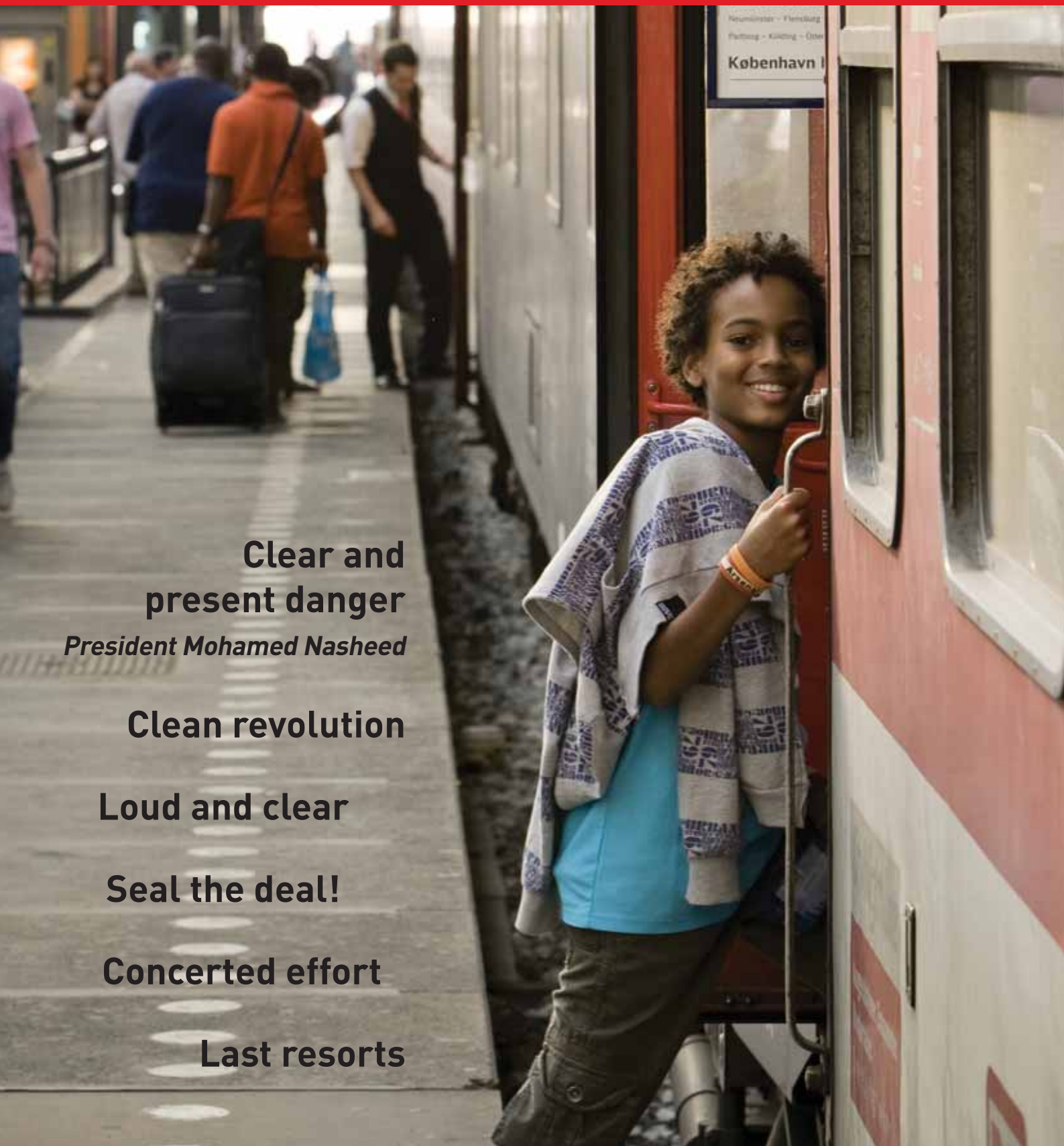
The UNEP Magazine for Youth

TUNZA

UNEP

for young people · by young people · about young people

The road to COPENHAGEN



Clear and present danger
President Mohamed Nasheed

Clean revolution

Loud and clear

Seal the deal!

Concerted effort

Last resorts

TUNZA
the UNEP magazine for youth. To view current and past issues of this publication online, please visit www.unep.org

United Nations Environment Programme (UNEP)
PO Box 30552, Nairobi, Kenya
Tel (254 20) 7621 234
Fax (254 20) 7623 927
Telex 22068 UNEP KE
E-mail uneppub@unep.org
www.unep.org

ISSN 1727-8902

Director of Publication Satinder Bindra
Editor Geoffrey Lean
Special Contributor Wondwosen Asnake
Youth Editors Karen Eng, Joseph Lacey
Nairobi Coordinator Naomi Poulton
Head, UNEP's Children and Youth Unit Theodore Oben
Circulation Manager Manyahleshal Kebede

Design Edward Cooper, Ecuador
Production Banson
Front cover photo Robert vanWaarden

Youth Contributors Devin Aviugana, Canada; Veni Sevia Febrianti, Indonesia; Kyle Gracey, United States of America; Ruchi Jain, India; Whit Jones, United States of America; Ely Katembo, Democratic Republic of the Congo; Anna Keenan, Australia; Simon Sizwe Mayson, South Africa; Martin Metz, United States of America; Wendy Miller, Australia; Desideria Murti, Indonesia; Gerard Penecilla, Philippines; Michael Plesner, Denmark; Alexander Readford, Australia; Dan Scott, New Zealand; Sho Scott, Japan; Juan Carlos Soriano, Peru; Gemma Tillack, Australia; Jake Voelcker, United Kingdom.

Other Contributors Franny Armstrong; Jane Bowbrick; Mark Lynas; William Malpass, Bayer; Mohamed Nasheed; Fred Pearce; Radiohead; Rosey Simonds and David Woollcombe, Peace Child International.

Printed in the United Kingdom

CONTENTS

Editorial 3
A warming world – for real 4
Seal the deal! 5
Clear and present danger 6
Concerted effort 8
What can wedge analysis do for us? 8
Facing extinction 10
Loud and clear 12
TUNZA answers your questions 14
Plastiki 15
Beyond learning 16
REDD for go! 16
All change 17
Clean revolution 18
Last resorts 20
Six degrees 22

Partners for Youth and the Environment

UNEP and Bayer, the German-based international enterprise involved in health care, crop science and materials science, are working together to strengthen young people's environmental awareness and engage children and youth in environmental issues worldwide.

The partnership agreement, renewed to run through 2010, lays down a basis for UNEP and Bayer to enlarge their longstanding collaboration to bring successful initiatives to countries around the world and develop new youth programmes. Projects include: TUNZA Magazine, the International Children's Painting Competition on the Environment, the Bayer Young Environmental Envoy in Partnership with UNEP, the UNEP Tunza International Youth/Children's Conference, youth environmental networks in Africa, Asia Pacific, Europe, Latin America, North America and West Asia, the Asia-Pacific Eco-Minds forum, and a photo competition, 'Ecology in Focus', in Eastern Europe.

Just say no!

We all agree that recycling is a good thing. But while transforming, say, a newspaper into an egg carton saves on pollution, landfill and raw materials – not to mention carbon emissions – recycling processes still gobble up precious resources like energy and water. And no matter how diligently we recycle, it's still just a dent in the mountain of waste we're constantly generating.

The concept of precycling helps tackle the problem of over-consumption before it begins, avoiding the need to recycle in the first place. Precycling means stopping to think, before you buy: Do I really need this item? What effect did/will its production have on Earth? What do I already have that might be altered? And so on. Eventually, if enough people stop buying stuff, other people will have no incentive to make it.

Here are a few ideas to start with:

• Try to buy products with minimal packaging, and opt for recyclable packaging – paper and glass rather than plastic, for example. Let manufacturers and shops know you prefer less packaging.

• Carry reusable shopping bags and smaller cloth bags for weighing produce.

• Try mending or buying second-hand items before purchasing a new product. If you must buy new, go for high quality, so that it lasts longer.

• Rent or lease products, especially appliances and electronics, rather than buying them. Research has shown that when responsibility for products ends with the manufacturers, they have an incentive to make them more sustainable.

• Carry a kit with utensils, cloth napkins, and a drinks bottle and/or cup when going out to avoid producing waste when eating out.

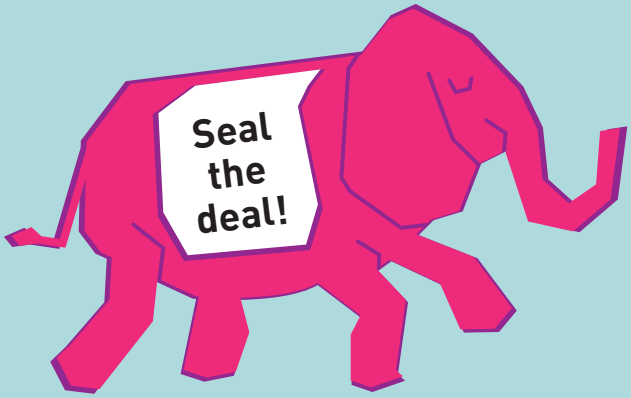
• A borrower be: pool some tools, toys or books with your neighbours and start a community lending library.

• Buy food in large sizes or in bulk to decant into smaller reusable containers as needed. This saves on individual packaging and money.

• Grow your own vegetables and herbs.

Need inspiration? Watch the 20-minute animated film *The Story of Stuff* **(www.storyofstuff.com)**, a look at the realities of the production, consumption and waste cycle.

EDITORIAL



Just three short months are left of what may well prove to be the most important year in history, culminating in what is probably the most crucial international meeting to date. For the Copenhagen Climate Change Conference, which takes place in December, and the negotiations that are preceding it all year, will decide the future both of humanity and of the planet itself. Reaching an ambitious and comprehensive agreement there on reducing global emissions of carbon dioxide (CO_2) and other greenhouse gases may well be the last chance that the world has of avoiding not just dangerous, but catastrophic, climate change.

The world financial crisis has made reaching agreement harder, as national leaders think of their economies first. But in fact it should make it easier, for the answers to the financial and climate crises – and to the energy crisis fast coming up behind them – lie in the same direction. Clean technology, and particularly renewable energy, offers the most promising prospect for producing a sustainable and growing world economy. It already constitutes a $4.5 trillion market, while last year investments in renewable energy for the first time exceeded those in fossil fuels and nuclear power worldwide. Green technologies are also labour-intensive, providing plenty of good employment, much more than is offered by more traditional technologies. The International Labour Organisation says that projected investments in renewable energy alone could create another 20 million jobs by 2030, with another 12 million arising from producing biomass for energy and related industries.

For the last year UNEP has been calling for a Global Green New Deal, where stimulus packages are targeted at providing jobs and sustainable growth through greening the world economy. Some countries, most notably the Republic of Korea, have wholeheartedly embraced the concept and others have devoted varying proportions of their recovery packages to it. But much more needs to be done, and a strong enough agreement in Copenhagen could itself provide an enormous stimulus by pointing countries and economies towards a new, low-carbon future. Governments must 'seal the deal' on climate in December, and then move on to building a prosperous green future.

A warming world **for real**

Banson

Alex Webb/Magnum Photos

Last year was one of the 10 warmest worldwide since modern records began more than 150 years ago. The Arctic sea ice shrank to its second lowest extent on record, only just failing to beat the previous year.

South America suffered its worst weather disaster of recent times, with flooding affecting 1.5 million people in Brazil. Heavy rains drove some 10 million people in India from their homes. The United States was hit by Hurricane Ike, its third most destructive one after Katrina in 2005 and Andrew in 1992. And Cyclone Nargis, which devastated Myanmar, was the worst to hit Asia for 17 years.

By contrast, Argentina, Chile, Paraguay, Portugal and Uruguay all experienced their worst droughts in decades. And Australia has now been gripped by one for an unprecedented 12 years.

In other words, it was a pretty normal year in what is now a rapidly warming world. We are already getting more of the same this year, and can expect it next year and for all the years thereafter, as climate change brings more storms, droughts and floods and changes the face of the Earth.

It is all happening faster than anyone expected. Take that sea ice, for example. Professor Mark Serreze of the US National Snow and Ice Data Center – one of the world's leading authorities – says that if you had asked him just two years ago how long the ice would last before it all melted in summer, he would have said 2070 or 2100. Now he estimates that the Arctic will be ice-free in September as early as 2030, and some expects reckon it could happen by 2013.

It was 2007 that changed his mind. That year the ice cap abruptly shrank 25 per cent more than its previous record low, taking it down to levels that had not been expected to occur before 2050. And, as we have seen, last year was not much better.

The Greenland ice sheet is also melting much faster than expected as its glaciers have started racing towards the sea. So are mountain glaciers worldwide – their average rate of melting and thinning doubled in just two years between 2004 and 2006. The ice shelves that border the Antarctic Peninsular are rapidly disappearing, and the massive ice sheets that cover the 'frozen continent' are also beginning to melt. Partly as a result of all this, the world's seas are now rising twice as fast as they did, on average, during the 20th century.

And disturbing changes are beginning to take place in the hottest parts of the world as well as in the coldest ones. The tropics, for example, are expanding, having widened by about 220 kilometres since 1970. This is threatening to drive deserts into fertile ground in more temperate areas. There are signs, for example, that the northern edge of the Sahara may leap across the Mediterranean into southern Europe.

Banson

Stuart Franklin/Magnum Photos

All this is happening after comparatively modest increases in temperature from global warming. So far these have only risen by about 0.7ºC. But we are already committed to much more warming because the greenhouse gases that we have already released require decades to take full effect. In fact, our past emissions have already committed us to another 0.5ºC of warming, even if we stopped all emissions of greenhouse gases tomorrow. That, some experts believe, would be enough to bring severe drought to the US grain belt, which helps feed more than 100 countries around the world.

Indeed, Britain's prestigious Hadley Centre for Climate Prediction and Research has forecast that drought will spread across half the Earth during the 21st century, with extreme drought affecting a third of the planet, and agriculture becoming impossible in many currently productive areas.

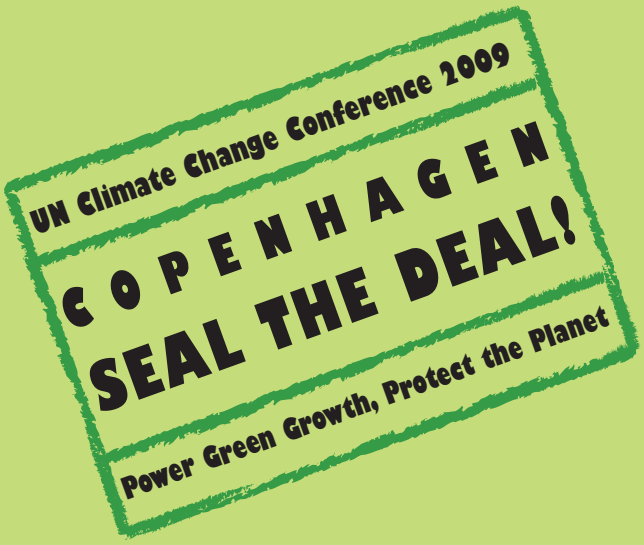
Of course, an immediate halt in emissions is impossible, and so temperatures are bound to go on rising, bringing us perilously close to the 2ºC that scientists estimate is the absolute maximum that should be permitted if the world is to have a fighting chance of avoiding catastrophic climate change (for projections of the possible consequences of each degree of temperature rise see pages 22-23).

Whether the world succeeds in limiting the increase to this crucial maximum will largely depend on the outcome of vital negotiations in Copenhagen in December 2009.

SEAL THE DEAL!

THERE'S NO TIME TO WASTE

Planet Earth needs our attention



CLIMATE CHANGE AFFECTS US ALL. Rising temperatures and more frequent floods, droughts and storms are impacting millions of people's lives. Nine out of every ten such disasters are now related to global warming. Those are scary facts.

On 7 December 2009, world leaders will gather in Copenhagen, Denmark, to respond to one of the greatest challenges facing humanity: climate change and sustainable economic growth. But how to protect the planet and create a green economy that will lead to long-term prosperity?

The negotiations in Copenhagen must answer this question. Our existence depends on it.

Reaching a deal by the time the meeting ends on 18 December will depend not only on political negotiations but also on public pressure from around the globe. Public support must be galvanized.

The UN-led Seal the Deal campaign aims to motivate political will and public support for a comprehensive global climate agreement in Copenhagen in December.

YOU can join the Seal the Deal campaign. Sign an online, global petition which will be presented to world leaders, reminding them that they MUST negotiate a fair, balanced and effective agreement in Copenhagen, and that they must seal a deal to power green growth, protect our planet and build a more sustainable, prosperous global economy for the benefit all nations and all people.

Find out more and make YOUR voice heard at

www.sealthedeal2009.org

Clear and present danger

The Maldives emits so little CO_2 that it rounds down to '0 per cent' of the world's total, but this low-lying archipelago of 1,190 coral islands is among the world's nations most vulnerable to global warming: it would become uninhabitable if sea levels rose by less than a single metre. Faced with such an impending crisis, many would start looking for somewhere to run.

MALDIVES PRESIDENT MOHAMED NASHEED – who, at 42, is one of the world's youngest leaders – is not just standing his ground, but challenging nations around the world by pledging to make his country carbon neutral by 2019.

The Maldives is not the first country to announce such an ambition: Costa Rica, Iceland, Monaco, New Zealand, Niue and Norway also have plans. But, if successful, it will be the first to achieve it. Its strategy requires a combination of 155 1.5-megawatt wind turbines, half a square kilometre of solar panels and a biomass plant that will burn coconut husks. Extra power will be stored in batteries for back-up. This renewable electricity will also power all the islands' vehicles, including watercraft, while the nation aims to offset emissions from aviation by purchasing European Union emissions trading certificates and destroying them. It will cost the Maldives $110 million a year to implement its plan, but the island nation will start recouping its investment within 10 years.

Reinhard Dirscherl/WaterFrame/Still Pictures

Ullsteinbild/Topfoto

You've had positive reactions to your announcement worldwide. How have people back home received the news?

President Nasheed: Since announcing the carbon neutrality goal a little over two months ago, the Maldives has witnessed something of an environmental enlightenment. Maldivians are discussing and debating the environment far more than they used to. The media features environmental stories more regularly than before and civil society groups are raising awareness about the importance of protecting the environment.

For World Environment Day on 5 June, the Maldives held a children's festival in which children could voice their concerns over the environment. This is just one example of the many public activities that are now taking place in the Maldives. These sorts of events are important because only with the help of local people can the country make a success of its environmental policies.

Why does the Maldives want to be the world's first country to go carbon neutral when the islands will be among the first to be affected by sea-level rise? Why aren't you devoting your efforts toward adaptation or evacuation instead?

President Nasheed: The average height of the Maldives is a mere 1.5 metres above sea level. And so we are very vulnerable to climate change and rising sea levels. Scientists warn that sea levels could rise by a metre this century. For the Maldives, climate change is no vague or distant irritation, but a clear and present danger to our existence.

Maldivians have lived in the Maldives for thousands of years. And we don't want to trade in paradise for an environmental refugee camp. For these reasons, we are investing money in improving the sea defences around our islands – building water breakers, sea walls and revetments as well as ensuring we protect our coral reefs as best we can. Last year, the Government warned that future generations of Maldivians may have to seek a new homeland if nothing is done to stop the carbon pollution that is driving global warming.

It is not too late to save the Maldives. If the world wakes up to the climate crisis and makes a real commitment to combating carbon emissions, the Maldives can enjoy a future in the

22nd century. Nations must agree to a tough, binding agreement drastically to cut greenhouse gas emissions at the United Nations Climate Conference in Copenhagen this December. Nothing could be more important because climate change not only threatens the Maldives, it threatens us all. The Maldives is a front-line country in the climate change battle. But history shows us that if you can't protect the front line, the battle will soon be lost. If the world can't save the Maldives, tipping points might push climate change beyond man's control.

How can the efforts of a tiny country like yours be adapted to large, rich countries?

President Nasheed: The Maldives is a small country. And our contribution to global greenhouse gas emissions is negligible, at less than 0.1 per cent. We have not been part of the climate change problem. But we are determined to be part of the solution.

We believe that the Maldives can lead the world by example. That is why the Government announced in March this year that the Maldives will become the world's first carbon-neutral country within a decade.

It will not be easy to make the Maldives carbon neutral. Generating renewable energy through solar and wind doesn't come cheap, particularly in a country where the population is scattered across far-flung islands. But going carbon neutral is possible and where there is political will, there is a way.

I hope the Maldives' carbon-neutral example will help persuade other countries to follow suit. By successfully decarbonizing our local economy, the Maldives can demonstrate that going green is not only possible but also profitable.

I also hope our example can inspire concerned citizens and activists in other countries to lobby their governments for greater cuts in greenhouse gas emissions. If a relatively poor developing country like the Maldives can go carbon neutral, what excuse can wealthy nations have for refusing to do the same?

You are hoping that a carbon-neutral Maldives will draw more eco-tourists to the islands, but won't that cause more carbon emissions?

President Nasheed: Our carbon-neutral plan envisages the total decarbonization of the Maldivian economy. We will stop burning fossil fuels and instead generate power with the raw materials the Maldives has in abundance: the sun, the sea and the wind. We are harnessing pyrolysis technology to dispose of our waste in environmentally friendly ways. And we hope to gradually replace petrol and diesel boat and car engines with green technology.

Aviation is trickier. Wide-bodied commercial aeroplanes need kerosene to fly. Until someone invents bio-kerosene, aircrafts will continue to burn fossil fuels. The Maldivian economy is, and will continue to be, heavily dependent on tourism. The vast majority of holiday-makers come from Europe and East Asia, so reducing the number of flights to and from the Maldives would be devastating for our economy and our people.

Going carbon neutral does not mean your country never produces any CO_2 emissions. What it means is that you are not a net contributor to global emissions. In effect, the country does not emit more CO_2 than it absorbs. In order to ensure that the Maldives becomes carbon neutral, we'll need to offset the greenhouse gas emissions produced by aircraft flying here. One option under consideration is for the Maldives to enter the European carbon trading certificates market and buy permits to pollute. If we buy these permits, this means that European polluters, such as factories and cement works, will have to pollute less. By entering into this scheme, the pollution caused by tourists travelling to the Maldives can be offset by European polluters emitting fewer greenhouse gas emissions.

What are your first practical steps towards going carbon neutral? How long will it be before you achieve your first milestones?

President Nasheed: We have set out a vision for the country, based on an initial eco-plan drawn up by climate and energy experts Mark Lynas and Chris Goodall. We need to turn that vision into a carbon-neutral reality. In April, we established a Presidential Advisory Council on Climate Change, made up of 15 environment and energy experts, who will provide the Government with advice on how to reach the carbon-neutral target. This expertise will help us draw up a detailed roadmap for reaching carbon neutrality in 10 years.

The Maldives is also pressing ahead with numerous environmental projects and reforms. For instance, the Government intends to privatize the state-run electricity firm STELCO, and we are looking for international companies with experience in renewable energy production to bid for the contract. A $10 million photovoltaic solar panel project is currently being implemented in and around the capital city of Malé and a local firm is developing concentrated solar power in island communities. Technology companies are researching the potential use of wind power, and investors are experimenting with biochar to help dispose of waste and allow Maldivians to grow more local produce.

We are also working hard to protect our marine life. In March, the Government banned shark hunting. Earlier this month, we created three marine protected areas to preserve whale sharks and manta rays.

We are determined to reach our carbon-neutrality target. Some people might say, because the Maldives is a small country, that our efforts are a mere drop in the ocean. But I hope our example creates a ripple of hope that forms a current of change, to protect this planet for all our grandchildren.

Concerted effort

Travelling the world playing concerts is an essential, if gruelling, aspect of being a big-name band. And the environmental impact is high – something the UK megaband Radiohead both acknowledges and seriously tries to tackle.

With its big, textured, moody sounds, Radiohead has become one of the world's best known and critically acclaimed acts – with seven albums, three Grammy wins and countless accolades. But popularity has its price: a newspaper-sponsored audit found that the 2003 album *Hail to the Thief* – including CD production and a world tour that played to 545,000 fans in Europe, Japan, Australia and the United States of America – emitted 7,500 tonnes of CO_2, which is equivalent to a year's emissions from 1,400 cars. And that's before taking the band's road travel or entourage into account.

While such figures aren't unusual for a such a high-calibre act, they shocked Radiohead's front man Thom Yorke, who has long been concerned with environmental issues. He threatened to quit touring if it couldn't be made greener. 'The

What can wedge analysis do for us?

Scientists say humanity will have to cut its CO_2 emissions

present path, and another one showing the track they will