

The UNEP Magazine for Youth

# TUNZA



for young people · by young people · about young people



**UNite to combat CLIMATE CHANGE – Paint for the Planet**

**Living through it – Material gains – Earth Hour**

**Green growth – ONLY CONNECT – Natural faith**

## TUNZA

the UNEP magazine  
for youth. To view current  
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**Partners for Youth  
and the Environment**



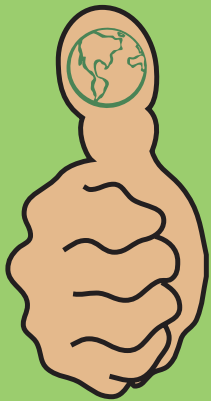
**UNEP and Bayer, the German-based international enterprise involved in health care, crop science and materials science, are working together to strengthen young people's environmental awareness and engage children and youth in environmental issues worldwide.**

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.



# EDITORIAL



## COOL & COOLER

**With less than a year to go before governments meet in Copenhagen to reach a global agreement on climate change, leaders need to know – more urgently than ever – how much the people they represent really care. Here are a few ways to help make the message loud and clear.**



### COOL

**Join up:** Participate as much as possible in local demonstrations or campaigns. Whether protesting against vast carbon-intensive developments or educating people about the environmental benefits of eating locally grown food, there is strength in numbers, and the media takes notice when crowds take to the streets. Get your family and friends involved to help make an even bigger impression. Better yet, if you can't find a local campaign supporting your favourite climate change cause, start one yourself.



### COOLER

**Reach out:** The most powerful tool we have is communication – particularly between peers. If you tell three friends who each tell three more friends, your message can reach exponential numbers of people – whether you use leaflets at school, newspaper articles, or social networking or video internet sites.



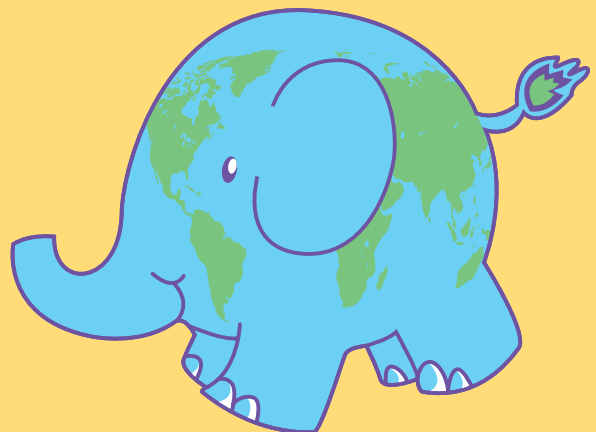
### COOLEST

**Write in:** The saying goes that the pen is mightier than the sword. Find out who your local and national environment ministers are and start a letter-writing campaign to tell them why you care about climate change, and what you would like them to do about it. On the local level this might be about creating more bicycle lanes; on the national level it could be asking your country to take leadership by committing to limits on carbon emissions that will really make a difference.

For almost our entire existence on the planet, we humans have been local creatures. From prehistoric times until remarkably recently, most people moved little from where they were born, drew their sustenance from the area around them, and relied on it to deal with their wastes. Even the development of trade, the establishment of civilization and the rise of nation states did not change this greatly. Some areas might become degraded or polluted – the hills of ancient Greece denuded of trees to build ships, or London's Thames turned into an open sewer, for example – but the impacts were still local, and the rest of the world was unaffected.

Now, the rise of rapid communication – and the precipitous growth of both population and consumption – has put an end to all that. Humanity has become a truly global species. Though many of the world's people, especially the poor, may still depend on a local area, no individual – and no community – can remain an island. The impact of the behaviour of bankers on Wall Street or in the City of London is felt even by the poorest of the poor. Pacific islanders who have contributed almost nothing to global warming are having to abandon their homes as climate change caused by pollution thousands of miles away makes their seas rise. Soot from Asian smoke soon reaches North America, pesticides used in the tropics distil out over the Arctic, and a tonne of carbon dioxide heats the global atmosphere regardless of where it is emitted.

Both economic and environmental problems are increasingly global, and so have to be solved globally. The United Nations is crucial to this. Over its three and a half decades of life, UNEP has been at the heart of forming an array of international environmental laws, enabling governments to cooperate across a wide range of issues, from saving the ozone layer to controlling trade in hazardous wastes, from the deserts to the seas. But the greatest test of all – bringing global warming under control – has yet to be met, and this year will be crucial in deciding whether it is. Like it or not, we are all now citizens of the world and need to take responsibility for its future.



# Implementing green

'It's taken 30 years of effort and education, but in Germany we no longer dump garbage in landfill,' said Hamid Shakoor at AVEA, the municipal waste management company for Leverkusen, Germany. 'Instead, our policy is to avoid producing waste in the first place, – then to recycle or reuse every possible material. We incinerate the rest, using the energy for district heating and power. The ash can then be recycled in road construction.'



Dirk Hansen/Bayer AG



Michael Rennertz/Bayer AG

Michael Rennertz/Bayer AG

**A**S THE GROUP OF YOUNG ENVIRONMENTALISTS from around the world listened to Mr Shakoor, they watched a middle-aged German couple pull into the waste-sorting facility, haul a sofa from their van and toss it into an open bin marked *Sperrmüll* – bulky trash. All around, other people were unloading rubbish, sorting it carefully into categories: PVC, electronics, cork, telephone wires, garden waste, glass of different colours, hazardous waste and more. Some took something away as well – bags of compost made from the green waste.

## Revelation

It may be everyday practice in Germany, but to the watchers it was a revelation. 'In my country, some people separate waste,' said Óscar Felipe Saavedra, from Colombia, 'but not because the government has a policy of educating people.'

'I think the difference must be that Germany has a standard of living that's high enough to be able to care for the environment,' observed Meghna Das. 'In India, people have bigger problems than dividing their glass into different colours. But it didn't happen overnight here, and I hope that someday we can have this kind of system too.'

Simon Sizwe Mayson, from South Africa, felt differently. 'I'm amazed that there's absolutely no landfill generated from household waste,' he conceded. 'But what about the three Rs? Yes, they're recycling here, but what about reducing and reusing? In my country you wouldn't throw away a sofa with just one rip in it. Recycling is efficient, but not that efficient. It's a problem of overconsumption in developed nations.'

Strong opinions like these are normal at the Bayer Young Environmental Envoy programme – the annual conference hosted by Bayer in partnership with UNEP, which convenes strongly committed young environmentalists from around the world at the company's headquarters in Leverkusen, Germany. For one week, they visit Bayer's state-of-the-art green technologies, glimpse how German citizens, government and industries work together to help protect the environment, and exchange information and ideas.

## Gaining ground

Now in its tenth year, the programme has grown from hosting young people from just one country – Thailand – to welcoming 50 envoys selected from 18 nations: Brazil, China, Colombia, Ecuador, India, Indonesia, Kenya, Malaysia, Peru, the Philippines, Poland, Republic of Korea, Singapore, Thailand,

Turkey, Venezuela, Viet Nam and, this year for the first time, South Africa.

## Practicalities

As ever, the 2008 delegates mixed discussions with activities, grounding theory in experience. Lectures on monitoring air and water quality preceded a tour of a waste incineration plant to see how pollution is scrubbed from flue smoke, and a trip down the Rhine on a state environmental agency lab boat to take a water sample. After hearing about the challenges of feeding a growing world population at Bayer CropScience, envoys donned lab coats and goggles at Baylab Plants – a newly opened educational facility – to extract DNA from a rice plant, a process that allows scientists to analyse traits like resistance to flooding.

But this year there was a new sense of urgency. 'We meet when the world is in serious crisis,' said UNEP's Director of Communications and Public Information, Satinder Bindra, in his opening remarks. 'The news is full of the financial meltdown and food shortages at a time when world attention is also more focused on climate change than ever. And all these challenges are deeply and globally interconnected.'

'Scientists say that glacial melt is happening at an ever-increasing pace,'



he added. 'Glaciers feed rivers such as the Ganges and the Yangtze, which have nurtured civilizations and feed millions of people. If these rivers become seasonal, where will people go? Imagine the impact on crops: India and China are the largest producers of rice and wheat in the world. The price of everyone's bread – including your pizza – will go through the roof, even here in Germany.'

### Strength in numbers

Mr Bindra urged the envoys to take their responsibilities as individuals seriously, but also to remember that there is strength in numbers – especially as world leaders will be meeting later this year to forge new agreements at the United Nations Climate Change Conference in Copenhagen. 'The population of the world under 25 is 3 billion. If young people agree to act together, they can send a powerful message. It's time to raise all those 3 billion voices.'

But he also warned that there is no time for youth to wait around for governments to fix things. 'It's time for you to not just think green but to implement green,' he told the delegates. 'You, as environmental leaders, must put the word out, lead an awareness campaign, take action and get 50 of your Facebook friends to do the same. You have the knowledge. It's your planet. Let's take the bull by the horns.'

## Material friends

**Hyrle de Souza e Silva (23), from Brazil, and Peruvian Carlos Koc (23) met as Bayer Young Environmental Envoys, in 2007. Since then they have been sharing ideas and information...**

**Hyrle:** My friend Carlos has graduated in architecture, and he is now working on his thesis. He wants to work with solid waste management, designing new plants and a landfill for his city. Although he lives in Peru, we have been talking a lot via internet chat and email. I've recently been doing research in Brazil about waste management to help him find information for his thesis.

**Carlos:** Hyrle has just graduated with a degree in industrial design in Brazil. At BYEE I was inspired by her presentation about manufacturing school fur-

niture using recycled materials. Ever since, we've been sharing information about new materials for our upcoming projects. And together we discuss what we learned in Germany, such as the fact that they use wool, rather than wood, to insulate houses in the countryside.

Being Bayer Young Environmental Envoys changed our lives, and because of this, Germany will always be special to us. Frontiers and differences fell away. We met students from all over the world with whom we still keep in touch regularly. Together, we are all still committed and looking for the best for the environment.

The BYEE experience helped us realize that globalization can be a positive force for the future.

***Back home, it's not so easy to get people to listen to you. But here, I've met 49 people who share my views and I'm getting a lot of ideas for my own projects. The most amazing thing is how much awareness people in my age group have around the globe. I feel so proud that each one of us is acting for the same cause. Will I stay in touch with everyone? Of course, 100 per cent.***

**Rohit Pansare, India**



# Unite to fight



**'GOVERNMENTS, BE HEROES! Make greenhouse gases zero. Show citizens the way. Let's create a better day! It'll never be too late to free our planet.'** So says 14 year-old Gloria Ip Tung, winner of the 2008 UNEP-Bayer International Children's Painting Competition.

She's not alone. A survey carried out for UNEP by GlobeScan showed that young people across the world want our leaders to 'do whatever it takes' to tackle climate change, and now.

The survey of 12 to 18 year-olds in Brazil, India, Russia, South Africa and the United States of America found that 97 per cent of all young people wanted major steps to be taken to counteract the causes and mitigate the effects of climate change, and soon. Almost two thirds didn't feel that world leaders were doing enough on the issue, but excitingly, fully 89 per cent felt that 'young people like me can make a difference on climate change'.

'This survey delivers a very strong message,' commented pollster Chris Coulter, Vice-President of GlobeScan. 'And it's important because young people are not always well represented by world leaders.'

The survey was carried out just before the November 2008 launch of

the United Nations' Unite to Combat Climate Change campaign. This aims to build overwhelming support for a comprehensive global climate agreement, to take effect after the Kyoto Protocol expires, when the world's governments meet at the Climate Change Conference in Copenhagen, Denmark, in December. 'We have just seven years left to stabilize our CO2 emissions,' said Achim Steiner, Executive Director of UNEP. 'And the horrifying truth is that in the past seven years these emissions have risen faster than at any time in history.'

'My wish is that everyone should take care of the environment,' said 13 year-old Charlotte Sullivan, from the United Kingdom, at an exhibition of paintings from the competition at UN headquarters, which will tour climate meetings and conferences, culminating with the Copenhagen negotiations.

'I believe that paintings could lead to understanding and cooperation for our global environment,' said Netpakaikarn Netwong (14) from Thailand. 'Tree planting would reduce CO2. Biking and mass transit would reduce air pollution and save energy for a better world.'

Laura Paulina Tercero Araiz (10) from Mexico was equally committed: 'Through my painting I would like to transmit to all people, including the

world's leaders, my hope and desire to stop global warming by promoting the use of our sun, because it is powerful, clean and practically endless. If we want it could be our everyday energy source.'

'The world is in the hands of old people, but the future is in the hands, minds and imagination of the young,' said Mr Steiner at a linked auction of 25 of the young people's paintings that raised more than \$25,000 for UNICEF projects for children affected by climate-related disasters. 'The auction is a way of communicating young people's perspectives in a world where half of the population is below 25 years of age. And every year over the next decade, more than 175 million children are likely to be affected by natural disasters induced by climate change.'

One of the young artists, Malta's Andrew Bartolo, added his own concern at this. 'I'm only 15, but it scares me that so early in my lifetime so many children have already been affected by climate change,' he said. His own picture is of penguins moving from a beach to live in a fridge, and he explained: 'My painting takes a comical viewpoint. It shows penguins having to migrate because of climate change. But these conditions will affect people and force them to leave their homes too.'

## Natural faith

Tunza Youth Advisor for Africa, Margaret Koli, reports on the United Religious Initiative (URI) Global Assembly in Mayapur, West Bengal, India

**I HEARD ABOUT THE CONFERENCE** through my activities as a Tunza Youth Advisory Council member, and was invited to lead a workshop on youth, environment and peace.

More than 150 young people from 38 countries were there from many geographic, cultural and linguistic backgrounds, including Bahais from Egypt; Jews from Israel; Muslims from Germany, Tunisia and Iraq; Christians from Kenya, Uganda, Iraq and Jordan; Zoroastrians from the United Kingdom; Hindus and Buddhists from India and youth of indigenous faiths from Latin America and North America.



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# UNITING NATIONS

The world's governmental community first convened to consider the future of the environment in Stockholm in 1972. This United Nations Conference on the Human Environment led to the foundation of UNEP to 'provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations'.

One of UNEP's earliest objectives was to establish pioneering international laws to protect the environment, something that has now largely been achieved.

It began in the city of Barcelona on the shores of the Mediterranean, where the nations surrounding the sea – including some old enemies – jointly agreed to combat pollution and protect it. The 1976 Barcelona Convention inspired a whole series of other regional agreements covering most of the world's seas and oceans. Now, more than 140 countries participate in 13 Regional Seas Programmes established under UNEP's auspices – and the approach pioneered a quarter of a century ago has spread to encompass all aspects of the environment.



### Some paintings from the exhibition:

Top: Andrew Bartolo, Malta.

Centre: Gloria Ip Tung, Hong Kong SAR.

Bottom: Laura Paulina Tercero Araiz, Mexico.

The delegates communicated about the many issues youth face today – including conflict, unemployment and poverty – through song, dance, workshops, art and discussions, all underpinned by our experience of faith. But deep into our discourse, we inevitably found that we all faced another common concern: environmental issues, and particularly climate change.

Discussing the environment came naturally and fitted right into the agenda of the conference, which had been convened to work towards ending religion-motivated conflict. After all, environmental themes can be found in all religious expressions, and environmental stewardship is taught in most sacred texts. Diverse faith traditions have such varying sacred practices as praying in forests, making sacrifices by the riverside, giving offerings on sacred land, using herbs, and respecting all creatures. Most religious and sacred texts discuss the need to treat the environment with care and affection. Religious leaders of many faiths advocate

environmental protection and emphasize the urgent need to fight climate change.

During the workshop I led, young leaders spoke of the world's environmental plight, demonstrating great yearning to make a difference in their communities. Young people from India are affected by the increase in noise and air pollution, especially in the cities. The indigenous youth from Latin America and the Caribbean, who have an intimate relationship with their environment, are concerned about the degradation of their ancestors' lands. Young people from Africa are worried about the effect of climate change on food supplies, the increase in malaria and the rise in sea levels. And those from the United States of America support Barack Obama's statement that his presidency will 'mark a new chapter in America's leadership on climate change'.

We concluded the workshop by planting a tree as a symbol of hope and as a step towards reducing our carbon footprints.

# The Green New Deal

**F**INANCIAL TURMOIL; failing industries; the spectre of massive unemployment; soil degradation and drought causing failing harvests; a new American president swept to power on a platform of change. That was back in 1933, and President Roosevelt's New Deal set out to provide work for the unemployed, reform business and financial practices, and ensure economic recovery.

'In many ways we're in a similar place, but at a global level,' says Pavan Sukhdev of Deutsche Bank, and leader of the Economics of Ecosystems and Biodiversity process. 'Tremendous economic growth over the last 50 years has been accompanied by accelerating environmental decline. Global GDP may have doubled between 1981 and 2005, but 60 per cent of the world's ecosystems have been degraded or used in an unsustainable manner.'

'Investment will soon be pouring back into the global economy. The

question is whether it goes into the old, extractive, short-term economy of yesterday or a new green economy that will deal with multiple challenges while generating multiple economic opportunities for the poor and the well-off alike.'

The global car industry generates \$1.9 trillion a year in revenue and employs 4.4 million people. The steel industry employs another 4.5 million to generate \$500 billion. But the world's 100,000 protected areas generate around \$5 trillion every year in nature-based goods and services yet employ only 1.5 million people.

'That's it in a nutshell,' says Sukhdev. 'If we are to lift 2.6 billion people living on less than \$2 a day out of poverty, do we put them into making more and more motor cars, TVs and PCs, or do we invest in the protected area network and develop its potential for green, decent and sustainable jobs?'

The Green New Deal, promoted by

UNEP, with whom Pavan Sukhdev is currently working, aims to refocus the global economy towards massive job creation from the growth of resource- and energy-efficient building and construction; the widespread use of modern public transport in megacities; the scaling up of solar, wind, wave, thermal and bio energy; the promotion of the sustainable chemical and waste management industries as highly lucrative; and restoring agricultural sustainability.

Many of the world's sharpest entrepreneurs are already convinced. California's Silicon Valley, which led the semiconductor expansion in the 1970s, the biotechnology revolution in the 1980s and the dot com boom in the 1990s, is now wholeheartedly embracing green growth. 'Remember the internet? Green tech is bigger,' says John Doerr, probably the world's most influential venture capitalist. 'This could be the biggest economic opportunity of the 21st century.'

## Q & A TUNZA answers your questions

**Q What are the drawbacks and benefits of globalization for sustainable development?**

**A** In principle, globalization should make sustainable development easier to achieve, if directed towards prosperity and fairness for everybody. However, if it is dominated by powerful nations and large corporations advancing their own agendas, then it will hurt smaller and weaker countries, creating inequality within and between communities and nations.

**Q What is the relationship between globalization and the financial, food and fuel crises we now face?**

**A** The price of oil and the rate at which it is produced affects the price of fertilizers and pesticides, crucial to the world's food supply and food prices. And the consumer downturn in the industrialized world impacts factories and workshops in China and India and, in turn, the producers of oil, timber and minerals, whether in Africa, Asia, Latin America or the Middle East. But perhaps these crises will encourage people, particularly in the developed world, to reassess the absolute priority given to global economic growth.

**Q Are governments meeting to create a common policy on how countries should tackle environmental problems, which could serve as a guideline that countries can then implement in their own ways?**

**A** The Governing Council and Global Ministerial Environment Forum of UNEP provide a platform for governments

to discuss and review important and emerging environmental issues, and to set policy guidance and appropriate recommendations.

**Q Since globalization is a process taking place in our time, how, if possible, can it help solve environmental problems?**

**A** Globalization – the spread of knowledge, medicines, goods and services – is as old as the world itself. But technology, from the development of engines to the internet, has speeded up both its scope and potential. Much as the globalization of health care has improved the lives of vast numbers of people, so information technologies can spread the environmental imperative, and empower us all to share solutions and examples of best practice.

**Q What will be the impact of the current economic crisis on environmental policies in developed countries?**

**A** The danger is that the economic crisis will cause governments to scale down their environmental policies, causing an even greater environmental crisis as follow-up to the economic one. By contrast, a global Green New Deal would address both crises at once. It is encouraging, for example, that leaders of the European Union are to implement their earlier pledges to reduce greenhouse gas emissions by 20 per cent by 2020, to cut energy consumption by 20 per cent and to achieve a share of 20 per cent renewables in total energy consumption.



# Green growth



**M**any used to think that environmental measures cost people their jobs. Many still believe they do. It was always a mistaken view – but now it is clearly the very opposite of the truth. For, as an increasing number of industries and governments are coming to realize, green jobs are the growth area of the future, offering the best hope of providing work and restoring prosperity in the midst of the greatest recession in more than half a century.

There are many millions of such jobs already. The International Labour Organisation (ILO) reports that there are more posts in renewable energy – 2.3 million worldwide – than in oil production and refining. And half of them are in developing countries: in China alone, 600,000 people are employed in making and installing solar water heaters.

Similarly, 1 million Americans have jobs in recycling waste, while Mexico is employing 1.5 million people in planting and managing the forests that conserve its soils and water supplies. Worldwide investment in renewables more than quadrupled between 2004 and 2007, and clean technologies now attract the third largest amount of venture capital in the United States of America (after IT and biotechnology).

This is only a tiny fraction of the real potential. Projected investment in renewables, the ILO adds, could create at least another 20 million jobs by 2030, and 12 million more could come from producing biomass for energy and industry. Improving the energy efficiency of buildings could add another 2 to 3.5 million jobs in the United States and Europe alone, and tens of millions worldwide. And restoring the world's degraded ecosystems, as in Mexico, could employ hundreds of millions of people around the globe.

Indeed, investing in green technologies and practices provides far more jobs for each dollar, rupee, euro or yuan spent than if they are invested in the traditional alternatives. Renewable energy produces three to five times as much employment for the same

investment as does getting energy from fossil fuels. Recycling waste gives 10 times as many people work as does dumping it in holes in the ground – and small-scale organic farms are far more job-friendly than big, intensive ones.

With many millions getting thrown out of work as the recession deepens, jobs will be needed more than ever before, not just to reduce unemployment, but to reconstruct economies and revive growth. So governments will increasingly discover the importance of green measures, not just for the long-term future of the planet, but in resolving the immediate crisis.

And in a sense, of course, almost all future jobs will be green as the environmental crisis grows. Farmers will necessarily have to do more to conserve the land as soils erode, construction workers will increasingly be building energy-efficient homes and architects designing them. Engineers and assembly line workers will be making greener appliances and cars. Businessmen will find that profits come green. Politicians and journalists will have to be environmentally literate to understand the world in which they are operating, lawyers will have to become more and more conversant with environmental law, and accountants will increasingly learn how to deal in the currency of carbon.



Peter Hvizdak/MSUM/Still Pictures

Joerg Boethling/Still Pictures

# 'I'LL LIVE THROUGH IT'

BY ZOË CARON

Zoë Caron, 23, from Canada, is a contributing editor to It's Getting Hot in Here - Youth Dispatches on Global Warming ([www.itsgettinghotinhere.org](http://www.itsgettinghotinhere.org)), launched in autumn 2005 and now one of the top three climate blogs, and a hub for sharing resources, success stories and news about environmental issues. With 160 contributors from eight countries – from high school and university students to young professionals – IGHIH posts daily, and is expanding to include Dutch, French, Swedish, German and Russian versions. Zoë is also co-author of *Global Warming for Dummies*.



Daniel Abriel/Dalhousie University

**YOUNG PEOPLE** have probably been involved in environmental activism for as long as environmental concerns have been around; they recognize that they have the most to lose. But now – thanks in large part to the internet, where Facebook, MySpace, blogs and websites allow instant communication and the immediate spread of information – a mass climate change movement is bursting at the seams, allowing youth to participate in international environmental governance.

Young people had a presence at the Rio Earth Summit in 1992. Ever since then, they have been finding ways to attend United Nations climate conferences to make their voices heard. Little of this is being tracked or measured, because it is not traditionally organized. But we do know that more than 500 youth from around the world, largely self-funded, travelled to the latest Climate Change Conference in Poznan, Poland – and at least as many will be present for December's crucial negotiations in Copenhagen.

At each event, different organizations and people volunteer to facilitate a Conference of Youth over the weekend before the conference begins. Youth strategy meetings happen daily. We form committees focusing on specific issues – like the Kyoto Protocol or the Climate Convention – and spread out across the conference grounds to ensure that every

meeting is observed and every issue tracked. We carry out demonstrations every day, our representatives hold meetings with national delegations, and we blog by the minute to keep our global peers informed.

Youth delegations have been granted meetings with governments where other organizations were barred, and we have been told that shifts in attitudes and decisions would not have happened without pressure from the youth presence, as occurred with a late night breakthrough at the seminal 2005 climate negotiations in Montreal. Even the media has started to take notice, including Reuters, *The New York Times* and Al-Jazeera.

The youth movement has its disadvantages, including lack of experience on the world stage and different levels of access to resources. But we have no long-standing grudges or negative history with governments, industry or other organizations. We have no illusions about the causes of climate change, but are open to new information and possible solutions. Our ease with technology allows us to exploit its power, and having little money or institutional structure means we are forced to be creative and resourceful: our biggest resource is each other.

But the over-arching advantage of youth is an undeniable optimism that shouts: 'This will work, because it has to, because I am going to live through it.'

We can feel the momentum: the energy of youth is shifting the environmental movement faster than any other force. This movement has a life of its own, with all arrows pointing forward. The best part is that we're doing it by and for ourselves. We ask one thing: Join us.

## Want to get involved?

### Check some of these links:

**UNEP TUNZA** [www.unep.org/tunza/youth/](http://www.unep.org/tunza/youth/)

**Australian Youth Climate Coalition**

[www.youthclimatecoalition.org](http://www.youthclimatecoalition.org)

**Chinese Youth Climate Action Network**

<http://groups.tigweb.org/CYCAN?langrand=792807424>

**Solar Generation** [www.solargeneration.org](http://www.solargeneration.org)

**African Youth Initiative on Climate Change** [www.ayicc.org](http://www.ayicc.org)

**Canadian Youth Climate Coalition** [www.ourclimate.ca](http://www.ourclimate.ca)

**Energy Action Coalition** [www.energyactioncoalition.org](http://www.energyactioncoalition.org)





## Survival is non-negotiable

BY RUCHI JAIN

Five hundred young people from 50 countries – all members of a growing youth climate movement – gathered to make a difference at the international climate negotiations in Poznan, Poland, in December 2008. I was thrilled to be part of the first Indian youth delegation to such a conference.

Another member of our delegation, Deepa Gupta, told delegates: 'People in the Sundarbans, at the mouth of the Ganges, have been drinking saline water for more than a year. Their crops have been ruined and the fish have been dying. For some, these negotiations are about survival.'

The Youth Political Strategy team took up the theme in its Project Survival! We created a pledge – 'I, the undersigned, commit my delegation to a global climate treaty that safeguards the survival of all countries and peoples' – and managed to get the signatures of representatives from more than 80 countries, including those of such luminaries as Dr Rajendra Pachauri, Nicholas Stern and Tim Flannery.

We are trying to tell world leaders that young people are determined to ensure that our journey to a sustainable future is not derailed. We told the delegates: 'The train to Copenhagen is already moving; youth are on board,' and asked 'are you?'. Yvo De Boer, Executive Secretary of the United Nations Framework Convention on Climate Change, encouraged us, telling us we were on the brink of 'something spectacular'. We have only just begun.

*Ruchi Jain, a political science graduate and Mumbai Coordinator of the Indian Youth Climate Network, attended the Tunza International Youth Conference 2007. She went to the Poznan Climate Conference along with Tunza Youth Advisors Caitlin MacLeod (Canada), Sara Svensson (Sweden) and Anne Walraven (the Netherlands).*



UNEP

## GOING GLOBAL

Saving the ozone layer, which protects all life against the sun's deadly ultraviolet rays, shows what environmental law can do. UNEP began work on the issue in 1977, before the threat was fully appreciated, resulting in the 1985 Vienna Convention, a framework for action.

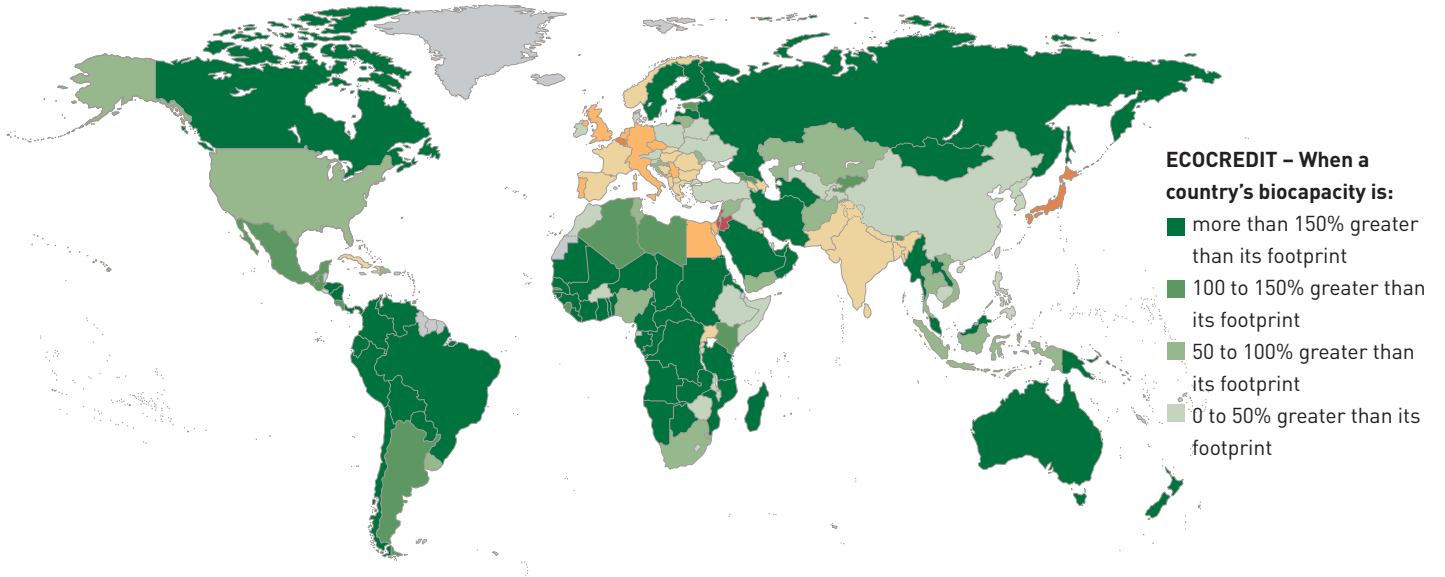
Two years later, after the discovery of the Antarctic's giant ozone hole, the world's governments began controlling damaging chemicals through the Montreal Protocol. This has been progressively tightened, with 95 per cent of ozone-depleting substances now having been phased out. Described by former UN Secretary-General Kofi Annan as 'perhaps the single most successful international agreement to date', it is credited with saving 20 million people from skin cancers and 130 million from eye cataracts by 2050, as well as preventing damage to human immune systems, wildlife and agriculture.

The Protocol has also been the most effective international measure against global warming, because ozone-depleting substances are also often powerful greenhouse gases. By some estimates it has delayed climate change by as much as 12 years. Agreement on action to tackle CO<sub>2</sub> and other greenhouse culprits has proved harder. The first step was the 1992 United Nations Framework Convention on Climate Change, but it contained no mandatory targets or enforcement measures. Five years later the Kyoto Protocol began to rectify this, but its target – a 5 per cent reduction in industrialized countries' greenhouse gas emissions by 2008-2012 – has proved too modest. Governments are now working on a new agreement, with negotiations culminating in Copenhagen in December 2009.

UNEP also began working on another global issue, desertification, in 1977, leading to the groundbreaking 1992 Convention to Combat Desertification, which takes an integrated approach and emphasizes community action for sustainable development.

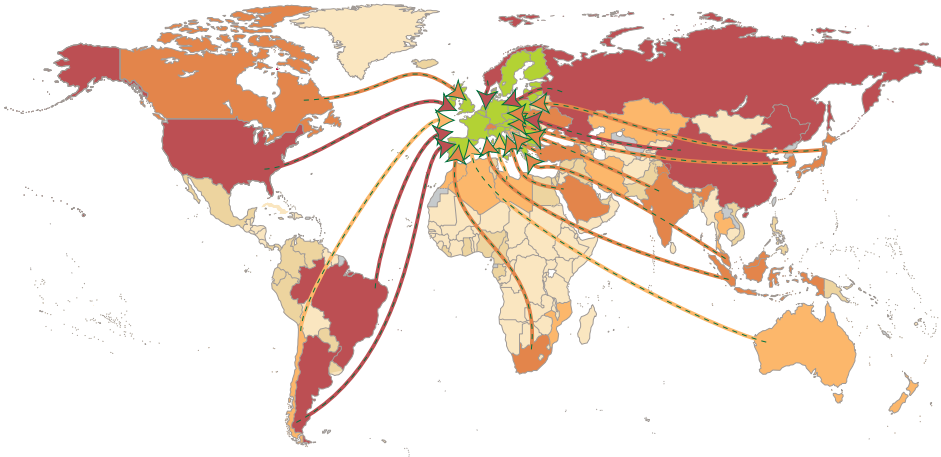
# Consuming

## Ecodebt and ecocredit in 1961

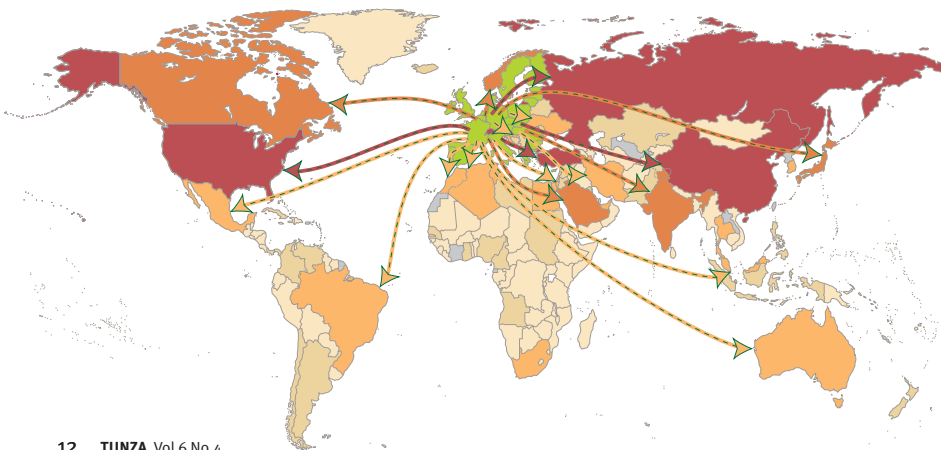


You've read about the global financial crisis, but experts are warning of an imminent ecological credit crunch. The problem is that we are using Earth's natural renewable resources faster than the planet can replenish them. In 1961, when people first started measuring our Ecological Footprint, most nations lived within their own 'biocapacity' (see map above), consuming fewer biological resources (clean air and fresh water, forests, seas and soils and their produce) than were available within their

## Imports to the European Union (27 countries) from its top 20 trading partners



## Exports from the European Union (27 countries) to its top 20 trading partners



# Buying an

Everything we buy, eat, wear, burn and use draws on the natural renewable resources of the Earth. Plants we eat or use to make our clothes, such as cotton, need fresh water and nutrients from the soil; the same is true of trees which provide us with food (fruit and nuts), fibre (paper), building materials (wood) and fuels (wood and charcoal) while animals, from which we get meat, fibre (wools) and hides (leather), need plants and water to thrive. And all, like us, need clean, unpolluted air. These resources are what is measured by the Global Footprint Network and WWF as 'biocapacity'.

A nation's Ecological Footprint is made up of the resources consumed by its citizens – that's you and me – and

### Key to all import/export maps

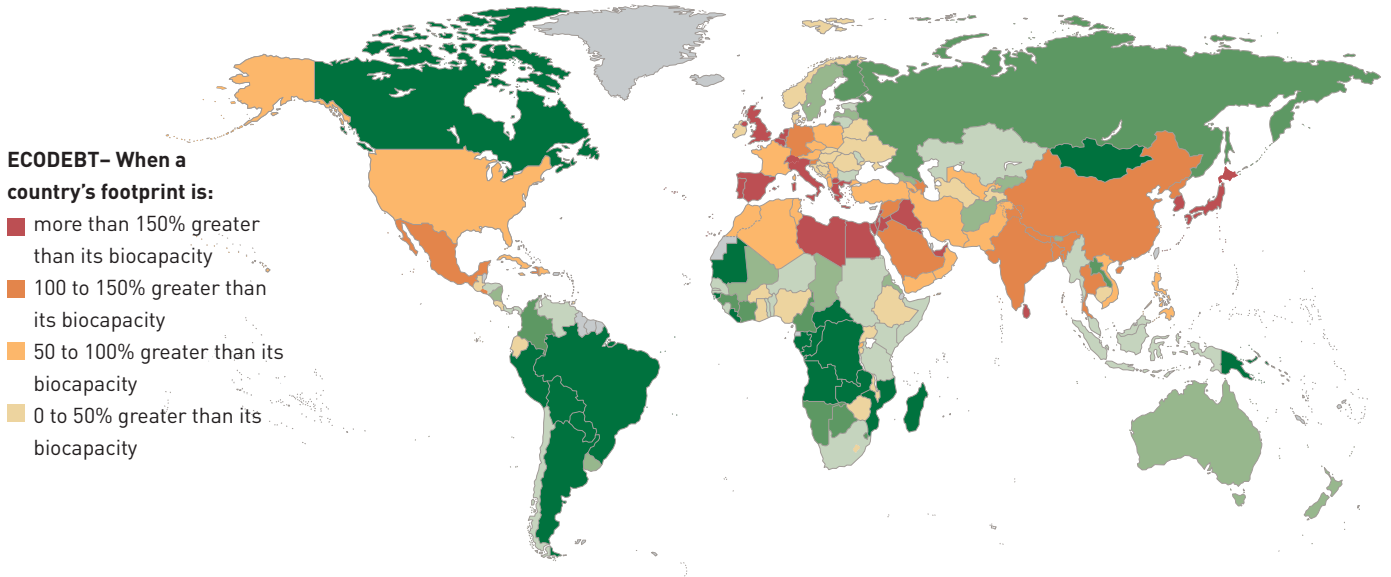
- more than 25 million global hectares
- 10 to 25 million global hectares
- 5 to 10 million global hectares
- 1 to 5 million global hectares
- less than 1 million global hectares
- insufficient data



# the planet



## Ecodebt and ecocredit in 2005



borders. Back then, people used around half of what there was. In the years between, the world population has more than doubled, but our footprint has been rising even faster. The second map shows where we are now, and just how many of the world's nations are in 'ecodebt'. Since the 1980s, humanity as a whole has been using the renewable resources of more than one planet – and it is estimated that by the 2030s we will need the equivalent of two planets to sustain our lifestyles. It can't go on.

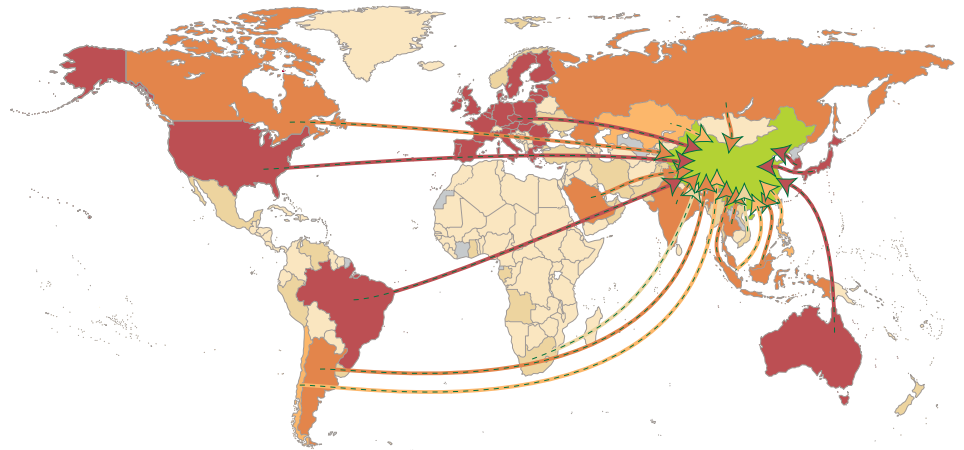
Data source: WWF: *Living Planet Report 2008*

# and selling

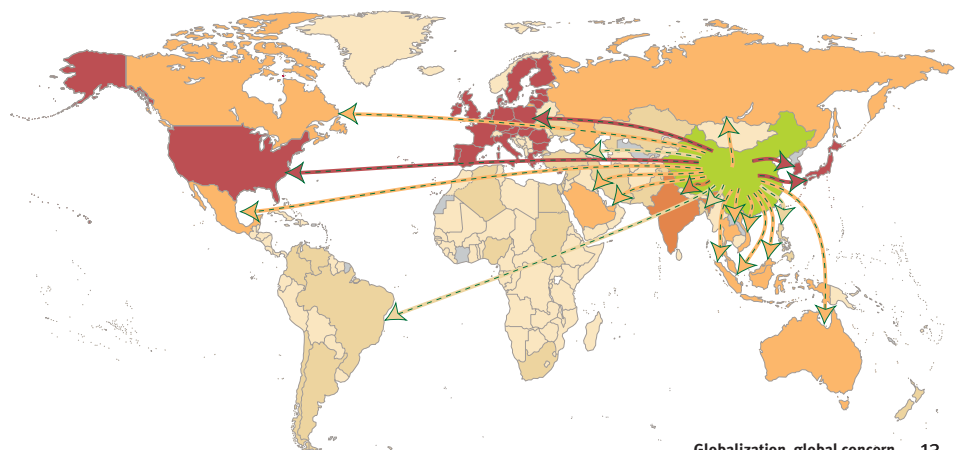
the wastes we generate. Everything we eat, use and throw away draws on the planet's biocapacity – whether from within the borders of the country in which we live, or from other nations. The footprint and biocapacity of a person, a region or a nation is calculated in global hectares (a global hectare is a hectare with world-average ability to produce resources and absorb wastes).

The maps show the trade flows of biocapacity to and from China, the manufacturing hub of the world, and the European Union (EU) which, when taken as a whole, is the world's largest economy. In 1961, the footprint of all goods and services traded between nations was 8 per cent of humanity's total Ecological Footprint. By 2005, this had risen to more than 40 per cent, showing that countries are increasingly relying on the biocapacity of others to support their consumption patterns and preferences. Richer countries import around 60 per cent of all the resources they consume, whereas poorer countries import only about 15 per cent.

### Imports to China from its top 20 trading partners



### Exports from China to its top 20 trading partners



# Only connect



James Duncan Davidson

Type 'environment' into Facebook's search function and more than 500 groups pop up, many led by youth. The International Youth Climate Movement is here, as are ECO Singapore and the Caribbean Youth Environment Network – not to mention delegates of the Tunza International Youth Conference 2007 and Bayer Young Environmental Envoys. Established organizations, including UNEP, WWF and Sierra Club, have wised up to the fact that Facebook is mostly populated with young people, and have established a presence to muster support.

Facebook's strength is that it lets people share information quickly and easily, allowing control of who gets access by giving permission to trusted friends. It includes webmail and chat, but is also a personal bulletin board for posting news clippings, interesting websites, video, photographs and more.

Its inventor, Mark Zuckerberg, was 19 when he came up with the idea in 2004 while studying computer engineering at Harvard. He wanted an online version of the university's student directory, known as the facebook. Harvard said it couldn't be done, but Zuckerberg wrote a template and invited students to fill in their details. Within a fortnight, half of Harvard's students had registered, and then other universities, such as Stanford and Yale, began asking for space on the site. Within three months Zuckerberg and his roommates, Dustin Moskovitz and Chris Hughes, had included 30 more institutions, and began selling advertising space.

By the end of the following summer the trio had dropped out of Harvard, moved to California and secured funding for their new business. Before the year's end, Facebook users had passed the 1 million mark. It's now one of the world's most accessed internet sites, changing the way many people communicate online.

Zuckerberg – who became the world's youngest ever billionaire – is still evolving his company, seemingly more interested in sticking to principles than big sell-outs. 'Information flow on the internet is an important topic for our generation,' he believes. 'Our ability to solve problems is generally limited by our ability to communicate with other people and share ideas.'

Facebook's greatest power comes from the way it lets people find one another by using keywords to search for common interests. Someone in the Andes can find an Alaskan concerned about global ice melt, and the two can compare notes, videos or photos on how it affects their lives. Any Facebook user can create a Group – an interactive bulletin board – around any subject. Compelling information spreads exponentially via individuals – the so-called viral effect.

Facebook has oiled the wheels of activism, and has been a boon for young environmentalists. 'Connection is very important,' says HyunJin Jeon, who serves as secretariat for the North East Asia Youth Environment Network (NEAYEN) and works for the Republic of Korea's UNEP National Committee. 'Before Facebook, it was difficult to stay in contact after international youth conferences or events. Now sharing helps us all maintain our enthusiasm. Young environmentalists used Facebook to prepare for the climate negotiations in Poznan last December. I use it to upload multimedia clips, such as one I put together documenting the World Environment Day campaign in Asia-Pacific.'

'My goal,' says Zuckerberg. 'is to help people understand what's going on in their world a little better. Openness and sharing information is both an ideal and a practical strategy to get things done.'



# Thinking globally

Once, globalization was just an economic term about increased market size and the transformation of local phenomena to global ones. Goods and services flowed mainly from Western, developed nations to developing economies.

But now it includes the exchange of ideas, resulting in a curiosity to learn from others, opening up every culture and making different values universally available. The once one-way flow of fashion, goods and services is now multidirectional. Indian film makers use North American rappers in their movies; Western music videos include artists in embroidered silks with intricate designs on their foreheads.

Globalization affects everything from the way we speak to the web pages we surf. We young people want to be part of a world tribe – but this can result in a universal sameness. We all watch the same television shows, drink the same drinks, and eat the same fast food. I once got in a lift in Germany to find a Chinese girl, my age, wearing the exact same outfit – identical from our jeans and red sweaters down to the Swatches around our wrists!

This simultaneous globalization, cultural sensitization and rapid economic development inevitably implies rampant consumerism. As industries cash in on our desire to join the global tribe, they increase production to feed the market, which in turn expands to create more goods and trends to enable us all to keep up with our peers. It's too easy to forget that outside this consumerist cycle people are going hungry, pollution is causing disease, and plants and animals are disappearing.

Yet the globalization of information and the growth of international communication allow young people to share

Meghna Das (19), from India, studies chemistry, zoology and environmental science at Mount Carmel College, Bangalore University. She was a Bayer Young Environmental Envoy in 2008.



Global Challenge

ideas, network and campaign as never before. The internet is making my generation more environmentally savvy: being green, buying green and voting green is now the height of fashion.

Increasingly, young people are resisting the temptation to spend money and diminish the world's natural resources – considering what we need, not what we want. A balance needs to be struck: environmental problems can't be solved by withdrawing from economic development and stopping industrial growth; nor by a denial of consumerism and refusing to buy. Globalization, consumerism and environmental concerns are all connected – and the solution to them probably lies in their very interconnectivity.

Hope lies with our generation, which has become increasingly sensitized, not just to the world's problems, but to other cultures and the value of diversity too. If we can set the trend of being environmentally friendly, and use our money and our voices accordingly, perhaps this globalized awareness can lead to real change.

## One Hour, No Power



It all started in Australia in March 2007 when 2.2 million Australians and 2,100 businesses turned off their lights for one hour, including the Sydney Harbour Bridge and Opera House illuminations. The blackout – to urge people to take action against climate change – caused such a stir that it was repeated on 29 March 2008, that time with 50 million people in 320 cities and towns across 35 countries dousing their lights.

Sijie Tan, a Rover Scout from Singapore, joined in. 'I decided to put into practice the teaching of our founder Lord Baden Powell – to try and leave the world a little better than you found it. So, with the backing of other Scout organizations from around the world and the help of other Singaporean delegates to the World Scout Youth Forum in Korea, I ensured that our first forum dinner was held by candlelight.'

Inspired by Sijie's determination, and backed by Rod Abson of the World Scout Bureau, Scouts from up to 160 countries will observe Earth Hour 2009.

And they'll not be alone. 'I first got involved in 2007,' Sarah Bishop told TUNZA, 'when I decided to walk the 1,000 kilometres from Brisbane to Sydney to raise awareness of climate change. Along the way, I spoke to thousands of people and was blown away by the number who embraced Earth Hour.'

I still get shivers down my spine when I remember what the first Earth Hour in Sydney was like. For 60 minutes strangers were suddenly connected – we were sending a message to the rest of the world and we knew it was the beginning of something special.

'The beauty of Earth Hour,' Sarah adds, 'is that anyone can take part – through the smallest of actions you are part of a big message. In 2009, in the lead-up to Copenhagen, there has never been a more urgent moment for young people to speak up about climate change. Earth Hour presents many opportunities – to be heard, to take action and to be connected to millions of people all over the world through one simple flick of the switch.'

**Earth Hour 2009 is at 8.30pm on Saturday 28 March. The aim is for 1 billion people in 1,000 cities to take part. Find out more at: [www.earthhour.org](http://www.earthhour.org)**



# The ape that changed my life

The sound of the slow-chugging boat echoed off the surface of the black-water Sekonyer River, deep in the dense Kalimantan rainforest of Indonesian Borneo. I sat exhausted from my long journey from Europe, but alert to the treetops in hopes of glimpsing the elusive red-haired ape I had travelled so far to see – the orangutan.

I had paid \$2,500 plus travel expenses for the privilege of visiting Tanjung Puting National Park – a nature reserve and home to more than 6,000 orangutans – with a volunteer study group. I and two other women were to help record the activities of the apes in the Park and clear up rubbish.

When we finally docked, a pair of adolescent orangutans welcomed us. Former pets, rehabilitated at the Park's centre, they took me by the hand and led me around the rangers' station, where I found a small wire cage. Huddled inside was a frail, hairless baby orangutan, whimpering and rocking. His skin was dry, his eyes sunken and lifeless.

I knew that this baby's mother, as with all orangutan orphans, had been killed by poachers so that he could be sold as a pet. I knew, too, that baby orangutans have a period of childhood second only to that of humans, depending on their mothers for up to nine years, and that primates need constant physical contact and nurturing to thrive. I knew he was horribly traumatized: the very fact that he was alive now was a testament to his resilience. His name was Somalia. Meeting him changed my life.

As a child, monkeys and apes were always my favourite animals, and I wanted to grow up to live with and

study great apes. But my hopes had been dashed by a college lecturer, who said that very few primatologists ever got to work in the field. I took his words to heart, and instead studied English literature and became a teacher.

## Living the dream

Still, I spent my free time reading all I could about primates, and travelled to Africa to see gorillas in the wild. Then, at the age of 27, I saw an advertisement for the trip to Tanjung Puting. I was only there for nine days, but visited Somalia each day. I was hooked: every school holiday found me back there, volunteering to take care of Somalia and other orphaned orangutans. The young ape clung to me as he would have to his mother, even as I bathed. At night I shared my small bed with him and four other orphans needing similar care. I and other volunteers mothered them 24 hours a day, providing affection, teaching them to recognize the forest's edible fruits and leaves, encouraging them to climb trees, and showing them how to avoid snakes and other dangers, so that someday they could be released safely back into the wild.

As years passed and I learned more about the needs of young orangutans, I began to think I could do better. I now know, for instance, that allowing untrained volunteers contact with vulnerable infant orangutans, especially without first undergoing health checks and quarantines, is dangerous and irresponsible. And allowing tourists to be close to the animals disrupts rehabilitation. I, along with another volunteer, Danish-born Lone Droscher, watched as increasing numbers of orphans came in, and learned about the challenges of finding funds to provide for all of them. We also had been told of an area where there were at least 100 orphans being held illegally in homes. There was no rescue centre there,



and we decided that these orangutans must also be saved and returned to the forest.

In 1999, we made our vision a reality. With support from the Borneo Orangutan Survival Foundation, Lone and her then-husband, Odom, opened the Nyaru Menteng Project. Back in the United Kingdom, I founded Borneo Orangutan Survival UK and started contacting potential donors, as the centre relies entirely on private funding.

## Long-term commitment

Fourteen years after meeting Somalia – despite my mother's pleas to 'get a real job' – I am still fighting for orangutan survival, finally quitting teaching in 2005 to dedicate myself full time. But over the years, globalization has changed things drastically. Our centre, originally designed for 100 orangutans, is now bursting at the seams with over 600, making it the largest rescue project in the world.

Why the increase? The demand for palm oil – a cheap and versatile ingredient used in everything from confectionery to soap – has risen tremendously in recent years, and Indonesia and Malaysia meet some 90 per cent of this demand. Meanwhile, European Union and United Kingdom targets for CO<sub>2</sub> emissions reductions through renewable fuels are adding to the pressure. To produce enough biofuel to meet these targets, the demand for palm oil would be so





UNEP

# KEEPING IT WILD

Many of the earliest global environmental agreements focused on wildlife and biodiversity. One of the most important, the Ramsar Convention on Wetlands, dates from 1971, the year before UNEP's establishment. Initiated by the pioneering conservationist Luc Hoffman, it now protects 168 million hectares of 'wetlands of international importance' in more than 150 countries.

Two years later, after a long campaign by the International Union for the Conservation of Nature – IUCN, the world's oldest and largest global environmental network – governments agreed on the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to regulate the world wildlife trade. It currently protects some 30,000 species.

The Convention on Migratory Species, finalized in Bonn in 1979, aims to conserve migratory species – whether terrestrial or marine – throughout their often enormous ranges. Under its auspices, and in cooperation with the Great Apes Survival Project, 2009 has been designated the International Year of the Gorilla.

The overarching Convention on Biological Diversity was agreed by world leaders at the 1992 Rio Earth Summit. Its target, 'to achieve, by 2010, a significant reduction of the current rate of biodiversity loss at the global, regional and national level', will not be met in the face of overwhelming destructive pressures, but the rate of habitat loss has slowed in some areas of the world.

And at the turn of the millennium, the Parties to the Convention adopted the Cartagena Protocol, which lays down that countries should be given adequate advance information before agreeing to import genetically modified organisms.



great that it could mean the end for rainforests in Indonesia and Malaysia, with devastating effects not only on orangutans, but on the world, due to the impact of deforestation on global climate.

As their forests become ever more fragmented by encroaching oil-palm plantations, orangutans' food supplies dwindle, and the hungry animals venture into the plantations to tear open the young oil palms to get at the inner shoots. So besides being poached for their babies, orangutans are now also regarded as a pest. A bounty of up to \$20 is often offered to migrant workers for the head of an orangutan, while the babies are still sold into the pet trade.

## Addressing the cause

Although the Nyaru Menteng Project rescues wild orangutans from oil-palm plantations in large numbers, and has released more than 400 of them, the cause of the problem must also be addressed. The Roundtable on Sustainable Palm Oil calls for companies voluntarily to comply with a set of criteria for sustainability – including not converting orangutan habitat into oil-palm plantations. The first producers have recently been certified as



Sam Gracey/Borneo Orangutan Survival

sustainable. If the process works, consumers may soon be able to demand these products. Just as worldwide demand for palm oil has driven orangutans to the edge of extinction in the wild, demand for sustainable palm oil may provide hope for averting that fate.

Somalia, meanwhile, is now nearly adult and living somewhere free in the forest of Tanjung Puting National Park. But for how long? Much of the Park has been handed over to a palm-oil company. Conservationists warn that the orangutan may become extinct in the wild in three, five or 10 years – but I believe that if efforts like ours are supported, and global consumers make the right choices, then there is hope for Somalia and all orangutans.

*Michelle Desilets is the Founder of Borneo Orangutan Survival UK and International Campaigns Director for Borneo Orangutan Survival International.*

**Find out what YOU can do!**  
**Visit <http://savetheorangutan.org>**



# Back on track

Deia Schlosberg (28) and Gregg Treinish (26) set off for a long walk in the summer of 2006 – down the length of the Andes. The pair, both wilderness educators from Montana, trekked for some 12,550 kilometres – often on

forgotten and ancient paths, and sometimes no path at all – through five countries and a myriad of ecosystems. Sometimes fighting exhaustion and illness, they kept friends, family and fans back home abreast by posting photographs and blogs on the internet. At the end of their journey – at Cabo San Pío, near the southernmost



**W**e had no idea what we were getting ourselves into. The plan was to hike down the Andes mountain chain, running along the western edge of South America. Our vision was to learn more about how people live in the Andes and, more specifically, about their sustainable ways of living, so that we could return to the United States of America to teach about such ways of life. In the end, we did end up learning this – plus a whole lot more. It was also way more challenging than we could ever have imagined.

In two years we walked through Ecuador, Peru, Bolivia, Chile and Argentina, at every elevation, from sea level up to 6,000 metres; through the Atacama, the driest desert in the world; through the Amazon rainforest; and over glaciers – many of which were receding through global climate change. It was extremely difficult to find our way, as we had poor maps,

and often there were no trails to follow. We pushed through heat, ice, cactus, illness, lack of food, flooded canyons, deep mud, angry dogs and lots of puzzled stares.

We were mostly in remote areas with very few people, so we interacted a great deal with everyone we did come across. We'd talk to herders, stay with subsistence farming families and share tea with miners working in the hills. Sometimes we passed through cities, where we'd talk with everyone we met to learn more about their culture and understanding of the world.

We often found that people were profoundly connected to the land, understanding how to work with the earth, and how to take care of it so their crops and animals thrive. Many we met live in much the same way as did their ancestors. Knowledge has been passed down through their families for hundreds of years. They

know what works for the planet and for themselves – and what doesn't.

What struck us most was how little people really need. People in the Andes don't have the Blackberries or HDTVs that so many others in the world find necessary, yet they have more than enough for a healthy, happy life. Many families build their houses of adobe and straw, materials collected straight from the land. They make their clothes from the wool of their sheep, and grow crops and raise animals for food. They don't rely on goods shipped from all over the world. We learned that products that many of us in the developed world take for granted are really things that we don't need for survival.

Now, back home, we're sharing what we saw, hoping to inspire others to think more about their everyday decisions and of ways in which they can lighten their own footprints.

tip of South America – they became engaged. National Geographic awarded them 2008 Adventurers of the Year, and they are now speaking and writing about their travels. They told TUNZA how the experience changed their perspectives on nature, globalization and how we live on Earth.



Deia Schlosberg

We also learned another valuable, but more unexpected, lesson: people in the Andes admire and follow countries like the United States and the United Kingdom. Most of the television shows watched by the people we met are North American, and they tend not to teach the best values. It was clear that this was causing rapid changes in attitudes, trends and lifestyles in South American culture. We realized that the way we live in developed countries affects the behaviour of everyone watching, too. Perhaps, if we start to recycle more and consume fewer clothes and gadgets, for example, other countries will see and follow us in the new direction.

Paradoxically, reversing the trends of overconsumption would take these cultures back to a mindset that many are just now discarding. Many of the people we met already have the answers to a healthier planet – they just have to trust themselves.

To read the blog Deia and Gregg wrote during their journey, visit

→ [www.acrosstheandes.com/journal.html](http://www.acrosstheandes.com/journal.html)

## SELF-STARTING

*TUNZA loves to hear from its readers about what they've been working on. Here are some examples of local initiatives taken up by Bayer Young Environmental Envoys.*

'Oil spills are common, but it's difficult to clean oil from the ground because it attaches itself to soil particles. I have developed a biosurfactant, made from a yeast called *Candida glabrata* and vegetable fat waste, that interacts well with both water and oil-based particles. Thrown onto a contaminated area, it captures the oil, making a liquid globule that can be removed from the soil. The biosurfactant can then be separated from the oil – and both can be recycled. I hypothetically applied my technique to a real spill that happened in Lebanon in 2006 where remediation cost \$40 billion: using my method, it would have cost only \$5 billion and been just as effective. I've sent my findings to the Brazilian oil company Petrobras, as the next step is to test the technique on a larger scale.'

*Carolina Arruda Buarque de Gusmão (24), Brazil*

'I created an 8-hectare marine sanctuary on Panglao Island in the Philippines to protect its coral reefs and fish, coordinating with the Bureau of Fisheries and Aquatic Resources and my university to demarcate a no-fishing zone and produce artificial coral reefs made of tripod-shaped cement. I helped put them into place myself. My ultimate goal is to develop the sanctuary as an ecotourist destination, so that the profits from visitors around the world can help maintain it.'

*Marie Nickie Bolos (20), Philippines*

'The world is seeking biofuel that isn't too expensive – economically or ecologically. I'm studying the potential of green microalgae *Haematococcus pluvialis* for photobioreactor production in Peru's coastal desert regions, where solar energy is plentiful and seawater is available for the production process. Locating biofuel plants in deserts avoids using arable land. *H. pluvialis* fixes CO<sub>2</sub> very efficiently, and the fast-growing algae can be used for biofuels and animal feed. It also contains a powerful antioxidant called astaxanthin, consumed as a dietary supplement. This process could produce valuable products at a competitive cost, and even create much-needed jobs locally.'

*Juan José Aponte Ubillús (20), Peru*

'Indonesia produces a vast amount of oil-palm waste, which, when not processed, releases methane into the atmosphere. I have developed a way of using it for biogas by adding poultry manure – another plentiful agricultural waste – to speed up fermentation. The next step is to implement the technology in my community of Pontianak, West Borneo, and beyond. If successful, it will stop people cutting down trees for firewood, make good use of waste, and avoid emissions of methane, which is a powerful greenhouse gas.'

*Sri Rezeki (23), Indonesia*





# MATERIAL GAINS

How people choose to spend money – or not – can make a big difference.



## Giving hope

Giving, as the saying goes, is better than receiving, and many charities have now found a way to make even recipients of presents give too. Instead of getting a traditional gift, they receive a card saying that the money that would have been spent on them has instead gone to improve someone else's life. The 'Plant a Tree' gift provides 25 seedlings to farmers in a deforested country like Ethiopia to improve the land and provide fruit and nuts. 'Rainwater Collection' enables a family to get clean water. A 'Goat Couple' will breed and provide milk and dung for fuel and fertilizer, giving a family the chance to lead a self-sustaining lifestyle. Other options will give a child sight through a trachoma operation, reunite a family split by war, or even provide a donkey-drawn mobile library for schools. The charities set out to make them intriguing, imaginative and 'a jolly way of showing affection'.

[www.goodgifts.org](http://www.goodgifts.org)

[www.oxfam.org.uk/shop/Hub.aspx?catalog=Unwrapped](http://www.oxfam.org.uk/shop/Hub.aspx?catalog=Unwrapped)



## Spinning the news

'Newspaper wool', or Indruk – a yarn spun from old newspapers – can be used to weave curtains, rugs and clothes. Its Dutch designer, Greetje van Tiem, claims that a single page can produce up to 20 metres of the thread. All you need is paper, scissors, a spindle, and lots of time. Instructions can be found at <http://greenupgrader.com/2138/handspun-recycled-newspaper-yarn>.

[www.greetjevantiem.nl](http://www.greetjevantiem.nl)



## Nutty soap

Many commercial laundry detergents contain chemicals and petroleum-based scents that are slow to biodegrade and can be toxic to fish, humans and animals. The south Indian soap nut (*Sapindus trifoliatus*), which has been used as a washing agent for centuries, contains none of these. When added to water, it releases natural detergents called saponins, forming non-allergenic suds. It also makes liquid soap for use in showers, for example; the nuts are put in water to make the solution, and a drop of essential oil is added for perfume. Eight pods in a cloth bag put into a washing machine will do the laundry: 250 grams of soap nuts cost approximately \$9 and last for 30 washes. And the nuts are compostable, cultivated by sustainable agriculture and come without packaging.

[www.greenrewards.co.uk/Item/Soap-Nuts\\_\\_\\_AKA45.aspx](http://www.greenrewards.co.uk/Item/Soap-Nuts___AKA45.aspx)

[www.infojardin.com/foro/showthread.php?t=18068&page=3](http://www.infojardin.com/foro/showthread.php?t=18068&page=3)

[www.noix-de-lavage.ch/info.php?info=23d\\_203](http://www.noix-de-lavage.ch/info.php?info=23d_203)



## Mobile power

These gadgets do just what it says on the packet. Mobile phones with run-down batteries can be revived anywhere without the need for electricity. Rotating the handle for a few minutes provides enough power to use your phone for half an hour.

[www.paramountzone.com/rphone.htm](http://www.paramountzone.com/rphone.htm)

[www.elasio.ch/shop/achat/produit\\_details.php?id=1100](http://www.elasio.ch/shop/achat/produit_details.php?id=1100)

[www.gizmodo.es/2006/11/23/windup\\_torch\\_and\\_phone\\_charger.html](http://www.gizmodo.es/2006/11/23/windup_torch_and_phone_charger.html)



## Shirt stories

A T-shirt generates 28 times its own weight in carbon emissions when the energy used in making it and its dyes, and in transporting it is taken into account. And cotton is one of the world's most pesticide- and water-intensive crops. Re-Shirt circulates existing clothes internationally for reuse to improve on recycling cotton, and aims to entertain at the same time. T-shirts are donated to the company, complete with a story from their previous life. They are then donated and re-donated to the site until a whole history of a garment's use has been catalogued online, as well as on a label on the shirt. 'Re-Shirts represents a unique world-wide economic experiment,' says the company. 'At the centre of it are the used T-shirts and a simple question: Do products last longer if you know their history?'

[www.re-shirt.net/](http://www.re-shirt.net/)

[www.harmoniousliving.co.za/Environment/Eco-Friendly/Your-Carbon-Footprint-Check-the-Labels/](http://www.harmoniousliving.co.za/Environment/Eco-Friendly/Your-Carbon-Footprint-Check-the-Labels/)





UNEP

# CHEMICAL REACTIONS

In the late 1980s, stricter regulations in industrialized countries led to 'toxic traders' shipping hazardous wastes to developing countries and Eastern Europe. International outrage, and action by UNEP, led to the adoption of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal in 1989. The Convention sets out to control such shipments and to promote the 'environmentally sound management' of wastes by minimizing their production wherever possible, and by encouraging their sound management as close as possible to where they are produced.

In 1999, Parties to the Convention also adopted a Protocol on Liability and Compensation for damage from accidental spills.

At about the same time, governments moved to improve trade in hazardous chemicals and pesticides and to promote their environmentally sound use by agreeing the 1998 Rotterdam Convention. It rests on the principle of 'prior informed consent': countries have to tell other Parties of bans and restrictions they place on the substances, and to inform those to which it plans to export them.

And the Stockholm Convention, adopted in 2001, requires governments who ratify it to take measures to eliminate or reduce the release of persistent organic pollutants. These long-lasting chemicals, which are able to travel for thousands of miles and accumulate in the fatty tissues of both humans and wildlife, can have severe consequences for health, including cancers, birth defects, 'gender-bending' effects, damage to immune systems causing greater susceptibility to disease, and even diminished intelligence.



## Final cup

In the United States alone more than 16 billion paper cups a year are estimated to be thrown into landfill sites, where they increase methane emissions. Most are not even made from recycled paper. Even some that claim to be recycled have only been laminated with polyethylene to strengthen the cups and stop leakage – which means they cannot be recycled after use. A reusable ceramic thermal cup with a silicon lid provides an alternative.

[www.nigelsecstore.com/acatalog/l\\_m\\_Not\\_a\\_Paper\\_Cup.html](http://www.nigelsecstore.com/acatalog/l_m_Not_a_Paper_Cup.html)

[www.a-d-o.fr/index.php/2008/01/24/409-i-am-not-a-paper-cup](http://www.a-d-o.fr/index.php/2008/01/24/409-i-am-not-a-paper-cup)

[www.elgranchef.com/2008/01/25/i-m-not-a-peper-cup/](http://www.elgranchef.com/2008/01/25/i-m-not-a-peper-cup/)



## Shrinking shoeprints

Shoes have a big environmental footprint. They are traditionally made of many materials – rubber, leather, plastic and resin – that require production and transport, and are hard to recycle. The recent popularity of single-component shoes, such as Crocs, is starting to reverse that trend; if Crocs are returned to the company it recycles them into playground flooring. Brazilian company Melissa goes one step further, making shoes from a proprietary plastic material called Melflex – and, more recently, from rubber – that is both recycled and recyclable. And its factories recycle nearly all of their water and waste.

[www.melissaplasicdreams.com](http://www.melissaplasicdreams.com)

[www.crocs.com](http://www.crocs.com)



## Push my button

A single computer monitor left on overnight uses as much energy as a laser printer producing 800 A4 copies. And some 1.8 million PCs are left on overnight in the United Kingdom alone, wasting 700,000 tonnes of carbon. The Ecobutton – attaching to computers or laptops via a USB cable – acts as a visual reminder to save electricity. Hitting the button when stopping work puts the computer into sleep mode, saving energy without losing data. Pressing it again automatically reactivates the computer at the point where it left off. And it comes with software that tots up how much energy – and money – is saved each time it is used.

[www.eco-buttons.co.uk/store/index.php?act=viewProd&productId=2](http://www.eco-buttons.co.uk/store/index.php?act=viewProd&productId=2)

[www.ethicalsuperstore.com/products/ecobutton/ecobutton-for-pc39s--laptops](http://www.ethicalsuperstore.com/products/ecobutton/ecobutton-for-pc39s--laptops)

<http://gizmologia.com/2008/02/eco-button-ungadget-totalmente-inservible-hecho-boton>

[www.neomansland.org/article-16149785.html](http://www.neomansland.org/article-16149785.html)



## Free to a good home

Freecycle Network hooks up people who are looking for something with others in their area who want to get rid of it – furniture, clothes, toys, electrical goods, food, plants, vehicles, garden and building items – anything that would otherwise go to landfill. First founded in Tucson, Arizona, in 2003, the non-profit internet service has since grown to 4,642 groups with over 6 million members across 85 countries – from Bangladesh to Bolivia, from Finland to Fiji, from Nepal to Nigeria – and keeps more than 500 tonnes of rescued rubbish out of landfills a day. Its philosophy, 'a free cycle of giving', emphasizes building sustainable local and global communities. Those without a local group can become Freecycle's volunteer moderators and start their own.

[www.freecycle.org](http://www.freecycle.org)

<http://fr.freecycle.org/accueil>



# 7 global thinkers



Born exactly 200 years ago, Charles Darwin fundamentally changed the way people looked at the world, placing humanity firmly in the global family of life. *On the Origin of Species*, published in 1859, described evolution by common descent, through natural selection. Though the concept of evolution was not new, Darwin was able to demonstrate his theory with specimens and data he had collected on the undisturbed Galapagos Islands during his research voyage around the world on the *Beagle*. He went on to write *The Descent of Man*, in which he described human evolution, causing shockwaves by pointing out that humans are descended from apes. Writing at a time when science was already questioning accepted thinking in geology and biology, he showed that all life shares a common history and destiny.

## Founding father



Rich Blundell Omniscopic 2000-2006

## Web for life



Floor/Flickr

Environmentalists – often surprisingly techie people – were one of the first groups to exploit Tim Berners-Lee's creation, the World Wide Web, and it has enormously increased their ability to marshal information from around the globe and to coordinate worldwide campaigns. It started when Berners-Lee, frustrated at trying to communicate with scientists around the world working with different hardware and software, wondered whether all information on Earth could be linked and made easily accessible. He created the web in 1989 while working at the CERN nuclear physics laboratory near Geneva, as a way to publish, read and navigate between 'pages' of information over the internet – the infrastructure of networked computers originally dreamed up by the US Department of Defense in the late 1950s as a way to communicate in case of nuclear war.

What do you do when you've won the most votes but still are not elected as President of the United States? 'It was quite a blow,' admits Al Gore. But eventually he picked himself up, went down to the grassroots and created a global momentum for action on climate change. He had been concerned about global warming since studying under the pioneering climate scientist, Roger Revelle, though little action was taken while he was Vice-President. After his defeat, he put together a slideshow and showed it more than 1,000 times at meetings large and small around the United States to raise public concern. Filmed as *An Inconvenient Truth*, it was a surprise box office success and Oscar winner. Alongside the film he set up The Climate Project, training an ever-increasing army of volunteers to spread the word, and in 2007 he won the Nobel Peace Prize.

## Victory from defeat



The Climate Project



## Banking on the poor

You need money to make money, but traditional banks don't extend credit to those with nothing. Yet a loan of less than \$100 can transform the life of a poor family, enabling it to buy raw materials for crafts or chickens to produce eggs to sell. Mohammed Yunus has proved it. In the 1970s the Bangladeshi economics professor started lending tiny amounts of money, on affordable terms, to villagers with no collateral. Such 'micro-credit' allowed the poor to work their way out of poverty and build small businesses, and they proved scrupulous in repaying the loans. By 1998 the Grameen Bank, which Yunus established in 1976, was enabling 10,000 people to escape poverty every month. Now some 7,000 microcredit institutions worldwide serve 16 million clients. Yunus, who won a Nobel Peace Prize in 2006, says: 'Poverty is created by the world around us.'



Goetz Schleser/VISUM/Still Pictures

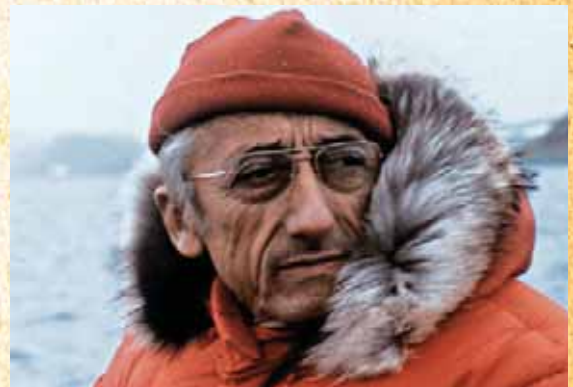
## Green peace



Alan Dater & Lisa Merton/Marlboro Productions

When Wangari Maathai was growing up in Nyeri, Kenya, the area was so green that there was no word in the local language for desert. Now the trees have been cut down and the spring from which she drew water has gone. She has now done more than anyone to reverse the process worldwide, moving from local action to global campaigning and, in 2004, becoming the first environmentalist to win the Nobel Peace Prize. Her Green Belt Movement, begun in 1977, planted more than 20 million trees in its first two decades, and spread to other countries. It inspired UNEP to launch its Billion Tree Campaign in 2007. So far 2.6 billion trees have been planted – with 4.4 billion more pledged – across 166 countries. The target has now been increased to 7 billion trees planted by December 2009, when the crucial climate change negotiations are to take place in Copenhagen.

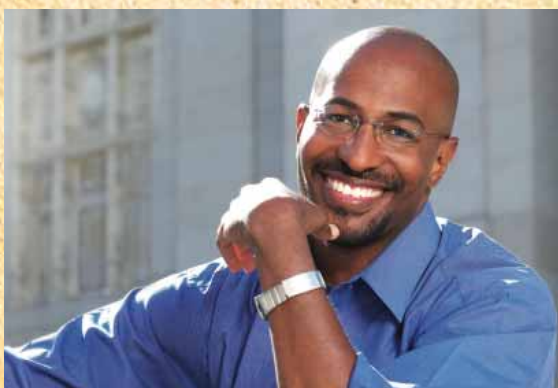
## Underwater vision



Capitol Hill Blue

Jacques-Yves Cousteau (1910-1997) did more than anyone to bring the world's oceans into the lives – and living rooms – of its people. Starting diving in the 1930s while in the French navy, he co-designed the wearable aqualung – the precursor of modern scuba gear – and began pioneering underwater filming, winning a Cannes Film Festival award for his film *Wrecks* in 1946. Four years later he got his own craft, *Calypso*, and converted it into a floating research lab and film studio, using it to explore the oceans and make documentary films, which got worldwide audiences. Their popularity enabled Cousteau to campaign vigorously on behalf of the world's seas. In the early 1970s, he founded the Cousteau Society, which raises funds for ocean exploration, research and conservation, and promotes respect for the waters that cover the world's surface.

## Low-carbon collar



Richard Hume/Experience Life magazine

Creating green jobs has suddenly become a priority worldwide, and Van Jones has been right out in front. A civil rights lawyer who co-founded a pioneering centre in Oakland, California, to keep kids off the street and out of jail, he saw that building a low-carbon economy could put millions of the unemployed to work. He got Oakland to provide \$250,000 to fund the first ever Green Jobs Corps to train low-income young people in the renewable energy, green construction and organic food industries – and then helped persuade Congress to pass the 2007 Green Jobs Act pledging \$125 million to train 36,000 people a year. President Obama has now launched his own programme to create millions of new green collar jobs. 'It's not charity,' says Jones, who has written a best selling book, *The Green Collar Economy*. 'It's the smartest thing we can do.'





**TUNZA = CHERISH**  
**our global village**