

# ABM Schools Project Education Supplement



**ABM** Anglican Board of Mission - Australia  
**Working for Love, Hope & Justice**



# Climate Change in

# Kenya



**Population:** 43.18 million (UN, 2012)

**Capital:** Nairobi

**Neighbouring Countries:** Somalia  
Ethiopia  
South Sudan  
Uganda  
Tanzania

- \* Integrated Food Security
- \* Sand Dams



Martha tends to her garden. © ADS-Eastern, 2013

In eastern Kenya, people experience long periods of drought so often that these conditions have become the norm. The Kamba people in south eastern Kenya have experienced at least five periods of drought in the last ten years due to climate change. Many families have no choice but to queue up at the local government office to receive support. Here they must register with the government to access this relief support (3kg of rice or maize for each family).

## Martha's Story

**M**artha and her family have been on the register for the last ten years. But proudly, last year she was able to walk to the office of the district area chief and ask for her family to be taken off this list. Martha is one of the beneficiaries of an **integrated food security program** that works with communities to minimise the effects of climate change and periodic droughts by introducing farming techniques that promote resilience.

ABM works in partnership with the Anglican Development Services (ADS Eastern) to help communities to improve their livelihood and increase their resilience to the effects of climate change. The integrated food security program works with men and women like Martha who have small farms, providing training in new agricultural techniques and teaching them environmental conservation measures to improve productivity and farming capacity.

The integrated food security program has also introduced drought-resistant seeds and drip irrigation for vegetable farms which are close to the rivers or sand dams (see next page) so that even with only very little water, farmers and their families can plant vegetables to eat and even to sell during drought periods.

Martha has a multi-storied garden (what some call a kitchen garden, pictured above) in her backyard planted with kale, spinach and other vegetables. She learned how to grow this food and look after it through the ADS (Eastern) program, supported by ABM. After receiving training in poultry and goat raising she is breeding these animals and taking care of an organic farming compost.

In Martha's village, a demonstration fishpond has been recently set up so that families can have fish throughout the whole year. This is in an area where previously there were no fish. The community received training in care and management of the large fish pond; skills they can replicate in other villages.



*A young man gathers fish from the pond © ABM/Julianne Stewart, 2013*

Each time the fish are harvested, Martha and the other community members get a share of the harvest, as well as a share in the income from surplus fish sold in the market.



*Kenyan women watch the sand dam at work after rain © ABM 2013*

## What is a Sand Dam?

A sand dam is a catchment that is similar to a traditional dam, however it differs in its ability to hold naturally filtered water in its sand sediment that can be harvested for up to six months after the rainy season has finished.

The dam wall is built across a river on bedrock with the intention of capturing a lake of sand, rather than solely water. This is because during intermittent rain, water and sand is washed downstream and contained by the dam wall so that when the rains stop, the accumulated sand is saturated with water. The sand has several very important functions. Firstly, it stores the rain water thus preventing it from evaporation. Secondly, it acts as a natural filter for the water, enabling it to be easily accessed and harvested from shallow (rather than deep) wells. It is a brilliantly simple solution that provides millions of litres of water that would otherwise run out to the ocean.

The sand dam and integrated food security program in Martha's village means that her community now has immediate access to clean water for domestic and agricultural use. They are no longer forced to walk for kilometres to draw water and can use this time and energy to engage in small business and farming activities.

Watch ABM's documentary, "Of One Heart & Mind". <https://www.youtube.com/watch?v=ODsBlKcPd7c>

**Q:** How many benefits of being agriculturally resilient can you list?

**W**hen the intermittent rains come in Kenya, many communities have found that the river quickly directs precious rain water downstream toward the ocean. Any remaining water either evaporates or is consumed before the next rain, and communities are left with dry riverbeds and no water.

Integrated Food Security Program Officer, Urbanas Matua remarks, "The people are very proud, very skilled. It's only the challenge of rainfall. When, like today, they do their farming and they harvest, the following season the rains might fail. It can take three or four seasons when it has not rained, so the farmers who are very innovative and very capable, they go back to their original situation of hunger and starvation. And this has also affected the children, to an extent, and the malnutrition, especially in [Kenya] is very high."

ADS (Eastern) addressed this problem by implementing a community owned and driven project to build **sand dams**. This project builds on strengths each community already have - such things as willpower, determination, sand, stones - the community all participate in some way to build a dam. One physically disabled woman exclaimed proudly, "I helped build this sand dam; I carried one stone at a time down to the river."

**Q:** Why is it important that the planning and implementation of infrastructure such as sand dams and irrigation systems are community-driven?



# Climate Change in

# The Philippines



**Population:** Approximately 100 million

**Capital:** Manila **Number of Islands:** 7 107

- \* Sustainable forestry
- \* Rain catchment basins
- \* Drought resistant farming



Mountain terraces in the Philippines © ABM 2013

Developing countries are the ones hardest hit by climate change and, in the Philippines, the effects are already beginning to be seen and felt. Poor people, most of whom live in rural areas, bear the brunt of weather extremes. In the Philippines, extreme weather is becoming the norm and resilience is the key to survival.

Read on to find out how the *absence* and *abundance* of rain is being managed by ABM's partner, the Episcopal Church in the Philippines (ECP).

## Extreme Weather Adaption

In late 2013, Typhoon Haiyan destroyed and damaged the homes of over 16 million people and killed more than 6 000. Typhoons regularly hit the country in October every year and cause landslides and flooding. Whenever there is a downpour, massive flooding submerges Manila, the Central Plains and other low-lying areas. Rain also causes landslides and erosion in the mountain regions that are supposed to be free from flooding. The sheer volume of rain water is often too much for the present state of vegetation in these regions. Human settlements and years of revenue-producing activities have further damaged the environment in these areas.

In order to reduce the impact of climate change, the ECP is working with farmers in the Philippines to plant tens of thousands of trees as part of a **sustainable forestry program**. This will help prevent flooding, erosion and also decrease the amount of carbon in the atmosphere.

**Q:** What other benefits might a sustainable forestry program bring to communities?



Pangao reforestation project © ABM/Brad Chapman 2012

Watch ABM's Assets-Based Community Development documentary at:

<https://www.youtube.com/watch?v=QCS7gg4uPD0>

**B**ecause of such an abundance of rain in the Philippines, water is not considered a precious resource and is often not managed as such. We've seen that excess rain causes erosion and flooding, but what can be done about this?

Environmental lawyer Antonio Oposa Jr says the reason for flooding is quite simple: excess water has nowhere else to go. "We have paved with concrete all available lands—including wetlands, low-lying and flood-prone areas—and turned them into subdivisions and commercial centres. In other words, where there used to be water we built human settlements."

The answer to flooding, and even to landslides and erosion in mountain areas, is also really simple: give the excess water a place to go. And this can be done, says the ECP's National Development Officer Attorney Floyd Lalwet, by building **rain catchment basins**. The purpose of such basins is to manage excess water to control flooding and landslides and similarly to preserve water for use during the dry months and as well to replenish the depleted groundwater table (aquifer).

*"To prevent it from becoming a breeding ground for mosquitoes, populate it with fish. Then it becomes a source of protein. Also, frogs (which eat mosquitos by the hundreds) will normally populate the pond."*

*"To prevent the water's oxygen from being depleted, put water lilies and hyacinth—nature's amazing water cleansing and aeration mechanism. The roots of the hyacinth suck in the dirt from the stagnant water and release dissolved oxygen."*

*"Kangkong (swamp cabbage) can also be planted in the shallow portions of the pond. Other vegetables and fruit-bearing trees like papaya and banana can also be planted along the banks. **There is no reason why one in every five of our people should go hungry.**"*

*"Bigger ponds and mini lakes also provide a place for inexpensive recreation (fishing, boating, even swimming) and, of course, a ready source of food."*

*"These reservoirs will provide a source of water during the dry season."*

*"Oh, by the way, it will also prevent flooding."*

Rain catchment basins can divert rainwater and minimize the runoff while at the same time saving irrigation water for use during the dry months also in view of the growing shortage of water supply during summertime.

Rain water is a precious resource, an asset that can be mobilized for community development and yet at the same time the projects shall enable communities to adapt to the adverse effects of climate change.

Information provided courtesy of Attorney Floyd P. Lalwet

ECP National Development Officer

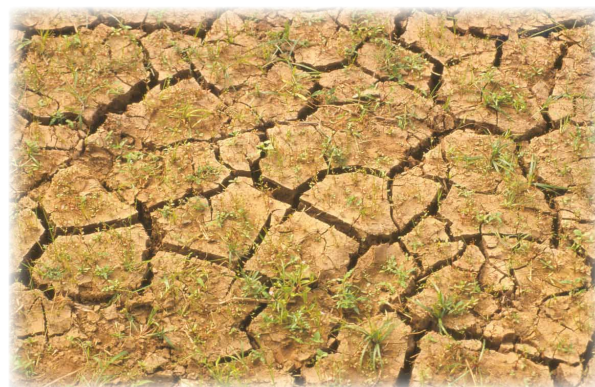
**Q:** *Can you think of any other ways that rain catchment basins could benefit communities?*



A Landslide warning sign in the Mountain Province. © ABM/Don Brice

**E**ven though much of the Philippines experiences rain in abundance, drought is still a harsh reality in some regions. Another part of the climate adaptation strategy is to promote sustainable organic farming and teach **drought resistant farming** methods. Farmers who once harvested abundant rice crops and corn have been forced to change to more drought resistant crops in recent years.

The Filipino Government reports that warmer temperatures are experienced most in the northern and southern regions of the country. The regions that have warmed the most (Northern Luzon, Mindanao) have also dried the most. These are the areas in which the ECP is concentrated – among rural communities.



Drought-parched rice paddy. © ABM/Don Brice



## Millennium Development Goals



The eight Millennium Development Goals (MDGs) are part of the Millennium Declaration of the United Nations which was signed in 2000 by all of the members of the United Nations. The MDGs have galvanized unprecedented efforts to meet the needs of the world's poorest by governments, non-government organisations, multi-lateral institutions, religious organisations, and individuals.

ABM is working with the government, non-government organisations and our Partners in Australia and overseas to contribute to the achievement of the MDGs, through programs in water security, literacy and education, primary health care, sustainable agricultural development, and HIV/AIDS prevention and treatment. The stories in this education supplement reflect the grass root activities that are taking place in the effort to achieve these goals.

In addition, ABM is exploring ways of reducing their own environmental footprint, and developing global partnerships which assist in the alleviation of poverty.

You can find out more about the MDG's at <http://www.un.org/millenniumgoals/>

## Thinking Deeper: Discussion Questions

What do you know about the connections between Australia and the Philippines?

What do you know about the connections between Australia and Kenya?

What do you know about the Millennium Development Goals?

How does climate change relate to the Millennium Development Goals?

Other than Goal 7, which goals might climate change impact on?

What difference to climate change can Goal 8 make?

After 2015, do you think Goal 7 should be included in a new set of goals? Why or why not?

How does climate change relate to development challenges such as food and water security and conflict?

How might these challenges be overcome?



### Video Resources

Watch ABM's Assets-Based Community Development documentary in the Philippines at:

<https://www.youtube.com/watch?v=QCS7gg4uPD0>

Watch ABM's video documentary on the integrated food security program in Kenya, "Of One Heart & Mind" at:

<https://www.youtube.com/watch?v=ODsBkCpd7c>

# ABM **Anglican Board of Mission - Australia** **Working for Love, Hope & Justice**

ABM is the national mission agency of the Anglican Church of Australia working with overseas and Aboriginal and Torres Strait Islander people and communities. We have a holistic view of God's mission. We work with Anglican Church partners and others to see lives empowered and transformed spiritually, materially and socially. We help the Anglican Church and the wider community realise and respond to the invitation for all to be a part of God's hope for the world.

For more information about ABM see <http://www.abmission.org>