to school.

World Vision Bangladesh works with an estimated five million people in 31 districts across the country. It works in partnership with the local community, government, and other non-government organisations to address poverty, improve maternal and child health, food and nutrition, disaster resilience, quality education, and child protection.

For you to do

1. Create a mind map that shows the factors that can increase the chance of a child in Bangladesh being undernourished.

2. Identify which of the four interventions mentioned reduce under-nutrition and/or improve food security directly and which achieve this indirectly.

3. Write a short paragraph explaining how training in income generating opportunities can help improve the food security and wellbeing of people.

Timor-Leste country profile

Geography

Timor-Leste (East Timor) lies northwest of Australia and forms the eastern half of the island of Timor. Rugged mountains run the length of the island. The southern coastal plain consists of swamps and river deltas. Timor-Leste has a tropical climate with wet and dry seasons.

The rocky soil and periods of low rainfall make farming difficult, often leading to food and water shortages in the dry season. Heavy rains in the wet season have resulted in erosion, soil loss and diminished water quality, which in turn threaten coral reefs and fisheries. Widespread use of slash-and-burn agriculture has also led to deforestation and soil erosion.

People

There are regionally distinct groups made up of people of Malayo-Polynesian and Papuan background and also a small Chinese minority. More than 96 percent of the population is Catholic and a small minority are Muslim. Many people also hold beliefs connecting them to the spirits of the dead, through stones, animals, wells or streams. Tetum and Portuguese are the official languages while Indonesian and English are the more common working languages.

History

The Portuguese started to trade with Timor in the 16th century and colonised it soon after. In 1859, Portugal ceded the western part of the island to the Dutch. On 28 November 1975, East Timor declared independence from Portugal and nine days later was invaded and occupied by Indonesian forces. Over the next 25 years, the East Timorese people opposed the occupation and up to 250,000 East Timorese were killed.

In August 1999, an overwhelming majority of the people voted for independence from Indonesia in a UN-supervised referendum. However, between the referendum and the arrival of an Australian-led multinational peacekeeping force, militias loyal to Indonesia killed thousands of East Timorese and pushed 300,000 into West Timor as refugees. The majority of the country's infrastructure was destroyed.

In May 2002, Timor-Leste was internationally recognised as an independent state. In 2008, a rebel attack on the government was thwarted and since then Timor-Leste has enjoyed a period of relative stability. In 2012, the United Nations was able to end its peacekeeping mission and withdraw from Timor-Leste.

Housing and corn fields near Baucau. Compared with the rest of Asia, Timor-Leste has a strong corn yield. With low rainfall and mountainous terrain, corn can be grown more easily than rice. However, many Timorese prefer to eat rice and rely on corn when rice is not available.

TIMOR-LESTE

Source: Map courtesy of The General Libraries, The University of Texas at Austin.

Economy

Timor-Leste's economic challenges include addressing widespread poverty, high youth unemployment, and rebuilding infrastructure destroyed during times of conflict.

Most people are subsistence farmers, and in some areas bartering is common. Industrialisation is only beginning to develop, so most manufactured items have to be imported, making the cost of living high. Over two-thirds of Timorese people live on less than US$2 a day.

Development assistance has been helping the people of Timor-Leste to rebuild the country's infrastructure. The revenue from offshore oil and gas reserves has provided national income and driven economic growth, but done little to create jobs for the unemployed.

Major agricultural products include coffee, rice, corn, vanilla, logging and fisheries. Tourism has the potential to develop further with more facilities. Industries include handicrafts, soap manufacturing and printing.

Living conditions

The majority of the population live in small villages and grow their own food. Villagers live in a variety of traditional housing made from bush materials. Dili, the capital, and Baucau are the two major towns.

For many people, food consists of what can be grown in gardens and small farms – rice and corn are the main staples, while chicken, sheep and pigs provide protein. People living near the sea also eat fish. Some people experience a "hungry season" when crops are planted and growing, but before they are harvested. During this time their stores of the previous year's crop begin to run out, and they are unable to access or afford to buy more food, resulting in an extended period of hunger. Malnutrition is a major issue in Timor-Leste. 58 percent of children under the age of five are assessed as having moderate or severe stunted growth – an indicator of chronic malnutrition. This is one of the highest rates in the world.

While Timor-Leste has made significant improvements in healthcare, the maternal mortality rate is still one of the highest in Asia. Access to improved sanitation facilities is also low, particularly in rural areas. Other health issues include tuberculosis, malaria and diarrhoea.

Education

School enrolment rates are increasing, and there are also significant numbers of older students, including adults, who are now attending schools. Timor-Leste is continuing to rebuild schools, and its workforce of qualified teachers, in order to improve the quality of education and to meet the needs of a growing population.

Indicator	Timor-Leste	Australia
Population (millions)	1.1 million	23.3 million
Urban population (% of total)	29.1	89.5
Gross National Income per capita (US$ PPP)	$9,674	$41,524
Adult literacy rate (% age 15 and above)	58.3	No data
Internet users (% of population)	0.9	82.3
Population using improved water source (% of total)[2]	69.1	100
Doctors per 10,000 people	1.0	38.5
Under-five mortality rate (per 1,000 live births)	57	5
Life expectancy at birth	67.5 years	82.5 years
Human Development Index rank (out of 187)	128th	2nd

Source: UNDP Human Development Report 2014;
[2] UNICEF http://www.unicef.org/infobycountry/ [accessed November 2014]

For you to do

1. With a partner read p. 22–23 and brainstorm a list of questions about Timor-Leste.
   - Economic questions about money, trade and aid
   - Social questions about people and culture
   - Environmental questions about the natural and built environments
2. Using the photo analysis worksheet, review the images of Timor-Leste in the photo kit. Worksheet and photo kit available on the Get Connected: Food Security page at **worldvision.com.au/schoolresources**

Timor-Leste – food security case study

Problems

Timor-Leste has a tropical climate, resulting in a dry season and a wet season with monsoonal rains. The locals also refer to a third season – the hungry season. The hungry season usually occurs from November through to February. This coincides with the time of year when crops are planted and growing, before they are harvested.

In Timor-Leste the majority of people are involved in agriculture, typically subsistence farming on small plots of land (food is grown for personal use rather than commercial quantities for trade). Using traditional methods, many farmers are only able to grow one crop a year, and often not in enough quantities to last the whole year. At the time farmers are getting ready to plant their crop, their stores of the previous year's crop are running out – resulting in an extended period of hunger.

Low crop yields are common. They are due not only to small farm sizes but also land degradation, poor soil fertility, limited access to quality seeds for planting, and poor access to water. Farmers also face challenges with the storage and processing of crops. Poor access to markets to sell surplus crops also means farmers have low incomes and lack cash to buy food during the hungry season.

Rural villages in the eastern part of the country are working with a range of partners, including World Vision, to address these issues and improve their food security. The project aims to improve incomes and access to food by improving crop yields and helping farmers to have better access to markets.

Teresa heads the farmers' group in her village and plays an important role in the community as the local market facilitator. Here she is teaching others about growing and harvesting sweet potatoes.

In 2014, a new rice milling plant opened near Baucau. This will enable local paddy farmers to produce high quality rice for the Timorese market and improve living standards. The mill is expected to provide a stable market for about 300 rice farmers, approximately one-third of them women.

Irrigated rice fields like this are more common near Baucau and Manatuto with better rainfall distribution. Most people are subsistence farmers.

Interventions

Improving crop yields

As part of the project, local soil is being tested to help farmers understand soil fertility and its impact on crop yields. Farmer groups are taught how to improve soil fertility through the addition of beneficial bacteria and fungi; use of organic fertiliser; rotating crops grown from new improved varieties of seeds; and including a rotation of legumes that add nitrogen to soil. Soil and water conservation techniques, such as terracing, are also part of the training.

Improving access to markets

Farmers can improve their incomes by selling surplus crops. The project includes training in business skills to help farmers analyse markets, build relationships with potential buyers, and add value to their agricultural produce. For example, local supermarkets pay extra for high quality fruit and vegetables, particularly if they are pre-washed and packaged. Farmers can then use this extra income towards buying additional food. Farmers also identify crop varieties that will grow well in their local environment.

The jackfruit is native to parts of South and South-East Asia. The jackfruit tree is well suited to tropical lowlands, and its fruit is the largest tree-borne fruit, reaching as much as 35kg in weight.

Teresa is a Timorese farmer trained in soil and water testing, seed planting and local market facilitation. Now, her farmers' group has a link with supermarkets in Dili. Twice a week, the supermarket truck comes to buy and collect their produce.

For you to do

1. Read the information on p. 22–25, and with a partner, identify some of the likely environmental and economic causes of food insecurity in Timor-Leste.
2. With a partner, discuss how this project in Timor-Leste addresses environmental issues that limit food production. Are any environmental issues not addressed by this project?
3. Compare the food security project in Timor-Leste with the project examples from Bangladesh (p. 20–21). What are the similarities and differences between the projects? Consider the causes of food insecurity and the responses to the problem in Timor-Leste compared with those in Bangladesh.
4. Read the handout "From farm to market" and watch the video Youth Ambassadors in Timor-Leste (2 min 01 sec) on the Get Connected: Food security page at **worldvision.com.au/schoolresources**

Global citizenship: 40 Hour Famine

A global citizen understands that we live in an interconnected world. The decisions and actions of governments, organisations and individuals can influence the lives of people in other parts of the world. One way that young people around the world have expressed their global citizenship is by participating in the 40 Hour Famine.

40 Hour Famine

Since 1975, the 40 Hour Famine has been one of Australia's biggest youth events, raising community awareness and much-needed funds to help fight global hunger. Participants give up something that matters to them for 40 hours, such as food, technology or talking, to raise awareness and funds for children living with poverty and hunger. Over time, the 40 Hour Famine has also grown to include the World Vision Youth Conference and study tours by Youth Ambassadors to communities impacted by food insecurity.

2015 marks the 40th anniversary of the 40 Hour Famine. The focus of the 40 Hour Famine has changed over time from funding emergency food aid to funding long-term sustainable food security projects in different parts of the world. Over those 40 years, it is estimated that almost $200 million had been raised, providing practical help to reduce hunger and malnutrition. In the seven years prior to 2015, more than two million people have benefited from food security projects and assistance through 40 Hour Famine funds.

Find out more about how you can stand up to global hunger at **40hourfamine.com.au**

In 2015, six World Vision Youth Ambassadors travelled to Timor-Leste to learn more about food security. They also learnt about the resilience, hard work and hospitality of the people.

Who is the global citizen?

This is a story about four people named **Everybody, Somebody, Anybody** and **Nobody**.

There was an important job to help make the world a better place and **Everybody** was sure **Somebody** would do it. **Anybody** could have done it, but **Nobody** did it.

Somebody got angry about that, because it was **Everybody's** job. **Everybody** thought **Anybody** could do it but **Nobody** realised that **Everybody** wouldn't do it.

It ended up that **Everybody** blamed **Somebody** when **Nobody** did what **Anybody** could have done.

Who was the best person to do it? Who could have done it? Who did it?

Food action ideas

Organise for your school to participate in the 40 Hour Famine and raise money to support sustainable agriculture in developing countries.

Develop a plan to grow a school vegetable patch and compost waste. Eat your produce.

Write a letter or send an email to the editor of your local newspaper or your Member of Parliament to raise awareness about food insecurity.

Organise an event for World Food Day (16 October) to educate people about food insecurity.

Hold a "Foods from Around the World" fair and invite a guest speaker to your class or school. Prepare questions to ask them.

Share a "rice only" lunch at school or go without morning tea and reflect on how hard it is to concentrate or play when you are hungry.

For you to do

1. With a partner, brainstorm reasons why Australian citizens choose to participate in events like the 40 Hour Famine. How might this connect to the concept of "global citizenship"?
2. Research either the Zero Hunger Challenge, World Food Day or the 40 Hour Famine. Write a short report on the event and its goals.
3. Read the texts written by the 2015 Youth Ambassadors. Complete the worksheet analysing the features of these texts, and write your own text inspired by a 40 Hour Famine film clip. Worksheet, including the texts, and film clips Tamin's Story and Sofia's Story are available on the Get Connected: Food Security page at **worldvision.com.au/schoolresources**

Genetically modified food – a debate

Should we use genetically modified foods to save lives?

Problem

The World Health Organization (WHO) estimates that 190 million preschool children and 19 million pregnant women are vitamin A deficient. Children with vitamin A deficiency are more likely to suffer from poor health and premature death. Vitamin A deficiency is the leading cause of preventable blindness among children in developing countries. Each year, up to 500,000 children go blind as a result of this condition. Half of them die within 12 months of going blind.

In Bangladesh, one in every five children aged six months to five years is estimated to be vitamin A deficient. Among pregnant women, 24 percent are affected by vitamin A deficiency.

Intervention

There is an international debate on how this can be best addressed. On the one hand, there is a movement to develop genetically engineered Golden Rice. On the other hand, there is a movement that opposes the development of genetically modified organisms (GMOs). Read the following statements and identify whether they are for or against the use of Golden Rice.

	For / Against
Golden Rice is a rice variety that has been genetically engineered to produce beta-carotene to solve the problems of vitamin A deficiency.	
Organisations such as Greenpeace and the Organic Consumers Association oppose the use of genetically modified organisms (GMOs) in agriculture. They claim Golden Rice will open the door to more widespread use of GMOs and distract the world from finding more natural solutions.	
The poor in developing countries live primarily on a diet of starchy staples (rice) that lack vital micronutrients like vitamin A. Rice provides 50-80 percent of total caloric intake for many people in Asia. Asian farmers could grow Golden Rice in the same ways they grow rice today while consumers could include it in their regular meals to obtain the required amount of vitamin A.	
Orange coloured fruit and vegetables (such as carrots and sweet potato) can provide vitamin A, but many families in poor communities don't have access to them or find them too expensive.	
In 2008, WHO malnutrition expert Francesco Branca argued the lack of real-world studies and uncertainty about how many people will use Golden Rice. He concluded "giving out supplements, fortifying existing foods with vitamin A, and teaching people to grow carrots or certain leafy vegetables are, for now, more promising ways to fight the problem".	
Golden Rice is a distraction from more natural solutions such as eating a more varied diet containing foods rich in beta carotene such as sweet potato, leafy green vegetables and fruit.	
Golden Rice research is supported by the International Rice Research Institute and the Bill and Melinda Gates Foundation. It will be available to farmers and consumers only after it is determined safe for humans, animals and the environment and authorised by the appropriate authorities. It has been safely tested for 20 years.	
Indian activist, Dr Vandana Shiva, argues that Golden Rice is a public relations exercise to promote genetic engineering technology and agribusiness. She is concerned that GMOs are untested, unproven and unnecessary technology that will reduce biodiversity.	
Golden Rice is intended to be used in combination with existing approaches to overcome vitamin A deficiency, including eating foods that are naturally high in vitamin A, taking vitamin A supplements and breastfeeding.	
According to the American Journal of Clinical Nutrition (2009), daily consumption of a modest amount of Golden Rice – about a cup – could supply 50 percent of the Recommended Daily Allowance of vitamin A.	

Golden Rice is a rice variety that has been genetically engineered to produce beta-carotene to solve the problems of vitamin A deficiency. Carotene is the substance in carrots, pumpkins and sweet potatoes that colours them orange.

White rice is high in carbohydrates, which is a source of energy, but only contains small amounts of other vitamins and minerals. These micronutrients are vital components of a healthy diet. People who eat mostly rice are likely to be deficient in one or more of these.

For you to do

1. What are the benefits of developing Golden Rice as a solution to vitamin A deficiency in developing countries in Asia?
2. What are the dangers or risks in developing Golden Rice?
3. What are the alternative solutions for addressing vitamin A deficiency in developing countries?
4. Use the information on p. 28 to write a well sequenced discussion text on the topic "Should we use genetically modified foods to save lives?" Conduct a debate on the topic.
5. On a scale of 0 (totally against) – 10 (totally for), what is your opinion on developing Golden Rice as a solution to address vitamin A deficiency?

Perspectives on food

1.

I have 6,000 hectares of land for mixed farming with wheat, oats, sheep and lambs. The drought has been difficult but it is a good business for my family.

2.

I get dizzy and find it hard to concentrate in school when I don't have anything to eat. More and more, I don't even go to school because I don't have the energy. Sometimes, I beg on the street to get some money for food.

3.

The government is encouraging us to grow corn (maize) to produce ethanol. Now I get more money and biofuels are better for the environment.

4.

As a government, we have a responsibility to make sure that people have enough food to live healthy lives. This year, we agreed to send $30 million to support the World Food Programme.

I am working with people in the community to train them in ways to use compost and plant different crops that are fast growing, drought resistant and nutritious. I encourage farmers to meet together and share their experience and knowledge.

5.

6.

Will I be able to feed my family tonight? I earn about $1 a day but a bag of rice costs $2.10. My children are losing weight and growing weak and there are days when we don't have anything to eat.

DID YOU KNOW?

The people who are particularly vulnerable to hunger and malnutrition include the elderly, infants and young children, pregnant and nursing women, the disabled and sick, and victims of conflict.

I have about one hectare of land and in the past I could get between three and five bags of sorghum. Since we have been managing our land better, the soil has improved and now I harvest 15 bags of sorghum.

7.

Everything is just so expensive now. Our food bill is increasing and we just can't afford to eat out at restaurants or get take-away like we used to. Things are not as good as they were.

8.

Our school did the 40 Hour Famine to help raise money to support sustainable agriculture in developing countries.

The war has made us dependent on food aid. I don't want to depend on this support, but we had to leave our village to save our lives and now we live in this refugee camp.

9.

10.

For you to do

1. Identify the person most likely to express the values or perspectives above by placing the corresponding number below:

_____ US or European farmer	_____ Australian student
_____ Bangladeshi parent	_____ Bangladeshi student
_____ Australian Government MP	_____ Refugee
_____ Australian farmer	_____ World Vision staff
_____ Australian parent	_____ Bangladeshi farmer

Jargon Busters

Biofuels: any kind of fuel made from living things, or from the waste they produce. In recent years, the term "biofuel" has come to mean the ethanol and diesel that is made from crops including corn and sugarcane.

Chronic hunger: long-term hunger caused by long-term problems of availability and access to food, rather than by temporary emergencies.

Famine: an episode of extreme food insecurity characterised by widespread food shortages, high rates of acute malnutrition, and deaths occurring from hunger.

FAO (Food Agriculture Organization): is a United Nations organisation founded in 1945. FAO's work is to deal with the long-term efforts to defeat hunger and make sure that all people receive their human right to food.

Food security: food security exists when everyone in the population has access to enough nutritious food to live an active and healthy life.

Malnutrition: a condition of being badly nourished due to an imbalance in food intake eg: calories, protein and/or other nutrients.

Undernourished: a condition of not having enough food to meet minimum energy requirements.

WFP (World Food Programme): is a United Nations organisation founded in 1963. WFP's job is to deal with emergency food relief and feed the hungry.

Yield: the amount that can be harvested from a crop.