

# get**connected**

A Global Education resource from World Vision

Issue 7 – Climate Change

April 2010

\$9.90



What is **climate change**?

How does **climate change impact** the poor?

How is the world responding to **climate change**?



Kushbu and her little brother were left homeless following floods in eastern India.

# Contents

What a wonderful world	3
Global environments	4-5
What is climate change?	6-7
Who is contributing to climate change?	8-9
How does climate change impact the poor?	10-11
Natural disasters	12
Water and health	13
Food and agriculture	14
Migration and biodiversity	15
How is the world responding to climate change?	16-17
Mitigation	18-19
Adaptation	20-21
Action on climate change	22-23
Different perspectives	24-25
Reflection and action	26
Crossword	27
Jargon busters	28

### About this resource

- What is climate change?
- Who is contributing to climate change?
- How does climate change impact the poor?
- How is the world responding to climate change?

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

For additional resources and references visit [worldvision.com.au/schoolresources](http://worldvision.com.au/schoolresources)

Your comments on this resource are welcome at [gloaleducation@worldvision.com.au](mailto:gloaleducation@worldvision.com.au)

**ISSN 1834-5018**

Published by World Vision Australia. 1 Vision Drive, Burwood East 3151.



World Vision Australia ABN 28 004 778 081 is a Christian relief, development and advocacy organisation dedicated to working with children, families and communities to overcome poverty and injustice.

©2010 All material contained in this publication is subject to copyright owned by or licensed to World Vision Australia. All rights reserved. Ref #6216

Written by Rod Yule.



## What a wonderful world!

Here are the words from a famous song performed by Louis Armstrong:

**I see trees of green, red roses too  
I see them bloom for me and you  
And I think to myself:  
"What a wonderful world!"**

**I see skies of blue and clouds of white  
The bright blessed day, the dark sacred night  
And I think to myself:  
"What a wonderful world!"**



Natural Environment



Human Environment



Cartoon by Nicholson from The Australian [www.nicholsoncartoons.com.au](http://www.nicholsoncartoons.com.au)

We live in an amazing and wonderful world – full of different people, animals, plants and natural environments. However, in the last 100 years, the population of the world has increased from 1.6 billion to nearly 7 billion.

The natural environment is changing and is under increasing pressure. Endangered species, threatened habitats, land degradation, polluted fresh water supplies and climate change are major issues for the world. Humans are facing important questions about how we interact with the environment in a sustainable way.

Climate change is impacting all countries in the world. However, we live in a world of great inequality and it is the poor and vulnerable that will be most affected by the consequences of ongoing climate change.

### DID YOU KNOW?

A large four-wheel-drive car travelling 3,000 kilometres emits the same amount of CO<sub>2</sub> that a family in Bangladesh emits in one year.



### For You To Do!

1. Write two more verses to the song above and follow the pattern – I see ...
2. In a small group, brainstorm how and why human beings change the natural environment.
3. Discuss both the positive and negative impacts of these changes.
4. With a partner, describe what you see in the cartoon by Nicholson. What colours have been used? What message is the cartoonist trying to communicate? Is it effective? Why/why not?

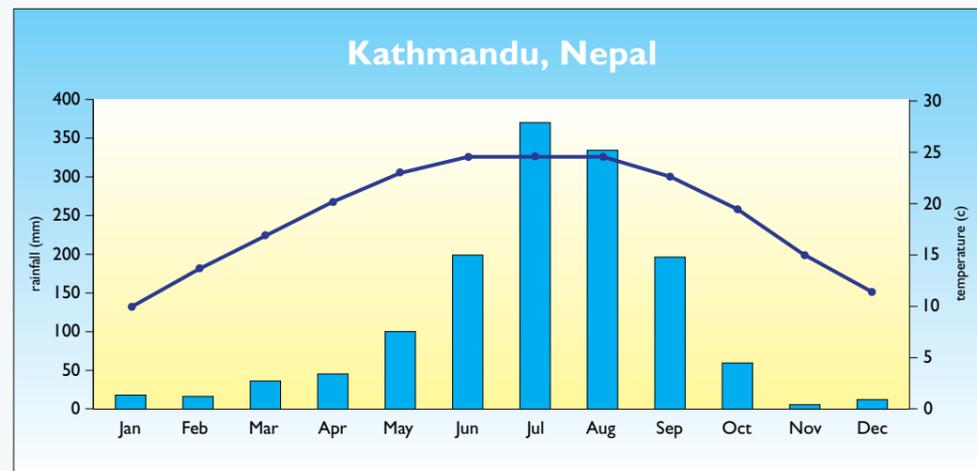
# Global environments

The world is made up of very different physical environments with different landforms, climates and vegetation. They include deserts, rainforests, polar lands, mountains and coasts. These physical environments are affected by the activities of people – their settlements, agriculture, industries and transport. At the same time, people and their human environments are affected by events in the physical environments.

Climate affects everything from the flora and fauna which inhabit a region, to the heating and cooling requirements of homes and businesses. When climate begins to change, all living things must adapt their lifestyles in order to survive.

## Mountains

Climate Graph: Kathmandu 28°N, 85° Elevation: 1,336 metres



Nepal is located between the Himalayan Mountains and northern \_\_\_\_\_. It is home to the world's highest \_\_\_\_\_, including Mount Everest (8,848 metres above sea level), and is one of the least developed countries in the \_\_\_\_\_. It is also experiencing an increase in extreme \_\_\_\_\_ events.

Forest fires are not uncommon during the dry \_\_\_\_\_. However, in 2009, fires remained out of control for longer than usual. For the previous six months, no \_\_\_\_\_ fell across most of the country – the longest dry spell in recent history.

"We have seen winter becoming drier and drier in the last three or four \_\_\_\_\_, but this year has set the record ... this dryness that led to so much fire is one of the effects of climate \_\_\_\_\_," said Department of Hydrology and Meteorology chief Nirmal Rajbhandari.

At the same time, parts of Nepal have also experienced short periods of huge rainfall during \_\_\_\_\_ and frequent, sudden downpours in the Himalayan foothills. Soils and forests are being exploited at unsustainable levels and many peasant \_\_\_\_\_ are leaving their land in search of better conditions in \_\_\_\_\_ like the capital, Kathmandu.

The average temperature in Kathmandu ranges from 10°C in \_\_\_\_\_ to 24°C in June, July and \_\_\_\_\_. Usually, the dry season begins in \_\_\_\_\_ and continues until \_\_\_\_\_.

## What physical environment is that?



### DID YOU KNOW?

We live in a world of 6.7 billion (6,700,000,000) people where 6% of the people own 59% of the wealth.

## For You To Do!

1. Label each of the physical environment photographs above – MOUNTAIN, DESERT, RAINFOREST and COAST.

2. Choose the best word to complete the sentences on page 4:

world	cities	monsoons	mountains	families
change	years	August	weather	precipitation
season	January	April	October	India

3. Complete the worksheet about Nepal and climate change.  
Download at [worldvision.com.au/schoolresources](http://worldvision.com.au/schoolresources)

# What is climate change?

Climate change is any long-term significant change in the climate over time.

Over the past 200 years, the amount of carbon dioxide in the atmosphere has increased by 35 percent and this has changed the earth's weather conditions. It is causing increased global temperatures, rising sea levels, more intense storms and melting ice sheets and glaciers. From 1906–2005, the global surface temperature has increased 0.74°C (IPCC, 2007). Continued warming will depend on the way humans respond to this evidence.

The main cause of climate change is the burning of fossil fuels (oil, coal and natural gas) and the cutting down of trees (deforestation), which convert carbon dioxide into oxygen. Human beings play a significant role in both the burning of fossil fuels and deforestation.

## What are the main causes of climate change?



**Increased burning of fossil fuels**  
(coal, oil and natural gas)



**Increased deforestation**

**Increase in temperatures**

**Rise in sea levels**

**Increased storms and natural disasters**

**Melting ice sheets and glaciers**

## What are the consequences for poor communities?

**Health and education suffer**

**Loss of habitats and biodiversity**

**Food and agricultural losses**

**Water shortages**

**Increased conflict and migration**

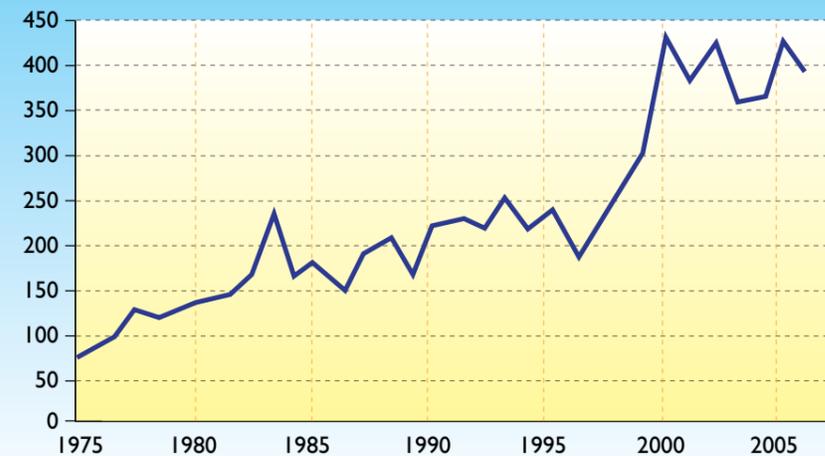
## What is the difference between climate and weather?

**Weather** is the day-to-day condition of the atmosphere at a particular place. It can change from day to day and even hour to hour.

**Climate** is the weather experienced by a place over many years.

A drop of 5°C in the **weather** may mean you need to take a coat with you if you go outside. However, a drop of 5°C in the **average climate** may mean 100 metres of ice covering your house!

### Time trend of natural disasters,<sup>(1)</sup> 1975–2006



(1) Natural disasters = country-level disasters

Source: <http://www.unisdr.org/disaster-statistics/pdf/isdr-disaster-statistics-occurrence.pdf>

### DID YOU KNOW?

Nine planet Earths would be required to absorb all of the world's carbon if every poor person had the same energy-rich lifestyle as an Australian.

## For You To Do!

1. The two main causes of climate change are:

(i) \_\_\_\_\_ (ii) \_\_\_\_\_

2. How does climate change impact the environment?

(i) \_\_\_\_\_ (ii) \_\_\_\_\_

(iii) \_\_\_\_\_ (iv) \_\_\_\_\_

3. The consequences for poor communities include:

(i) \_\_\_\_\_ (ii) \_\_\_\_\_

(iii) \_\_\_\_\_ (iv) \_\_\_\_\_

(v) \_\_\_\_\_

# Who is contributing to climate change?

The poorest countries of the world have contributed least to the world's carbon emissions. Compared to countries like China, USA, Russia and Australia, the poorest countries burn small amounts of fossil fuel. However, developing countries like Bangladesh, Kiribati and Ethiopia are impacted the most by climate change. Is that fair?

## DID YOU KNOW?

China, the USA and Russia are the three largest producers of carbon dioxide emissions in the world. Australia is the 12th largest producer overall, but the largest *per capita* producer of carbon dioxide emissions.

The map below shows 16 countries and their total CO<sub>2</sub> emissions from the consumption of energy (2007) in million metric tonnes.



## Sea level rise – environmental refugees homeless



## Typhoon kills hundreds in Vietnam



## Emergency food aid to Kenya



## Extreme floods hit Bangladesh



## Australia on bushfire alert



## For You To Do!

- Rank the countries above from the greatest to the least carbon dioxide emitters (1-16)

Sri Lanka \_\_\_\_\_, Australia \_\_\_\_\_  
 Vietnam \_\_\_\_\_, China \_\_\_\_\_  
 Germany \_\_\_\_\_, Ethiopia \_\_\_\_\_  
 Japan \_\_\_\_\_, USA \_\_\_\_\_  
 Kenya \_\_\_\_\_, Russia \_\_\_\_\_  
 Kiribati \_\_\_\_\_, India \_\_\_\_\_  
 Bangladesh \_\_\_\_\_, Haiti \_\_\_\_\_  
 Nepal \_\_\_\_\_, Brazil \_\_\_\_\_

- Suggest reasons why some countries produce more carbon emissions than other countries.

# How does climate change impact the poor?

The poorest countries of the world have contributed least to the world's carbon emissions and climate change (see p. 8-9). However, the poorest countries are affected the most by climate change and it is the poorest families in these countries that are the most vulnerable.

We already live in a world of great inequality between the rich and the poor. The effects of climate change will increase existing disadvantage and inequality.



## Natural disasters

In developing countries, poor building materials mean that homes and school buildings are more likely to be damaged or destroyed by a major storm or cyclone. Children are often forced to withdraw from school to work and health services struggle to adequately care for the injured and prevent the spread of disease.



## Water

Around the world, 1.2 billion people (a fifth of the world's population) don't have access to clean, safe water. More frequent, severe and widespread droughts will make gaining access to clean, safe water even more difficult.

## Health and disease

Hunger and lack of access to safe water damage the health of the poor – and especially children. Malnutrition, diarrhoea and malaria are already major health issues for the poor and are at risk of increasing as climate change progresses.

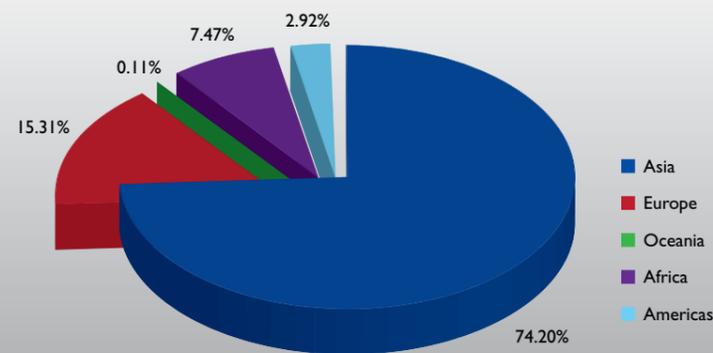
## Migration and conflict

Water and food shortages cause conflict between communities and force people to find new land that will provide for their needs. Increasing sea levels will also force the people of low lying island countries to migrate in order to survive.

## Food and agriculture

In 2010, over one billion people experience hunger and an estimated 25,000 children die of hunger and malnutrition every day. Climate change means droughts are becoming more frequent, severe and widespread and this is making it harder for farmers to grow enough food to survive. Many of the poorest families in the world are subsistence farmers.

Percentage of people killed by natural disasters by continent 2006



Source: <http://www.unisdr.org/disaster-statistics/pdf/isdr-disaster-statistics-occurrence.pdf>

## Education

Natural disasters, food and water shortages, poor health, migration and conflict make it more difficult for children to access schools and receive their right to an education.

## Environment and biodiversity

Increasing temperatures and sea level rises will threaten the habitats of plant and animal species that communities have depended on for their survival. For example, low lying island nations that depend on fisheries may be at risk if climate change continues.

## For You To Do!

Complete the mind map below using the information on p.10.



## DID YOU KNOW?

The carbon dioxide we send up into the atmosphere in 2010 will be there for 100-150 years. It will still be there in 2110 and beyond. In contrast, methane gas only has a life span of 10-15 years.

# Natural disasters

Cyclone Nargis struck Myanmar on 2 May 2008. It affected 2.4 million people and more than 140,000 people died. The fertile rice farming region suffered severe damage and the storm surge travelled about 35 kilometres inland. This dumped large amounts of salt over the land that contaminated the soil and makes agriculture difficult.

Nway was nine years old when Cyclone Nargis killed every member of her family and ruined her home and school. Nway was with her aunt when the cyclone struck and they squeezed into one building along with 100 other people. After hours of heavy rain and 240 km/h winds through the night, the light revealed flattened rice crops, flooded roadways, houses reduced to rubble and a shocking loss of human life.

In Nway's village, located hours by boat from the nearest town, 120 out of a population of 430 had lost their lives. Nway recalls, "When I walked to my aunt's house that day I passed lots of dead bodies. I wanted to help but I was too scared. I only helped clean up my auntie's yard".

While disaster events cannot always be prevented, their risk can be significantly reduced. It is true that natural disasters have always occurred and the poor have always suffered most from them. However, climate change is increasing the frequency and severity of natural disasters.



Nway and the flattened buildings of her village in Myanmar.

**Table 1: Four climate threats and the 12 countries most at risk**

Drought	Flood	Storm	Im sea level rise
Malawi	Bangladesh	Philippines	All low-lying island states
Ethiopia	China	Bangladesh	Vietnam
Zimbabwe	India	Madagascar	Egypt
India	Cambodia	Vietnam	Tunisia
Mozambique	Mozambique	Moldova	Indonesia
Niger	Laos	Mongolia	Mauritania
Mauritania	Pakistan	Haiti	China
Eritrea	Sri Lanka	Samoa	Mexico
Sudan	Thailand	Tonga	Myanmar
Chad	Vietnam	China	Bangladesh
Kenya	Benin	Honduras	Senegal
Iran	Rwanda	Fiji	Libya

Low Income  Middle Income

Source: World Bank

### DID YOU KNOW?

Eleven of the 12 warmest years since 1850 occurred between 1995 and 2006.

# Water and health

According to the World Health Organization (WHO), climate-sensitive diseases such as malnutrition, diarrhoea and malaria are claiming an increasing number of lives every year. These diseases are also linked to a lack of clean, safe water and children living in poverty are the most vulnerable. The WHO predicts an increase in climate change-related illness and disease, including:

- increased malnutrition caused by climate-induced food insecurity;
- more deaths and injuries from extreme weather events;
- increased incidence of diarrhoea linked to either excess or scarcity of water;
- more illness and deaths from heatwaves, particularly among the elderly; and
- changes in the geography of insect-spread diseases like malaria caused by changing temperatures and rainfall patterns.



• **Watch Water in an Emergency on the Get Connected 7 DVD. This shows the danger of unclean water for the people of Myanmar after Cyclone Nargis.**



Myanmar, May 2008.

## For You To Do!

1) Use Table 1 and an atlas to tally the regions most affected by the four climate threats. What patterns do you notice? In which regions do you find the most at risk countries?

2) Watch *Rebuilding Resilient Communities - One Year On on the Get Connected 7 DVD*. Take notes on the ways that World Vision has worked in Myanmar to help rebuild communities one year after Cyclone Nargis.

	Asia/Pacific	Latin America	Africa	Europe	North America
Drought					
Flood					
Storm					
Sea level rise of 1 metre					

# Food and agriculture

Lalu is seven years old and lives in a rural village in western Nepal. It is a remote region where 5,000 people live, and it's about 350 kilometres west of the capital city, Kathmandu.

Lalu's father was killed in the recent civil war and his mother remarried and lives with her new family, leaving Lulu to live with his grandparents. They have a small amount of land. In the past, they were able to grow enough food, but prolonged dry seasons and flooding have both affected their ability to produce enough food for the family.

Lalu's grandmother says that roti and rice are now all they can afford, but they often go to bed hungry without any food in their stomachs. In the past, the family grew cauliflowers, potatoes and other green vegetables. However, in the last few years, lack of rain followed by heavy monsoon rains and flooding saw their crops destroyed. In fact, in 2009, their land near the river was lost – washed away by the late monsoon rains.

During winter, everything is covered in snow. This makes it difficult to grow food and so Lulu often goes to bed with an empty stomach. This causes him to feel dizzy and weak. Hunger and malnutrition are increasingly common problems for the children in the village. Changes in the climate are making life increasingly difficult for the people in this remote area of Nepal.



Lalu's grandfather looks across where his land was washed away by flooding.



The land is so dry that Lulu's grandparents are unable to grow anything viable.



Seven-year-old Lulu.

# Migration

The president of the low-lying Pacific atoll nation of Kiribati says his country may already be doomed because of climate change. President Anote Tong said communities had already been resettled and crops destroyed by sea water in some parts of the country.

"We may be at the point of no return where the emissions in the atmosphere will contribute to climate change to produce a sea-level change that in time our small low-lying islands will be submerged. Villages that have been there over the decades, maybe a century, and now they have to be relocated. Where they have been living over the past few decades is no longer there, it is being eroded. This is an issue of human survival."

In the worst-case scenario, Kiribati would be submerged by the end of this century and Mr Tong said he wanted help from other countries to resettle his people.

Other countries that are at risk of major migration due to sea-level rise include Tuvalu, Bangladesh, Vietnam and the Maldives.



Flooding at the Lagoon Breeze Hotel, South Tarawa, Republic of Kiribati (Photo: Republic of Kiribati Ministry of Environment, Lands, and Agricultural Development)

# Biodiversity

The UN International Year of Biodiversity (2010) highlights the ongoing loss of species and habitats around the world. The expansion of cities, deforestation, farming and pollution are among the major causes of habitat loss. Climate change increases pressure on habitats and species that are already vulnerable and at risk – such as Australia's Great Barrier Reef.

## DID YOU KNOW?

The world's first evacuation of low-lying islands due to climate change is now underway in Papua New Guinea's Carteret Islands. These small islands have gradually become uninhabitable. The islanders are no longer able to grow food as the soil has become saturated with salt from rising ocean waters and storm surges. The people are being relocated to the island of Bougainville, four hours away by boat.



Great Barrier Reef

## For You To Do!



1. Watch *Lalu's Story on the Get Connected 7 DVD*. Describe how the visual images, music and spoken text are used in the DVD. What is the purpose of the DVD? What information does it give? How does the DVD make you feel? What more would you like to know about Lulu and his community?
2. Research the UN International Year of Biodiversity (2010) at [www.biodiversity911.org](http://www.biodiversity911.org) and identify species or habitats that are at risk. Design a PowerPoint presentation about how climate change may impact your chosen species or habitat.

# How is the world responding to climate change?

The world is dealing with climate change in two ways – mitigation and adaptation.

1. **Mitigation** involves reducing carbon dioxide gas emissions and stopping the problem of climate change from growing.

This means burning less fossil fuel (coal, oil and natural gas) and producing more renewable energy from technologies such as wind, solar and hydro power. Another way to reduce carbon dioxide in the atmosphere is to plant more trees and prevent the destruction of existing forests. Our forests help to absorb the build up of carbon dioxide, a major greenhouse gas, in the atmosphere.

2. **Adaptation** involves learning how to live with existing climate change and protecting ourselves from the future effects of climate change.

For example, this includes farmers growing drought resistant crops and learning new ways to care for the soil. It means teaching women in developing countries to swim in order to survive a flood or storm. In Bangladesh, it means moving homes, shops and schools onto boats.

## DID YOU KNOW?

In rich countries, governments can afford to build strong walls and barriers to protect communities from flooding and coastal erosion. However, developing countries have fewer resources available to adapt and protect their communities.

## Case study: Ethiopia

### Forest regeneration

In Ethiopia, the Humbo district is 420 kilometres south-east of the capital, Addis Ababa. Of the nearly 49,000 people in Humbo, an estimated 85 percent live in poverty. The people experience chronic food shortages because the area has high population density, variable rainfall and environmental degradation, and it is over-reliant on one crop – corn. Poverty, hunger and increasing demand for agricultural land have driven local communities to over-exploit their forest resources.

Soil erosion is also a severe problem. Heavy rain causes flooding and extreme downpours can cause mudslides that kill people and livestock and damage crops and infrastructure. On the other hand, prolonged drought conditions are becoming more extreme in lowland areas. Recurrent droughts and floods create ongoing poverty for many households. For example, poor families only start to recover from one disaster and another disaster comes and wipes out their gains.



Before: deforestation and soil erosion in Humbo district, Ethiopia.

### Creating a “carbon sink”

In response, World Vision has developed a mitigation project that involves the regeneration of nearly 3,000 hectares of degraded forests with indigenous, bio-diverse species. These forests act as a “carbon sink”, absorbing and storing greenhouse gases from the atmosphere to mitigate climate change. Over the 30-year crediting period, it is estimated that over 870,000 tonnes of carbon dioxide will be removed from the atmosphere.

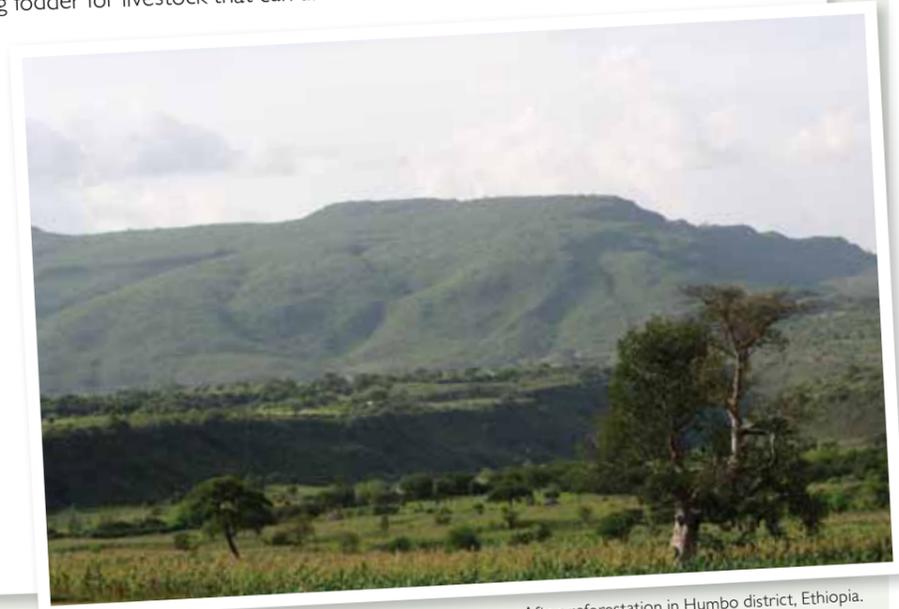
Over 90 percent of the Humbo project area is being reforested using low-cost forest regeneration. When farmers cut down trees for wood, a series of live tree stumps are left which each sprout multiple shoots. The farmers decide which of these shoots to keep and cut away the excess, giving the selected shoots room to grow. Also, newly established tree nurseries are raising over 450,000 seedlings each year to restore the forest where no living tree stumps remain.

### Benefits of forest restoration

The regeneration of the Humbo forest is producing benefits for local communities. It has resulted in increased production of wood and tree products, including honey, fibre, fruit and wildlife. Improved land management has stimulated grass growth, providing fodder for livestock that can also be cut and sold as an additional source of income.

Reforestation is also reducing land degradation, soil erosion and flash flooding.

One community member said: “We are too much happy. We never expected to see so much grass growing from these rocky, barren slopes, to see trees growing so quickly or to harvest firewood so early in the program.”



After: reforestation in Humbo district, Ethiopia.

## For You To Do!

Read the Ethiopia case study above and make notes under the following headings. Download the worksheet and table below at [worldvision.com.au/schoolresources](http://worldvision.com.au/schoolresources)

Problems

Responses

Benefits

# Mitigation

Mitigation involves reducing carbon dioxide gas emissions and stopping the problem of climate change from growing. In Ethiopia and Burundi, World Vision is introducing low carbon technologies to help communities burn less fossil fuel and prevent the destruction of existing forests.

## Solar cookers

The major challenges to food security in the Adama area of Ethiopia are erratic rainfall, low water holding capacity in the soil and high temperatures. In addition, traditional farming methods and low yielding crops have contributed to severe land degradation and soil nutrient depletion. For this reason, the women in the district have to walk for hours to fetch firewood for their household energy consumption. In addition, the women and girls face problems such as assaults, abduction and snake bites as they travel far from their homes.

In order to address this problem of wood scarcity, reduce carbon emissions and improve the lives of the women, World Vision provides solar energy cookers to selected community members. Among these community members is Fitale Urge, a mother of nine children.

Fitale is now free of the need to travel far from home and the side-effects of using fuel wood. "My respiratory organs and eyes do not hurt from the smoke anymore. I had to get my eyes treated for over four months at Adama Hospital where I spent a lot of money."

Fitale uses the solar cooker to cook various sauces, bake bread, roast beans, maize and coffee, and boil water, tea and coffee.



Fitale Urge using her solar cooker: "Every time I went around fetching fuel wood, I had to leave my children home alone. There was often no one to look after and provide them with food. The solar cooker has dramatically changed my life for the better. Many of the hassles involved in fetching and using fuel wood are now gone. It is very easy to use the solar cooker: The only thing I do is to turn it up when the sun gets hotter and cook the food."

Photo courtesy of Antonio Fiorente. ©2007 World Vision International



In January 2009, Australia's Minister for Foreign Affairs, Mr Stephen Smith, visited the World Vision agriculture and technology project in Adama, Ethiopia.



## Fuel efficient stoves

In Burundi, one of the world's poorest nations, World Vision has introduced fuel efficient stoves designed to use far less firewood than traditional cooking methods. The new stoves improve the safety and health of families and also protect trees in the area. Over three years, World Vision will target 36,000 households or about 180,000 people – many of these women.



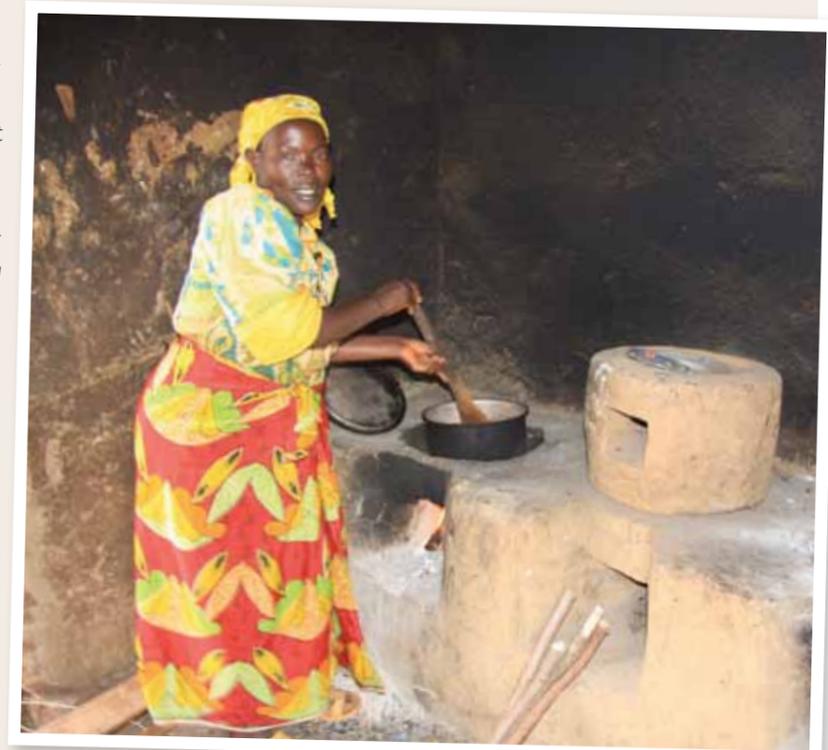
Ida is a farmer and mother of seven who now uses one of these stoves. You can meet her at home and see her stove on the **Get Connected 7 DVD - Ida's Story**.

*My family's favourite dish is rice, bananas, beans and vegetables. When I heard about the new stoves, I thought this was great news. Trees are not as numerous as they used to be. At the moment, we don't have many trees at all. When I heard that these stoves would help us use less wood and cut down less trees than before I was very happy.*

*The new stove means that I now use less than half of the wood I used before. The firewood that I used for just three days now lasts me for seven days. This is a very good way to protect the environment.*

*When I was using the traditional stove, I would have to cook from 2pm until 9pm. Now I start cooking dinner at 4pm and dinner is ready at 7pm. The old open stove required constant attention and we were all exposed to the smoke and fire much longer. I can now leave the food to cook and do other things like cleaning while my children are at school.*

*Now I even have some time to rest!*



Ida cooking with her new fuel efficient stove.

## DID YOU KNOW?

An average dishwasher in Australia emits more carbon dioxide in a year than three Ethiopians.

## For You To Do!

Download the worksheet and questions below at [worldvision.com.au/schoolresources](http://worldvision.com.au/schoolresources)

1. Reverse - List five things you would not expect to see if you lived in Ida's or Fitale's family.
2. Questions - List five questions you would like to ask Ida or Fitale.
3. What if? - List five ways that your life would be different if you lived in Ida's or Fitale's family.

# Adaptation

## Vietnam

Vietnam has been identified as one of five countries most vulnerable to rising sea levels. A one-metre rise would mean that much of the population that lives in the coastal region would have to move home, destroying agriculture and fishing livelihoods. Predictions of changing rainfall patterns and more extreme weather events will affect rice yields.

In 2007, flooding killed nearly 500 people and submerged 215,000 hectares of agricultural land.

Low-lying fields have been inundated with salt water, destroying crops. Rising temperatures have even encouraged a plague of pests.

"The warm weather has favoured the growth of the brown plant hopper insect," said Trai. "The pests have eaten up the plants and destroyed the rice crops."

In September 2009, over 170 people were killed and over 600 injured by Typhoon Ketsana in Vietnam. Then in November 2009, over 90 people were killed in floods caused by Tropical Cyclone Mirinae. Vietnam suffers annually from tropical storms and typhoons but these disasters have been some of the worst to hit the nation in recent years.

World Vision works with the Government of Vietnam to reduce the impact of natural disasters such as typhoons. This involves training community groups to plan for natural disasters and includes local organisations such as schools, fire brigades, and flood and storm committees in the planning process.



Training community groups how to respond to natural disasters in Vietnam.

## Kenya

The north of Kenya has faced such prolonged drought that local farmers are among the poorest people in the country. With the support of World Vision, a group of farmers has set up a demonstration farm that is helping to improve agriculture and provide training so farmers across the region can develop a wide range of skills.

The farmers are learning to adapt to their changed environment by using drought resistant crops, organic farming techniques, and improved water and soil management. The farmers now have an apiary to keep bees and produce honey and are learning new ways to better protect their environment.



Training farmers to grow drought resistant crops in Kenya.

## Philippines

A rise in sea levels in the Philippines, caused by climate change, could have dramatic effects on coastal communities. World Vision is working with local communities and governments to protect and better manage natural resources along the coastline. This involves rehabilitation of mangrove forests to protect the shoreline against sea surges and help nature to rebuild coral reefs.



Planting for regrowth of mangrove forests in the Philippines.

## For You To Do!



1. Watch the Kenyan Farmers clip on the Get Connected 7 DVD. What sort of help and support did these farmers need to help them adapt?

2. From the information on p.20-21, identify the country that is using the adaptation strategy. How will these strategies help people living in these countries?

COUNTRY	ADAPTATION STRATEGY
	regrowth of mangrove forests to protect the shoreline
	training farmers in the use of drought resistant crops
	training communities how to respond to natural disasters

# Action on climate change

Human beings are taking action on climate change. Increasingly, governments, the United Nations, non-government organisations, businesses and individuals recognise the need to respond in different ways.

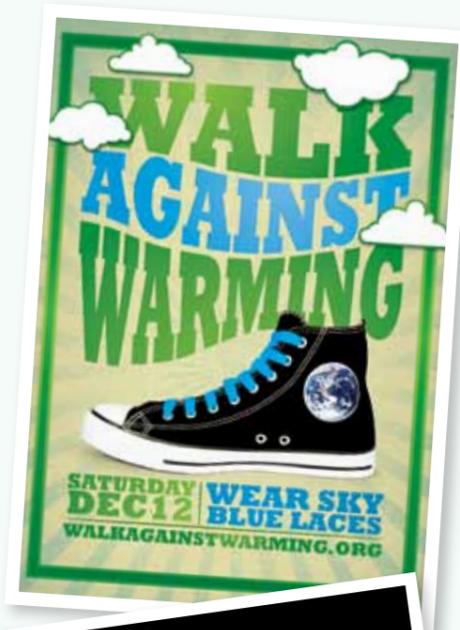


Hugh Jackman lends his support at UN Climate Week, September 2009.

**1.** People are speaking out to increase awareness of climate change and how it impacts the most vulnerable people in the poorest countries.

At the United Nations Climate Week in New York, actor Hugh Jackman spoke. "I'm honoured to join the many government, business and civil society leaders who are calling for urgent action to address climate change. I hope to be a voice for the billion people in developing countries who will be the hardest hit by changing weather patterns; by the droughts and floods that destroy their crops and threaten their food security."

Other Australians are speaking to their friends and writing letters to their Federal Members of Parliament.



**2.** Non-government organisations are organising petitions and rallies like Walk Against Warming and Earth Hour to encourage governments to take stronger action to mitigate the effects of climate change. The Australian Broadcasting Corporation (ABC) reported that up to 90,000 people turned out for the 2009 Walk Against Warming rallies in Australia's capital cities and regional centres.

**3.** Governments are seeking to develop policies to reduce carbon dioxide emissions. This is a hotly debated topic as there are different perspectives and opinions about how best to do this.

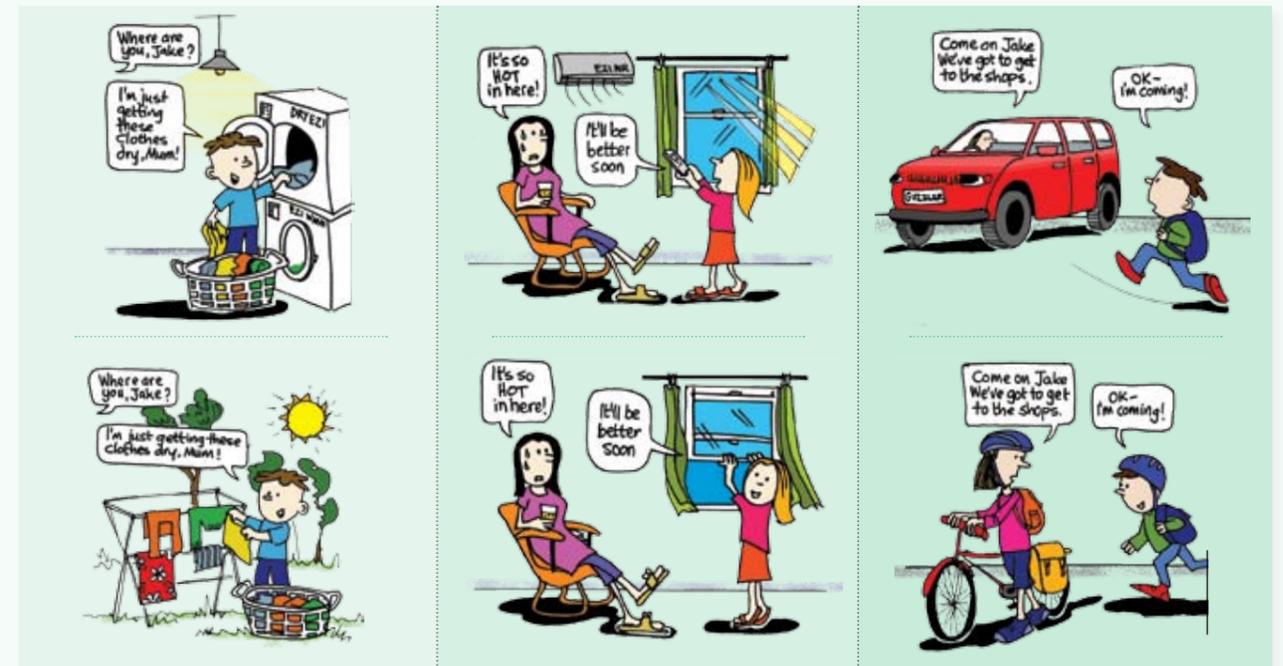


Thousands of Australians participated in the Walk Against Warming in 2009.



In 2009, 4000 cities in 88 countries participated in 'Earth Hour'.

**4.** Individuals, families and schools are making decisions to reduce their carbon emissions and interact with the environment in a more sustainable way. What are the sustainable decisions made in the cartoon below?



## DID YOU KNOW?

In 2009, the Australian Government committed \$150 million to climate adaptation strategies in vulnerable countries in the Asia-Pacific region.

## For You To Do!

### De Bono's Thinking Hats

-  **White hat:** List three facts that show the world is taking action and making progress on climate change.
-  **Red hat:** How does the world's response to climate change make you feel? Does it make you excited, concerned, confused, hopeful, angry, disappointed or something else?
-  **Black hat:** What might stop people from acting on climate change?
-  **Yellow hat:** What might help people to act on climate change?
-  **Green hat:** Suggest ways that you and your friends could respond to the issue of climate change.
-  **Blue hat:** Overall, how would you summarise the world's progress in responding to climate change?

# Different perspectives

What are different perspectives on climate change?

**1** It isn't fair! My country hasn't contributed to climate change but we'll suffer the most

Increasing sea levels will mean my people will have to migrate to other countries.

**2** Coal mining is important in generating 75% of our electricity and providing jobs for Australians

It is one of the reasons we are such a wealthy country

**3** We need to explore new technology that will help us live sustainably

This includes solar, wind and geothermal power.

**4** Climate change is a big election topic

People want to know how our party is going to respond

**5** It's getting harder to feed my children.

Longer droughts mean we are finding it hard to grow enough food and keep our livestock

**6** Climate change could undo the many years of good work we've done in developing countries

We have a responsibility to make good choices at home and school to better care for the environment

**7**

**8** Just when we are starting to develop our economy, you want us to stop using fossil fuels! India is one of the fastest growing nations in the world. Why should we stop future growth unless there's serious action by rich nations?

**DID YOU KNOW?**  
A laptop computer used for five hours each day generates around 40 kilograms of greenhouse gas each year.

## For You To Do!

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

_____ Australian politician	_____ Indian official	_____ School student
_____ Pacific Islander	_____ World vision staff	_____ Australian coal miner
_____ African mother	_____ UN scientist	
- Think of a question you would like to ask each of these people to find out more about what they believe. Have eight students take on these roles and attempt to answer some of these questions in an interview panel.

# Reflection and action

I was surprised to find out ... \_\_\_\_\_

The most interesting thing I learnt was ... \_\_\_\_\_

I'd like to know more about ... \_\_\_\_\_

I wonder if ... \_\_\_\_\_

I don't understand ... \_\_\_\_\_

As a global citizen, one thing that I would like to do is ... \_\_\_\_\_



Be a detective and find the answers.

Tip: Answers to the quiz are found in this issue.

- In the last 100 years, the population of the world has increased from 1.2 billion to nearly:
  - (a) 2 billion      (b) 5 billion      (c) 7 billion      (d) 10 billion
- The countries that emit the largest quantity of carbon dioxide are:
  - (a) USA and India      (b) China and India      (c) Japan and USA
  - (d) USA and China
- Learning how to live with climate change and protect ourselves from its effects is called:
  - (a) mitigation      (b) migration      (c) adaptation      (d) population
- Which country is **not** at risk of rising sea levels?
  - (a) Tuvalu      (b) Vietnam      (c) Kiribati      (d) Nepal
- Approximately how many children die of hunger and malnutrition every day?
  - (a) 25,000      (b) 20,000      (c) 10,000      (d) 5,000



## DOWN

- country with the largest per capita carbon dioxide emissions
- country with the largest carbon dioxide emissions
- the flowers and plants of a region
- the fall of rain, snow or hail
- oil and coal are examples of fossil \_\_\_\_\_
- stopping the problem of climate change from growing animal or plants species that have died out
- to move from one country and settle in another
- day to day condition of the atmosphere at a particular place
- a renewable form of energy provided by the sun
- the variety of life forms found on Earth
- forests help absorb the build up of carbon \_\_\_\_\_
- learning how to live with the effects of climate change
- abbreviation for Non-Government Organisation

## ACROSS

- the weather experienced by a place over many years
- the cutting down of forest trees
- an insect-spread disease affected by climate change
- the natural home of an animal or plant
- the animals of a region
- a Pacific island nation threatened by a rise in sea levels
- a way of viewing the world
- abbreviation for the United Nations
- a prolonged period of below average rainfall
- abbreviation for the World Health Organization
- condition of being badly nourished
- the rising temperature of the earth is called global \_\_\_\_\_
- one impact of climate change is an increase in natural \_\_\_\_\_
- the wearing away of soil caused by wind and rain

Answers to the quiz and crossword are available at [worldvision.com.au/schoolresources](http://worldvision.com.au/schoolresources)



# Jargon Busters

**Adaptation:** learning how to live with and protect ourselves from the effects of climate change.

**Advocacy:** written or spoken efforts to influence and bring about change on behalf of others.

**Biodiversity:** the variety of life forms found on Earth.

**Climate change:** changes in the global or regional climate due to increased carbon in the atmosphere.

**Fauna:** the animals of a region.

**Flora:** the flowers and plants of a region.

**Human rights:** the recognition that all people are equally important – regardless of age, race, gender, wealth, religion or place of birth – and are to be treated equally, fairly and with dignity. They are a statement of the basic freedoms and protections that belong to all people.

**Malnourished:** a condition of being badly nourished due to an imbalance in energy, protein and other nutrients.

**Mitigation:** the process of reducing carbon dioxide gas emissions and stopping the problem of climate change from growing.

**Migrate:** to move from one country and settle in another country.

**Non-government organisations (NGOs):** organisations like World Vision that seek to fight poverty, protect human rights and care for the environment.

**Precipitation:** rainfall