



INTERNATIONAL  
**ROCHA**  
Conservation and Hope



## Climate change changes everything

How Ugandan women are reducing deforestation

Canada: Dr Katharine Hayhoe on motivating climate action

Why chop down French oak trees?

Europe: Helping churches and schools to understand climate change

Kenya: Studying coral reefs in warming seas

A Rocha at COP21 in Paris

# COORDINATING A CHRISTIAN VOICE IN PARIS

by Barbara Mearns, Editor, A Rocha International

From 30 November to 11 December, the UN Climate Change Conference, COP21, will take place in Paris. This conference is crucial: the world's governments need to agree to reduce greenhouse gas emissions and keep global warming below 2°C.

We will be taking part! Climate change is not just a temporary concern for A Rocha. Climate change affects every living thing: species distribution on land and sea; migration patterns of birds, insects and other animals; and the timing of plant germination, including, of course, our crops.

Therefore, climate change affects everything A Rocha does: our research, our education programmes, our community training activities – and you can read about just a few of these in the following pages.

Dr Jean-Francois Mouhot, Director of A Rocha France's Les Courmettes centre, will be officially representing A Rocha France and the French evangelical church at COP21.

Several A Rocha International team members will be in Paris (including Samuel Chiu, East Asia Projects Coordinator, who will be reporting on events to the Chinese-speaking communities in Canada and East Asia) alongside colleagues from European teams. Together with Tearfund and the Lausanne Movement, A Rocha will bring a Christian voice to the climate discussions in various ways, including a conference on 5 December, culminating in the evening with keynote speakers Bishop Efraim Tendero, Secretary General of the World Evangelical Alliance and Dr Katharine Hayhoe. We also hope to provide a base for gatherings, prayer vigils and worship services. See [arocha.org/COP21](http://arocha.org/COP21) or A Rocha/Lausanne Partnership for COP21 on Facebook for details.

We'll be building links between many of the Christian organizations present, not just to help coordinate our messages in Paris, but to strengthen our global impact in the years ahead.

We know that many A Rocha supporters are fasting (A Rocha supports Fast for the Climate [www.fastfortheclimate.org](http://www.fastfortheclimate.org)) praying and raising awareness of the need for rapid action. If you are not already involved, please join us!



*'God of love, show us our place in this world, as channels of your love for all the creatures of this earth, for not one of them is forgotten in your sight.'*

*Enlighten those who possess power and money that they may avoid the sin of indifference, that they may love the common good, advance the weak, and care for this world in which we live.*

*The poor and the earth are crying out. O Lord, seize us with your power and light, help us protect all life, to prepare for a better future, for the coming of your Kingdom of justice, peace, love and beauty. Praise be to you!*

A prayer of Pope Francis from his Encyclical, *Laudato Si*.

# Dr Hayhoe in Paris



'Let's use love to consider how our actions are impacting other people,' appealed Dr Hayhoe in Vancouver. (Peter Quek)

Dr Katharine Hayhoe – one of TIME magazine's 'Top 100 Most Influential People' – will speak at our Paris conference. At the *Earthkeeping: A Climate for Change* A Rocha Canada / Regent College conference in May, addressing an audience of over 800, she did not shy away from the hard facts. Climate is changing, she contended, because of our actions. Therefore, our choices matter. We can choose to lessen our impact on the climate, can choose to adapt to the effects such as drought, rising sea levels and storms of increasing intensity ... and we can choose the degree to which we will suffer.

'How do we determine where to go with these choices?' asks Dr Hayhoe. 'How do we determine what's too much suffering? How do we determine what's enough mitigation? Science doesn't answer those questions.'

She continued, 'Here's the problem. When we hear people talk about climate solutions, they use words that raise fear in people. Fear about change. Fear about economic hardship. Fear about taxes.' For Dr Hayhoe, this is where faith and values come in. Here she turns to Jesus' call to love our neighbour.

'Let's use love to consider how our actions are impacting other people,' she concluded, 'and let's move forward not in fear, but in power – recognizing that we can accomplish great things.' You can listen at [www.arocha.ca/climate-for-change/](http://www.arocha.ca/climate-for-change/)

Caroline Pomeroy, Director of Climate Stewards ([www.climatestewards.org](http://www.climatestewards.org)) and David Hughes, Chair of Climate Stewards, will be cycling to Paris as part of the Pilgrimage2Paris. Climate Stewards is part of the A Rocha network, encouraging us all to reduce our carbon footprint as much as we can and offset the rest. Caroline says, 'We want to add our voice to the wave of concern from people of all faiths and none as we seek to persuade our leaders to agree a binding climate deal.'



# Why chop down French oak trees?

by Dr Chris Walley, Mediterranean Science Conservation Coordinator

If trees absorb CO<sub>2</sub>, why were nearly 20 A Rocha volunteers cutting down three of them in the south of France this July? Although everybody recognises that trees are incredibly important at absorbing carbon dioxide, there is a real lack of knowledge on exactly how much they absorb and where it is held. In a world where tree-planting may help reduce humanity's prolific emissions of CO<sub>2</sub> this is not a trivial issue. As part of a long-term project, A Rocha's Conservation Science Director, Dr Martin Kaonga, is studying the amount of carbon stored in Holm Oak *Quercus ilex* in a variety of settings. A Rocha France's intensely wooded 600 hectare Courmettes estate, which ranges from just over 300 metres to 1,250 metres in altitude, is ideal for studying exactly how much carbon is stored in this important Mediterranean species.



Precisely determining how much carbon is stored and where is no easy matter. A small number of trees are selected at random, measured precisely, cut down and then separated into trunk, branches, twigs and leaves. The collected material is weighed and sent off for precise analyses. These results will then be analysed using a variety of complex formulae in the hope of producing equations that will allow others to gauge the amount of carbon in Holm Oak woods far more easily.

It sounds straightforward, but it needs to be done carefully and takes a lot of effort: hence all those volunteers. The leaves are the tricky bit; there's no easy way of removing them from the twigs other than by pulling them off one by one. It's slow, steady work and it took our volunteers, from nine countries, four full days of continuous labour to do the sampling of three trees. Mind you, if you have to do this, there are far worse places to work than a pleasantly warm Mediterranean wood high above the Côte D'Azur and there are far worse places to stay than the Les Courmettes château. Taking trees apart to find out what they are made of may not be the most dramatic kind of science but it's terribly important. And everyone who took part in this week seemed to enjoy themselves.

Above: A multinational team of volunteers undertook carbon studies at the A Rocha France Courmettes centre in July. From left: two Italians, one Chinese, one Swiss, one Belgian and two Dutch. (Chris Walley)

# Bringing together Pacific and Kiwi church leaders

In August, A Rocha Aotearoa / New Zealand partnered with Tearfund NZ, Oxfam and 350.org to bring two Pacific Island church leaders to speak to New Zealand church leaders.

Several hundred people listened as Rev Tafue Lusama told harrowing stories of how cyclones, sea levels and changes to crops and fisheries are already impacting nations across the Pacific: 'Our elders can no longer predict weather patterns, and salt water not only encroaches on land but rises directly out of it, destroying our croplands.'

Dr Murray Sheard, A Rocha Chair and Tearfund Education and Advocacy Manager, says climate change is now undermining development gains. **'Since 1990, people have lifted themselves out of poverty faster than ever before. But the more we succeed on development, the more we fail on sustainability. That's a recipe for disaster, and Pacific peoples are the canary in the coal mine.'**

Three follow-up actions have sprung from the tour. In breakfast briefings, the Pacific leaders spoke church leader to church leader, asking them to stand in solidarity. Consequently, in each city, a steering group is forming to take action together. In evening public lectures, participants signed postcards to their bank asking for divestment from loans to oil companies. Churches participating in a pilot A Rocha / Tearfund partnership called 'Rich Living' will be sent study materials to help them audit and decrease their carbon emissions and learn about the care of creation.



Teachers at Cruzinha, Portugal. (Quarter Mediation)

## Helping schools to understand climate change

A Rocha is helping young people in many countries to get to grips with climate change. In Portugal, for example, it's part of the 8th grade national science curriculum, so when students visit the A Rocha study centre they not only learn about renewable energy, but see migrating birds in the hand, and discover how these warblers, thrushes and chats can be affected. A Rocha Portugal has also been training science teachers: this year a group from Finland, Romania, Estonia, Netherlands and Portugal came specifically to learn about climate change. Here, some are being taught the relevance of our long-term butterfly and moth monitoring, which can indicate changes in flight periods, as well as the distribution of species.

Isabel Soares, A Rocha Portugal

# Studying coral reefs in Kenya



Hannah (Robert Sluka)



Hannah's research suggests that the Freckled Hawkfish *Paracirrhites forsteri* (above) is less likely to be affected by coral bleaching than the Arc-eye Hawkfish *Paracirrhites arcatus*. (Nick Hobgood / Wikipedia)

The health, and even the survival of coral reefs, is threatened by warming seas. A Rocha Kenya's field study centre, Mwamba, on the beach beside Watamu Marine National Park, is an ideal site for coral reef research. So far, the focus has been on documenting the park's biodiversity, especially habitats not already studied: the rockpools, beaches and seagrass beds. Reef research has examined its resilience to climate change and how warmer temperatures may impact the corals and associated organisms.

Hannah Hereward spent six months at Mwamba doing dissertation fieldwork and recently graduated with an Honours degree in Wildlife Conservation. She writes, 'I was studying several species of hawkfish, which, as their name suggests, perch and pounce on their prey. Some hawkfish use hard coral as a perch, so I was assessing the extent to which these species might be affected by coral bleaching. I learned a huge amount about marine research at Mwamba, and also benefited by living and working with other people 24/7. It was an amazing time!'

Hannah has just begun a marine internship with A Rocha UK and says, 'For two years I'll be studying part-time for my Masters in marine biology at Plymouth University, whilst carrying out inter-tidal zone studies at Lee Abbey, Devon, with A Rocha.'

## Empowering rural Ghana

Most rural areas in Ghana do not yet have a reliable electricity supply and since 2012, there have been power blackouts, even in Accra. There is an urgent need for a consistent, clean, inexpensive energy supply. It's a particularly important issue for secondary school students, who cannot easily study in the dark evenings without decent lighting.

A Rocha Ghana has therefore begun a new programme to provide sustainable energy in homes and schools. The pilot project is underway at six Senior High Schools, in Kumasi and Damongo, which run wildlife conservation clubs. Initially, the young people are learning about energy issues and taking part in energy-saving projects. Two teachers and five students at each school will soon be trained in the construction of solar lighting systems which can also be used to charge mobile phones and power radios.

The next stage will be to train 12 technicians to install, repair and maintain solar lights in their communities. They will also be able to set up renewable energy centres where local people can recharge phones, laptops and other gadgets. We hope it will transform life in these villages and that the technology will spread.



(A Rocha Ghana)

# How Ugandan women are reducing deforestation

Dylis Ndibaisa, Research & Conservation Officer, A Rocha Uganda

Charcoal production is a major cause of deforestation in Africa, but A Rocha Uganda is training some of the poorest families in Kampala to reduce their use in three ways which bring immense benefits to them and their families.

Since 2012, the team has taught over 350 people to make briquettes (used to boil water and cook) from free waste materials, such as *matooke* (green banana) peelings, charcoal dust, clay soil and cassava flour. These replace traditional charcoal, and as a result, more income is available for other essentials and there is less decomposing rubbish around homes.

A Rocha has also trained nearly 200 people in making fireless cookers: insulated baskets in which pre-heated food continues to cook, reducing the amount of fuel needed.

However, the biggest impact has been through the team's distribution of over 600 bio-sand water filters, mostly in Kampala. These eliminate the need to boil water over charcoal to make it safe to drink. As five families, on average, use each filter, about 15,000 people are drinking this safe water. The benefits are multiple! There is poverty reduction: £720,000 saved in charcoal costs and medical fees. Educational spin-offs, because healthy children are less often absent from school. For women, it means a huge liberation of time: 15 days saved per household per year!

And the environmental impact? For every five families, 60 fewer bags of charcoal are bought each year. For 15,000 people, that's 36,000 bags. One tree needs to be cut down to make two bags: so at least 18,000 trees are still growing, still providing food and shelter for wildlife, because of the filters.



African forest which has been cleared for charcoal production. (A Rocha Kenya)



This little girl in Namungoona can expect better health because her family has a bio-sand filter. (A Rocha Uganda)



Emume Salome with her fireless cooker. (A Rocha Uganda)

Emume Salome, aged 33, is a tailor who lives with her husband and eight children. Her husband returns home late at night, and in the past, she would keep hot water on the stove for his bath, which used a lot of charcoal. Now, she puts the hot water in a jerry can and places it in the fireless cooker, along with his dinner. Their house is safer too. She says, 'I am no longer scared about a fire when I go to church, because the food is cooked half way and left in the fireless cooker! It has also enabled me to save time and concentrate on my tailoring business.'

Angella Galiwango (on front cover) aged 52, is a widow who lives with four children and four grandchildren. She was taught to make briquettes by a friend, who was trained by A Rocha. Angella says, 'My briquettes burn longer and my expenditure on normal charcoal has been reduced by half.' Now Angella, in turn, hopes to train other women.



**PETER & MIRANDA HARRIS,**  
Co-founders of A Rocha ask:

# Could you help us raise up a new generation of A Rocha leaders?

'We're inspired by the passionate young Christians we meet around the world who are caring for creation. However, they need encouragement, training and experience. We yearn to bring this generation forward as one of A Rocha's gifts to the conservation world, so we ask for your support to make this possible.'



'In La Libertad we're restoring dry forest: many species depend on it. Local people of all ages, from youngest to oldest, water the little trees and care for them. It's wonderful.'

**Camille Allan, National Director,**  
Peru

Camille (Melissa Ong)



'I have a degree in theology and know what the Bible says about stewardship, so I appreciate the chance to be part of A Rocha and put theory into practice. We face radical changes in our climate and our environment, but I find hope in A Rocha. For me, that is very important.'

**Mikko Kurenlahti,**  
Board member and part-time team member, Finland

Mikko (Melissa Ong)

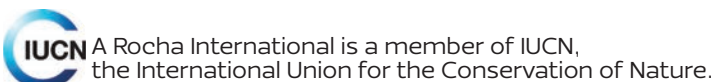


Please visit [www.arocha.org/generations](http://www.arocha.org/generations) to hear more from our young leaders and make a gift online. Or give us a call and we'll be happy to advise you on other ways to support us.



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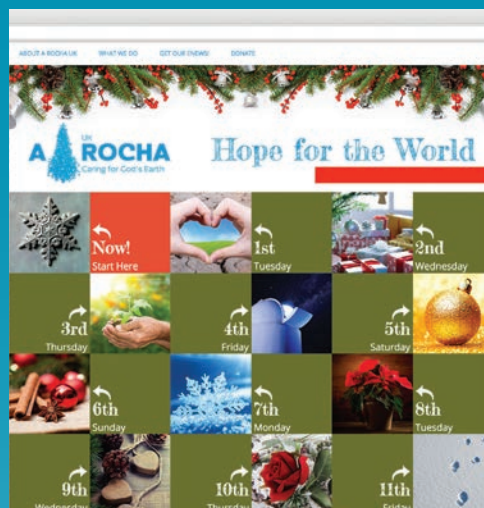
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# HOPE FOR THE WORLD – REGISTER NOW!

**Q.** What do you get if you cross the upcoming Paris Climate Change talks with Advent?

**A.** A Rocha UK's Fantastic online Advent Calendar!



The calendar celebrates the hope we have in looking forward to the birth of Christ, in the immediate context of the need for a good outcome from the Paris talks to provide hope for our world.

Key figures from the worlds of conservation, church, politics, business and development each contribute a short but significant Advent message in a two or three minute podcast, and text. We hope it will be something to start each day, an opportunity to reflect on the gift of Christ that Christmas celebrates, and to pray for our world.

Don't miss a day. Go to [www.advent.arocha.org.uk](http://www.advent.arocha.org.uk) and register for your daily email notification from 1 December. We look forward to sharing this journey together.

Ruth Valerio, A Rocha UK

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Cover photo: Angella Galiwango is one of many women in the Kampala slums who, thanks to A Rocha Uganda, can now make briquettes from waste products, halving their use of charcoal from woodland. (A Rocha Uganda)

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