

# Our Planet

TSAKHIA ELBEGDORJ TIME WAITS FOR NO MAN RACHEL KYTE TALE OF TWO RIOS  
HRH PRINCESS LALLA HASNAA BUILDING A GREEN SOCIETY SIMON UPTON BEYOND GDP



United Nations Conference  
on Sustainable Development

Rio de Janeiro, Brazil - 20 - 22 June 2012



GOVERNO DO  
**BRA**  
PAIS RICO E PAIS S



# Rio+20

## Where the World Stands Now



## Our Planet,

the magazine of the United Nations Environment Programme (UNEP)

PO Box 30552, Nairobi, Kenya

Tel: (254 20) 762 1234

Fax: (254 20) 762 3927

e-mail: [unepub@unep.org](mailto:unepub@unep.org)

To view current and past issues of this publication online, please visit  
[www.unep.org/ourplanet](http://www.unep.org/ourplanet)

ISSN 1013 - 7394

Director of Publication: Nick Nuttall

Editor: Geoffrey Lean

Coordinator: Jonathan Clayton

Distribution and Marketing Manager: Mohamed Atani

Design: Amina Darani

Layout: William Orlale

Produced by: UNEP Division of Communication  
and Public Information

Printed by: Progress Press

Distributed by: SMI Books

The contents of this magazine do not necessarily reflect the views or policies of UNEP or the editors, nor are they an official record. The designations employed and the presentation do not imply the expressions of any opinion whatsoever on the part of UNEP concerning the legal status of any country, territory or city or its authority or concerning the delimitation of its frontiers or boundaries.

\* All dollar (\$) amounts refer to US dollars.



2012 INTERNATIONAL YEAR OF  
**SUSTAINABLE ENERGY  
FOR ALL**

UNEP promotes environmentally sound practices globally and in its own activities. This report is printed on paper from sustainable forests including recycled fibre. The paper is chlorine free and the inks vegetable-based. Our distribution policy aims to reduce UNEP's carbon footprint.

PAGE 6



**TSAKHIA ELBEGDORJ: TIME WAITS FOR NO MAN**

Immediate action is needed to rectify the unfair distribution of wealth and move to a smart, green economy.

PAGE 8



**HRH PRINCESS LALLA HASNAA: BUILDING A GREEN SOCIETY**

Education and awareness are key factors in the transition to a green economy.

PAGE 10



**JEREMY RIFKIN: THE THIRD INDUSTRIAL REVOLUTION**

A New Economic Vision for a Sustainable World.

PAGE 14



**RACHEL KYTE: TALE OF TWO RIOS**

Informal processes around the summit showed that the world will not wait for international agreement before taking much-needed action.

PAGE 16



**SIMON UPTON: BEYOND GDP**

Measuring well-being and progress towards green growth.

PAGE 22



**FRANCES BEINECKE: ENERGY PULSE**

Citizen energy and concrete action provide the way forward from Rio+20.

PAGE 24



**ASHOK KHOSLA: TWO DEADLY DISEASES**

'Affluenza' and 'povertitis' are destroying societies, economies and the environment and fundamental changes of priorities are needed.

PAGE 26



**FABIO BARBOSA: DOING IT RIGHT**

The long, but necessary, journey to sustainability in the financial service industry.

PAGE 30



**RANJANA KUMARI: GREEN BUT TOO MALE**

Women are being excluded from the green economy, and they must be given the same opportunity as men to participate in it.

**ALSO**

BOOKS	PAGE 4	UNEP AT WORK	PAGE 20
REFLECTIONS	PAGE 5	PEOPLE	PAGE 28
UNEP AT WORK	PAGE 18	INNOVATION	PAGE 32
WWW/NUMBERS	PAGE 19	STAR	PAGE 34

# books [www.unep.org/publications](http://www.unep.org/publications)



## The Fifth Global Environment Outlook (GEO-5)

In 1995, in support of UNEP's unique mandate within the UN system to keep under review the world environmental situation, (GA resolution 2997 of December 1972), the UNEP Governing Council requested a new, comprehensive report on the state of the world environment. The tool that UNEP employs to do this is the Global Environment Outlook or GEO. GEO is a process of conducting a global integrated environmental assessment that delivers the best available scientific findings to policy makers so that they can make informed decisions. In this way, the assessment bridges the science and policy realms. GEO is also a product. Using integrated environmental assessment (IEA) methodology, UNEP has produced a series of GEO reports which have analyzed environmental state and trends at the global and regional levels, described plausible outlooks for various time frames and formulated policy options. Each GEO report builds on the assessment findings of its predecessor and also draws from lessons learned on process.



## Fresh Water for the future: A synopsis of UNEP activities in water

In brief, the publication gives a snapshot of the significant contribution that UNEP and its partners have made around the world in protecting our limited fresh water resources for the improvement of livelihoods, focusing on the ecosystems approaches in line with its mandate. Case studies range from on-ground intervention to normative work at national, regional and global level. The cases presented here illustrate UNEP's work at the global, regional, national, catchment and sub-catchment levels. No effort has been made to depict regional balance of the cases presented.

## Sustainable Consumption and Production for Poverty Alleviation



This paper explores the type and quality of linkages between the objective of achieving sustainable consumption and production (SCP) patterns, and those of poverty alleviation and sustainable development. The paper constructs a theoretical framework based on the analysis of development specialists, as well as scenarios and empirical data which show how natural resources and the environment underpin development efforts. A number of case studies in key economic sectors — including energy, agriculture, waste management and urban development — are provided to validate this theoretical framework. These case studies identify, and where possible quantify, the combination of economic, social and environmental gains secured by shifting towards SCP patterns. The relationship between indicators of development and SCP is also explored, highlighting important overlaps and complementarities between them. The paper's conclusions highlight the economic and social gains for developing countries from the shift to SCP, which also sustains nature's productive ecosystems.



## Global Environment Outlook 5 for Local Government: solving global problems locally

GEO-5, the latest in the GEO series, released in June 2012, provides an assessment of the state and trends of the global environment in relation to internationally agreed goals; evaluates the gaps and barriers in their implementation; and provides policy options that have the potential to speed-up realization of these goals.

## Blue Carbon - First Level Exploration of Blue Carbon in the Arabian Peninsula



Healthy natural coastal ecosystems such as mangrove forests, saltwater marshlands and seagrass meadows provide a vast array of important co-benefits to coastal communities around the world, including throughout the Arabian Peninsula. These benefits include ecosystem services such as a rich cultural heritage; the protection of shorelines from storms; erosion or sea-level rise; food from fisheries; maintenance of water quality; and landscape beauty for recreation and ecotourism. In a Blue Carbon context these ecosystems also store and sequester potentially vast amounts of carbon in sediments and biomass.



**Achim Steiner**

UN Under-Secretary-General and  
Executive Director, UNEP

This year's UN General Assembly, starting in September, takes on special significance for UNEP – and for the urgency of accelerating sustainable development – as member states begin to act on the decisions of June's Rio+20 summit, contained in the Future We Want.

A key area of focus will be defining and establishing a set of Sustainable Development Goals (SDGs) that can bring developed and developing nations into a new era of cooperative action. UN Secretary-General Ban ki-Moon recently announced the Sustainable Development Solutions Network – a new independent global network of research centres, universities and technical institutions – to provide ideas and solutions. This will support a High-Level Panel, which will report next year on the post-2015 development agenda.

Other potentially positive outcomes of Rio+20 include a ten-year framework on sustainable consumption and production covering fields from tourism to 'agri-food' (including food waste and losses) and sustainable procurement.

Across the OECD group of countries, public procurement totals over US \$4,700 billion annually, close to 20 per cent of GDP. In developing countries the proportion can be slightly higher. In India, for example, government procurement is worth about US \$300 billion and is expected to grow by more than 10 per cent annually.

During Rio+20 over 30 governments and institutions – including Brazil, Denmark, Switzerland and UNEP – announced a new global International Sustainable Public Procurement Initiative (SPPI), aimed at scaling-up the level of public spending on goods and services that maximize environmental and social benefits.

Another decision – to work towards a new global indicator of wealth that goes beyond GDP's narrowness – requests the UN Statistical Commission to work with other UN bodies, including UNEP, to identify new approaches for measuring progress. Its work will draw on a range of assessments and pilot projects ongoing across the globe.

Several countries – including Brazil, Colombia, Germany, India and the United Kingdom – have carried out national assessments of the value of their 'natural assets' – or are doing so – drawing on work done globally by The Economics of Ecosystems and Biodiversity, hosted by UNEP. And Inclusive Wealth – based on the World Bank's Adjusted Net Saving indicator – is developing a more inclusive indicator of national wealth, covering not only produced capital, human capital, and natural capital, but also critical ecosystems.

Rio+20 also encouraged governments to push forward on requiring companies to report their environmental, social and governance footprints: this builds on the work of the UNEP Finance Initiative and the Global Reporting Initiative-co-founded by UNEP.

Meanwhile, the World Congress on Justice, Governance, and Law for Environmental Sustainability – hosted by the Brazilian Supreme Court and UNEP in partnership with a number of international organizations – committed to use international and national laws to advance sustainability, human and environmental rights and implementation of environmental treaties.

Strengthening and upgrading the environment programme of the UN, including its financial resources, will also be an important upcoming issue – not least for those nations backing a transition towards an inclusive Green Economy as an important pathway to a sustainable century.

Rio+20 also agreed that UNEP should have universal membership and a more active role at the regional and national level; and that it should build on its science-policy interface – including through its flagship Global Environment Outlook process – and on mechanisms to better engage civil society ranging from farmers and women to indigenous peoples, business, scientists and local authorities.

The outcome of Rio+20 fell short of many expectations: in the light of scientific realities, people's day-to-day struggle simply to survive, the analysis of where development is heading for seven billion people, and the inordinate opportunity that exists for a different trajectory.

However, if nations, companies, cities and communities can move forward on the positive elements of the Summit's outcome at the General Assembly this may assist in realizing one day the Future We Want.



CHAMPIONS  
OF THE EARTH



**TSAKHIA ELBEGDORJ**  
President of Mongolia and 2012  
UNEP Champion of the Earth

# Time waits for no man

Living our lives and attending to our chores, we realized one day that our big human family had grown to five, then to six, and now to more than seven billion – and that as never before life on earth is drastically changing. Industrialization and human activities have led to increased greenhouse gas emissions. Global warming and climate change are now established realities with direct impacts on people's day-to-day livelihoods, income and earnings and on the economic and development policies of countries.

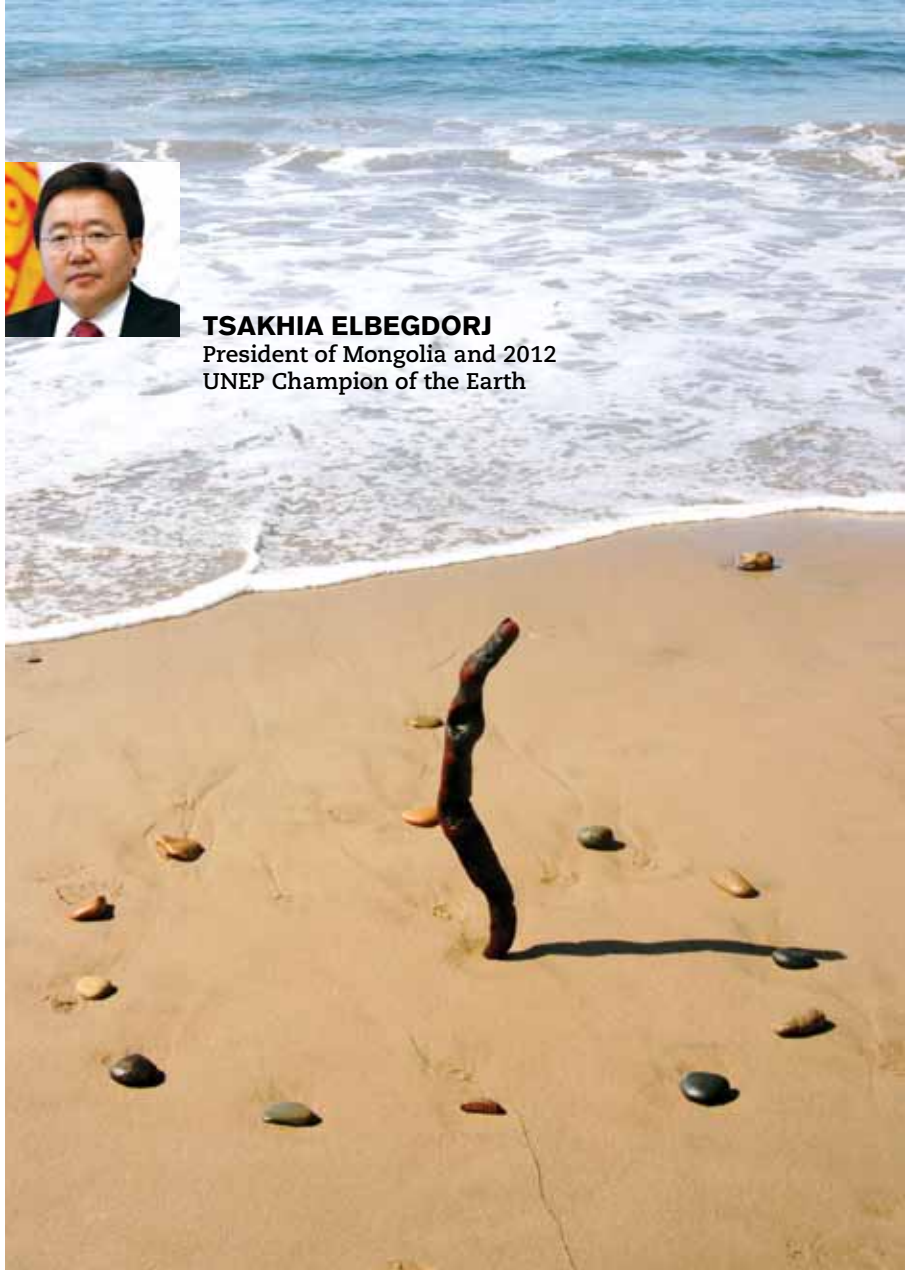
Let me cite specific examples from emerging realities in Mongolia. Ours is one of the few countries with traditional nomadic livestock breeders. They constantly remind me that the drastic environmental changes of the past several

decades are making it more and more challenging for them to pursue their way of life, the origin of which dates back millennia. Thousands of young people move to urban centers in search of less risky occupations. This has become a global, worldwide phenomenon. More than half of all humankind now resides in urban and settled areas, making those cities, towns and villages mines of massive air, water and soil pollution.

Is it only climate change and global warming that contribute to the state of affairs in which we find ourselves? What are the other contributing factors? The answer is “yes, it is climate change” but exacerbated by

unfair distribution of resources and low valuation of labour. The labour of an agricultural worker – who produces food, vital for human needs – is valued extremely low. People do not really rush to the cities because they like urban luxuries, but simply because pay is higher and so the chances of higher incomes are greater. This is the primary reason for the flight to the cities and urban areas.

Yet cities have their headaches too – traffic jams, public transport, air pollution, waste management, criminality, water supply, refining and cleaning facilities – which take up the lion's share of their budgets.



Many cities are under severe pressure from such accumulated problems. The huge costs and expenditures needed to support a city inflate its cost of living. Since costs are high, salaries have to keep up with their pace of growth.

Compared with an agricultural worker, producing vital food, a city dweller's real productivity is low. What, for instance, is the real productivity of a young man distributing commercial leaflets in a city street? Nothing but distributing papers, which, at most, are briefly glanced at by strangers and end up in trash bins. Yet can this be seen as a responsible and needed job in an era of fiercely competitive consumer economics? Surely, yes. Careful analysis reveals the leaflet to be a product of the creative business community designed to encourage artificial demand and consumption perpetuating consumerism.

A survey revealed that 30 per cent of the food in the fridges of homes in developed countries is wasted. In developing countries, by contrast, millions of children are starving. If you browse through old photos, you won't see many obese people. In the past, luxury trends and fashions – too much comfort – were not as prevalent as today. The race to comfort and luxury might eventually lead to a situation where obesity poses a real threat to humankind.

This will worsen if we do not act today. The more the global population grows – to 10, 20, 30 billion – the more people will want to use, the more luxury and comfort will be sought. Why, after all, would future generations not want to live as affluently as their predecessors? But will our earth – our home – be able to carry that burden? To meet that gigantic demand, humankind would need

colossal amounts of energy, clean water, food. If we do not change our lifestyles now, what will happen to the rates of emissions, of food and water consumption when humanity starts consuming two, three or four times as much?

What should we do now? What actions do we have to take? Will we sit idle, counting our problems, leaving the issue to the future? If we believe the time has come to change to ensure humankind's sustainable development, let us speak up openly and take bold and courageous action.

One solution is obviously renewable energy. Mongolia has committed herself to developing it, and our first 50 Mwt private independent wind power station is being built. We will also explore opportunities to develop Gobitech and Asia Super Grid renewable energy mega-projects.

These will synergize regional political and economic cooperation and have huge benefits for sustainable development and environmental conservation by securing reliable energy supplies, and reducing greenhouse gas emissions. The emerging realities in Mongolia are a microcosm and reflection of what is happening globally. Though the country's 1.56 million square kilometers of land ranks it as the 18th largest, its 2.75 million people makes it 118th in population size. Forty six per cent of our population resides in our capital city, Ulaanbaatar, which takes up only 0.3 per cent of our total territory. It is most the polluted city in

the world. Is that a healthy development? Of course not. It reflects both our and humankind's mistaken policies. We, the politicians and decision-makers, have to rectify this immediately.

Our road map for future action has to be based on accurate research, studies, methodologies and facts: it must be founded upon science, knowledge and sound and objective policies.

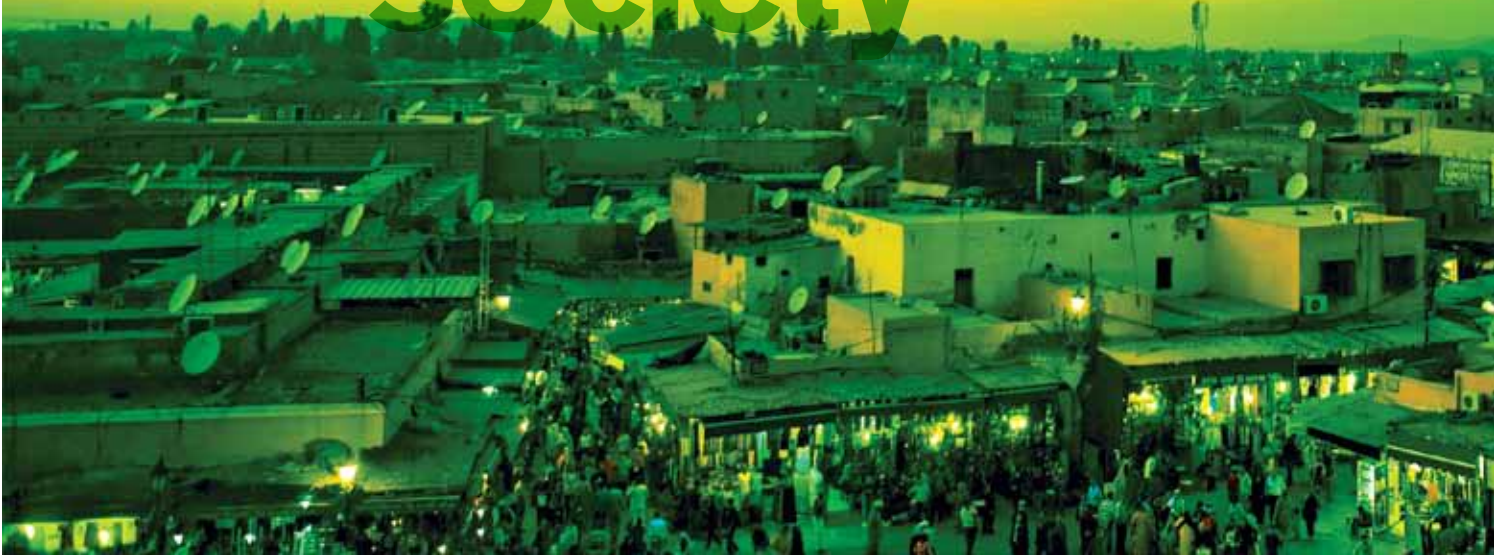
*“The more the global population grows — to 10, 20, 30 billion — the more people will want to use, the more luxury and comfort will be sought. Why, after all, would future generations not want to live as affluently as their predecessors?”*

Anything in life is measured. We need to develop an index of sustainable development, which would take into account education, life expectancy, per-capita clean water, food, energy, per-capita internet access — and an indicator for fair distribution of wealth, best calculated by

comparing GDP per capita with the population's average real income. Obviously, our scholars would further develop all this, but these are the indicators of the essential physiological and development needs of a human being.

We must take bold and aggressive steps immediately to rectify the unfair distribution of wealth, to introduce a realistic valuation of the productivity of the agricultural workforce and to move from comfort-centred consumerism to a green and smart economy. Equally compelling is the exigency of reversing the population flow to urban and settled areas. If we do not consciously restrict our feigned consumption and correct our policy mistakes, we might soon find ourselves trapped in the evils of inaction. The time for us to act together has come.

# Building a green society



**HRH PRINCESS LALLA HASNAA**  
President, Mohammed VI  
Foundation for Environmental Protection

Since the 1992 Rio Earth Summit, the Kingdom of Morocco has fully supported the objectives and principles of sustainable development. Reflecting its keen interest, His Majesty King Mohammed VI, then Crown Prince, took part in both that summit and Rio+5 in New York in 1997, and then participated, as Head of State, at the 2002 Johannesburg World Summit on Sustainable Development. Morocco has

embarked on an ambitious economic and social development policy, aware that achieving sustained economic growth must be accompanied by a proactive environmental protection policy to ensure that the requirements of sustainable development are met.

Major efforts have been made on environmental legislation and institutional development. Mainstreaming environmental issues at all levels of public policy is gradually

taking place, so as to promote economic and social development based on sustainable production and consumption patterns.

Building on all that has been achieved – and pressing ahead towards developing a green economy and sustainable development – will require the support and mobilization of the entire society. The transition to a green economy needs not just technical, regulatory or financial instruments, but a fundamental shift in the way we think and act: this means investing in human and social capital. Only cross-the-board education and awareness can bring significant-enough changes to lead to sustainable lifestyles and consumption and





production patterns. So there has to be a transition to a green society, as well as to a green economy. Green societies are fully educated communities. Education for sustainable development plays a fundamental role. Tomorrow's societies will be shaped by the skills and knowledge acquired today.

Thus education and awareness are prerequisites for a successful transition to a green economy that is solidarity-based, inclusive and respectful of natural ecosystems. Both government agencies and civil society organizations have crucial roles in creating the right conditions for this.

Since its inception in 2001, the Mohammed VI Foundation for

*“Building on all that has been achieved — and pressing ahead towards developing a green economy and sustainable development — will require the support and mobilization of the entire society.”*

Environmental Protection has been fully committed to these principles. It has made environmental education and sustainable development key objectives of its policy and action strategy. Investing in education and promoting awareness among young people has been its motto,

and schools have been at the heart of its action. The aim is to enhance awareness and capacity building in order to rise to the challenge of sustainable development.

From the outset, we have promoted partnerships with government agencies and economic operators while mobilizing local associations, building on their energy and creativity. We have ensured that public and private stakeholders concerned with sustainable development are represented on the Foundation's governing bodies and participate in designing and implementing programmes.

Ten years ago we decided to implement internationally renowned environmental education programmes in Morocco. The Young Reporters for the Environment programme — this year celebrating its 10th anniversary and implemented through a successful partnership with the Ministry of Education — aims to educate young people and enable them to acquire skills and attitudes that support eco-citizenship.

It encourages them to produce written reports or photos on selected environment preservation and sustainable development topics. The best entries are selected by a national jury and receive awards. The programme's international dimension also enables young Moroccans to compete for the international award, interact with young people from other countries on global issues, and open up to the world.

Year after year — thanks to the mobilization of the entire

education community and our partners — participation in the successful programme has grown in both quantity and quality. Nearly 20,000 high school students have participated in ten competitions with about 3,500 written reports and photos: many have also competed successfully for international awards.

For the programme's tenth anniversary — and as part of the preparatory debates for Rio+20 — the Foundation held a youth forum on sustainable consumption in April 2012. The event — bringing together young people, decision-makers from the public and private sectors, and the press — enabled discussion of production and consumption patterns and of the conditions required for a transition to a green economy.

Responsible consumption is at the heart of education for sustainable development. Based on the principles of equity and sustainability, it contributes to making consumption a catalyst for welfare, peace and human development. Education is also key to preparing young people to seize the opportunities offered by green jobs and enabling them to adapt to a shifting environment while changing unsustainable consumption and production patterns.

New, more effective mechanisms need to be developed to establish a connection between the labor market objectives of green growth and educational programmes — including teaching and vocational training to prepare young people for green jobs and to tackle unemployment. In parallel, the Foundation developed



*“Year after year — thanks to the mobilization of the entire education community and our partners — participation in the successful programme has grown in both quantity and quality. Nearly 20,000 high school students have participated in ten competitions with about 3,500 written reports and photos: many have also competed successfully for international awards.”*

the Eco-Schools program to ensure that environmental education becomes part and parcel of the education system.

This aims to lay the foundations of environmental education in primary schools by mobilizing the entire school community — students, parents and teachers — around a shared project of environmental conservation, adopting good practices in specific areas and measuring progress. Launched as a pilot experiment in 2006, it is being extended to all schools as part of a strategic partnership with the Ministry of Education. Our approach — based on early involvement of



stakeholders in efforts and sharing resources – has proved to be valuable in the complex field of sustainable development, where participation and partnership are key to success.

The Clean Beaches program, a decade old now, is based on this model. It aims to improve and preserve beach quality and educate the public and local stakeholders, with financial support from corporate citizens.

It awards trophies to coastal communities – and their partner companies or associations – that improve the quality of their beaches. This public-private partnership has led to strong local awareness of the economic, environmental and social issues relating to coastal areas and has enabled several beaches to fly the Blue Flag quality label. Management of environmental issues and sustainable development fits into a long-term perspective. The role of government policy and

regulatory authorities is to provide leadership and set an example for others. Public investment and management of public services must incorporate sustainability.

Businesses and civil society must also be involved and socially and environmentally responsible. Sustainable development can only be achieved by mobilizing all stakeholders and using the full range of available instruments: institutional, regulatory, economic, financial, social, partnerships, and private voluntary initiatives.

Partnership between public and civil society organizations provides the groundwork for a new form



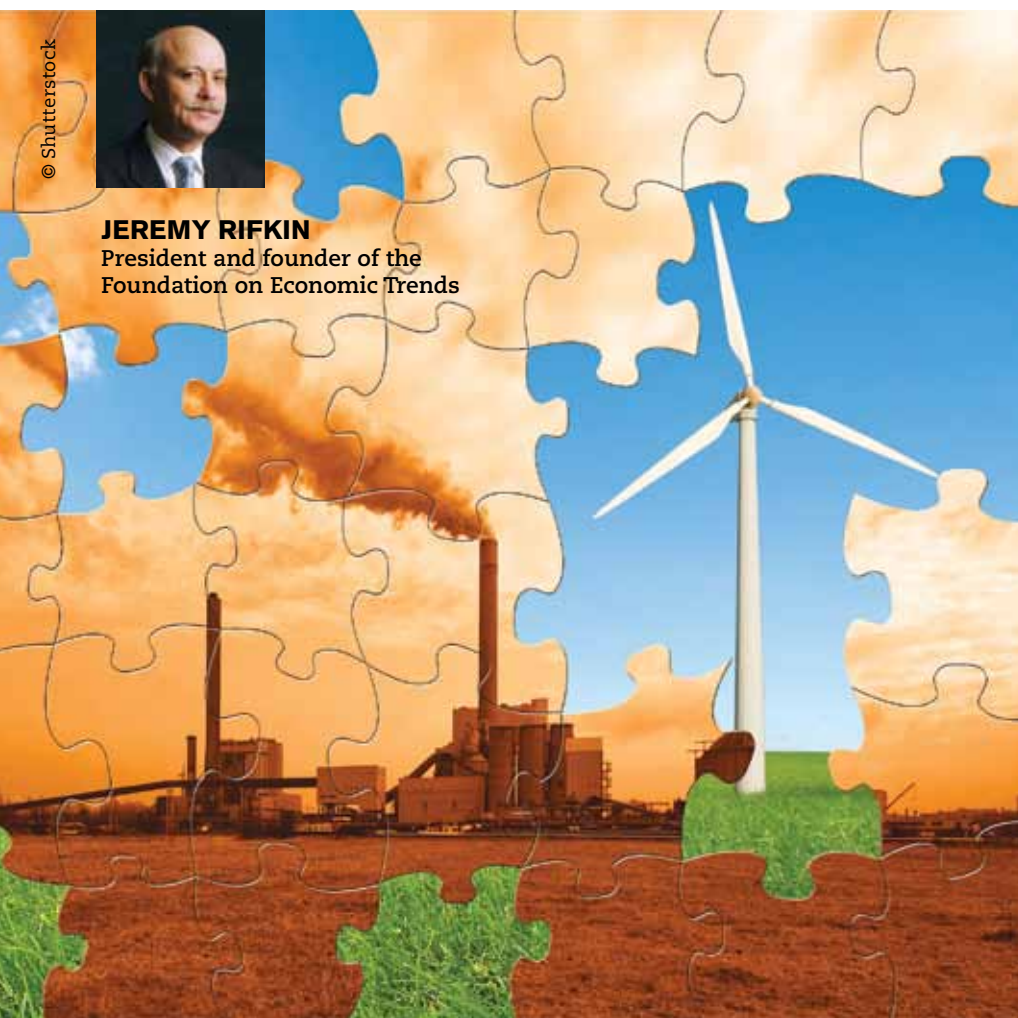
of governance for managing sustainable development issues. The National Charter for the Environment and Sustainable Development, called for by His Majesty the King, is the right means to mobilize the nation's resources.

A social project based on a broad consultation process, it will be implemented through adopting a framework law that guides the activities of all the social stakeholders. It aims to integrate fully the three pillars of economic, social and environmental development, thus effectively putting the Kingdom of Morocco on a path towards sustainable development.

This is how we intend to work together and achieve progress for all. The actors are aware of the stakes involved, and the path is clearly laid out. Genuine change is happening, and stakeholders are acting, innovating and showing the way. We need to encourage and bolster these positive trends.



**JEREMY RIFKIN**  
President and founder of the  
Foundation on Economic Trends



# The Third Industrial Revolution

The Second Industrial Revolution, powered by oil and other fossil fuels, is spiraling into a dangerous endgame: the prices of energy and food are climbing, unemployment remains high, consumer and government debt are soaring, and the recovery is slowing. Worse, climate change from fossil-fuel-based industrial activity is threatening the viability of life on Earth. Facing the prospect of a second collapse of the global economy, humanity is desperate for a new economic vision and sustainable economic development plan. Finding it requires understanding the technological forces that precipitate the profound transformations in society.

History's great economic revolutions occur when new communication technologies converge with new energy systems. New energy revolutions make possible more expansive and integrated trade. Accompanying communication revolutions manage the new complex commercial activities made possible by the new energy flows. In the 19th century, cheap steam powered print technology and the introduction of public schools gave rise to a print-literate work force with the communication skills to manage the increased flow of commercial activity made possible by coal and steam power technology, ushering in the First Industrial Revolution. In the 20th century, centralized electricity communication – the telephone, and later radio and television – became the medium to manage a more complex and dispersed oil, auto, and suburban era, and the mass consumer culture of the Second Industrial Revolution.

As I describe in my book *The Third Industrial Revolution, How Lateral Power is Transforming Energy, the Economy, and the World*, internet technology and renewable energies are now about to merge to create a powerful new infrastructure for a Third Industrial Revolution that will change the world in the 21st century. In the coming era, hundreds of millions of people will produce their own green energy in their homes, offices, and factories and share it with each other in an “energy Internet”, just as we now generate and share information online. The creation of a renewable energy regime – loaded by buildings, partially stored in the form of hydrogen, distributed via an energy Internet, and connected to plug-in zero-emission transport – establishes a five-pillar infrastructure that will spawn thousands of businesses and millions of sustainable jobs.

The entire system is interactive, integrated, and seamless. When these five pillars come together, they make up an indivisible technological platform that can transform every country.

Nations will need to invest in renewable energy technology on a massive scale; convert millions of buildings into green micro-power plants; embed hydrogen and other storage technology throughout the infrastructure; lay down a green electricity Internet; and transform the automobile from the internal combustion engine to electric plug-in and fuel cell propulsion.

The remaking of each nation's infrastructure and the retooling of industries is going to require massive retraining of workers on a scale matching the vocational and professional training at the onset of the First and Second Industrial Revolutions. The new high-tech workforce of the Third Industrial Revolution will need to be skilled in renewable energy technologies, green construction, IT and embedded computing, nanotechnology, sustainable chemistry, fuel-cell development, digital power grid management, hybrid electric and hydrogen-powered transport and hundreds of other technical fields.

Democratizing energy will bring with it a fundamental reordering of human relationships, impacting the very way we conduct business, govern society, educate our children, and engage in civic life. The music companies didn't understand distributed power until millions of young people began sharing music online, and corporate revenues tumbled in less than a decade. Encyclopedia Britannica did not appreciate the distributed and collaborative power that made Wikipedia the leading reference

source in the world. Nor did the newspapers take seriously the distributed power of the blogosphere; now many publications are either going out of business or transferring much of their activities online. The implications of people sharing distributed energy in an open commons are even more far-reaching. To appreciate how disruptive is the Third Industrial Revolution to the existing way we organize economic life, consider the far-reaching changes that have taken place in just the past 23 years through the Internet revolution.

Democratizing information and communication has altered the very nature of global commerce and social relations as significantly as the print revolution in the early modern era. Imagine the impact that democratizing energy across all of society is likely to have when managed by Internet technology. The Third Industrial Revolution changes the very concept of power relationships in society. The traditional notion of centralized, top-down power, is giving way to lateral power, with far reaching consequences.

The Third Industrial Revolution build-out is particularly relevant for the poorer countries in the developing world. Forty per cent of the human race stills lives on two dollars a day or less, in dire poverty. Most of these people have no electricity, without which they remain "powerless", literally and figuratively. The single most important factor in raising hundreds of millions of people

*“Democratizing energy will bring with it a fundamental reordering of human relationships, impacting the very way we conduct business, govern society, educate our children, and engage in civic life.”*

out of poverty is having reliable and affordable green electricity. All other economic development is impossible in its absence. Universal access to electricity is the indispensable starting point for improving the lives of the poorest populations of the world.

Because renewable energy – solar, wind, geothermal, hydro and biomass – is widely distributed, a Third Industrial Revolution is likely to take off quickly in the developing world. Although a lack of infrastructure is often viewed as impeding development, we are actually finding that many developing nations can potentially

“leapfrog” into a Third Industrial Revolution because they are not saddled with an aging electricity grid. By building a new, distributed electricity system from scratch, rather than continuing to patch up an old and outworn grid, developing countries significantly reduce the time and expense in transitioning into a new energy era. And the distributed nature of the Third Industrial Revolution infrastructure allows risk to be more widely diffused, with localities and regions pooling resources to establish local grid networks, and then connecting with other nodes. This is the very essence of lateral power.

The Third Industrial Revolution offers the hope that we can arrive at a sustainable post-carbon era by mid-century. We have the science, the technology, and the game plan to make it happen. The question is whether we will recognize the economic possibilities that lie ahead and muster the will to get there in time.



**RACHEL KYTE**  
Vice President of Sustainable  
Development, the World Bank

# Tale of Two Rios

When we look back – in 20 years' time – on the 2012 UN Conference on Sustainable Development, will we see it as when we started to account for natural wealth, marking the shift towards inclusive green growth?

The World Bank Group went to Rio with firm evidence that this is the pathway to sustainable development – affordable in lower income countries and feasible for all. With the conference agreeing text on a green economy it would seem the international community agrees.

What drove us was considering what ministers of finance, development, planning agriculture, water, fisheries – as well as the environment – should do differently the Monday morning after Rio. What, similarly, should CEOs and COOs, not just the VPs for sustainability, do differently? What about mayors and municipal leaders? And us? Each has a role and we have our plan.

Despite the almost universally hostile press, I left Rio with a sense of determination. This was not based on the words in the outcome text, or the process around it, but on the practical, no nonsense, hard choices and opportunities

abounding in countless events at the Rio Convention Centre and across the city. There was leadership from every walk of life, sector of society and continent – and it wasn't waiting for permission or blessing from the multilateral process.

There were then, two Rios: The first was the formal process with 193 countries struggling to find the necessary consensus to move forward on enormously important issues, many already “legislated”. Most dispiriting was the way in which, once again, the sound economic, social and rights issues surrounding women's reproductive and sexual health were ducked in an age where access to modern contraception and the ability of women to control their own bodies will be fundamental to population dynamics and to the well-being of growing numbers of people. We proved once again that we can cut off our nose to spite our face and that we struggle to find direction and urgency in global consensus.

Then there was the second Rio – informal processes that brought together tens of thousands of people at hundreds of official side and unofficial events. Three



hundred parliamentarians from 70 countries gathered for the first-ever World Legislators Summit, to agree a new mechanism for scrutinizing and monitoring governments on delivering their Rio agreements.

Similarly, CEOs from major companies invested time and ideas at the Corporate Sustainability Forum and other business events: real financial commitment showed how far the world has come in 20 years with the business case for sustainability now hard baked into the DNA of competitiveness across all sectors of the economy.

And mayors showed they are moving ahead, including on green building, mass transit, removing methane from landfills, and designing future livability. All across Rio, people gravitated to ideas



© Shutterstock

*“The tale of two Rios shows how countries, companies, civil society organizations, the scientific community and cities will act together where they see interests aligned”*

come. Events on the issue filled the Rio Convention Centre, as government, parliamentary and civil society groups alike highlighted the importance of moving beyond GDP. Indeed the new energy and emphasis around this issue may be Rio +20's most important outcome.

Now that we have a UN agreed framework in place for natural capital, informed by 20 years of intellectual analysis, the pressure for practical action is palpable. There is an extraordinary opportunity for the World Bank Group to help countries take practical steps towards improved decision making based on understanding the true value of natural capital and to help dovetail national private sector initiatives.

It and its growing number of partners will provide support to help build capacity in countries that want natural capital accounting to help them chart their next phase of growth. We have many further requests from countries to support capacity building for evidence-based decision making. Our Monday morning natural capital plan is well advanced.

Rio+20 also revealed strong support for other initiatives and approaches that can be game changers for sustainable development. There were so many debates about protecting the oceans and managing them sustainably that some called it

the “Summit of the Seas”. The Bank-supported Global Partnership for Oceans attracted new energy and new members – now totalling 105 – and created a sense of urgency around action to restore them to health and productivity, and on the need for sustainable aquaculture.

Expanding energy access – while increasing support for renewable energy and energy efficiency in developing countries – also fueled debates. Over 100 commitments were made by countries, private sector and civil society in support of the UN's Sustainable Energy for All initiative. The World Bank Group announced plans to double leveraging of its energy lending, emphasizing low-carbon energy, from \$8 billion to \$16 billion.

The overwhelming feeling was that we cannot wait for international agreements to do what must be done. The tale of two Rios shows how countries, companies, civil society organizations, the scientific community and cities will act together where they see interests aligned.

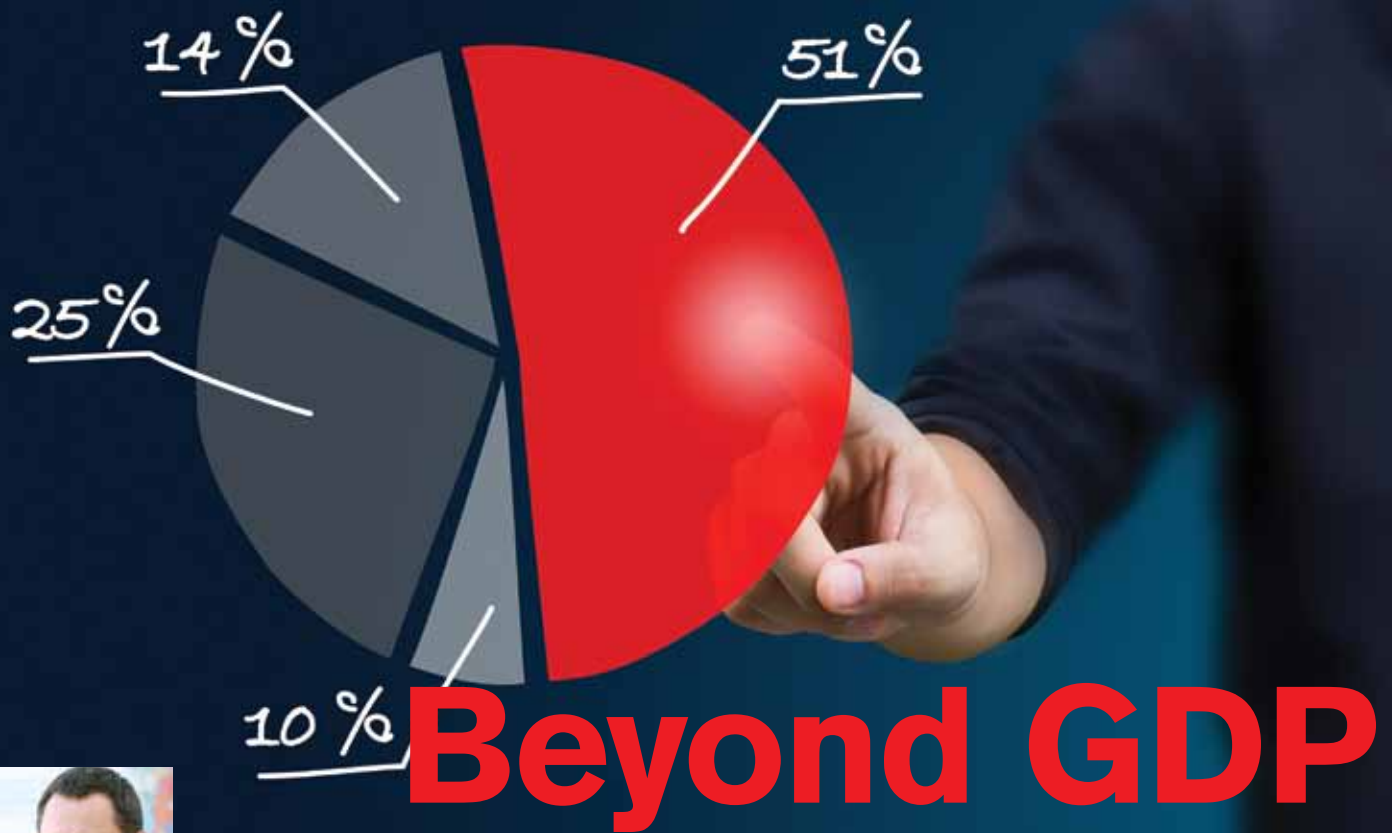
International agreements help us move at the needed speed and scale. But, with or without them we must get on with what we know will benefit the poor and the environment. Sustainable development is everyone's business. Our job at the World Bank Group is to show, with our clients, how change can happen.

Our plan for Monday morning includes action on capacity building for natural capital accounting, action on supporting healthy oceans, action on sustainable cities, action on the efficiency of economic plans and removing bad subsidies, action on sustainable energy and action on short-lived climate pollutants.

What's yours?

and approaches that promised action. The private sector and city coalitions stressed that this is not about managing the downside, but about opportunities for future markets, future products, future employees, future investors, and all forms of competitiveness linked to sustainability as shared values.

The analysis behind the World Bank's report *Inclusive Green Growth: The Pathway to Sustainable Development* framed many of the conference debates and helped facilitate a new focus on natural capital accounting – a fundamental component of inclusive green growth. Sixty-two countries, over 90 companies, and 17 civil society organizations supported the Bank Group's-facilitated 50:50 campaign, testifying – like many others – that it is an idea whose time has



**SIMON UPTON**  
Environment Director, OECD

World leaders and policy makers are increasingly aware of the need to explore ways of measuring human well-being beyond GDP (Gross Domestic Product) if progress towards sustainable development is to be assessed. Indeed the Rio+20 conference's outcome document recognised "the need for broader measures of progress to complement GDP in order to better inform policy decisions" and requested the UN and other relevant organizations to build on existing initiatives.

For almost a decade the OECD has been leading the international reflection on the measurement of well-being and progress. Its World Forum on "Statistics, Knowledge and Policy" regularly gathers decision and policy makers, social leaders, statisticians and academics to



discuss better ways to measure and foster societies' progress. Much of our focus is on exploring what matters most for people's lives now and in the future, and on bringing related indicators to the attention of citizens and policy makers.

On the occasion of the organization's 50th Anniversary, we launched the Better Life Index, which lets citizens establish their own measure of well-being by ranking the key factors that contribute to it in member countries, like education, housing, income, environmental quality and health. We are also working with national statistical offices to improve the way we measure economic activity and growth through the system of national accounts, such as by better accounting for household income and for those natural assets for which markets exist.

Indicators to monitor progress towards green growth are at the core of the project. It cannot be captured by a single measure, so what is needed is a set of indicators that can be used as



markers on the path to greening growth and to indicate new economic opportunities.

At the OECD we have therefore developed a measurement framework and a set of 25 indicators to monitor progress towards green growth and these will support the OECD's policy analysis and country studies. The indicators complement conventional GDP measures by assessing countries' progress in moving towards a low-carbon and resource-efficient economy. They look into the economy's productivity and into how consumption patterns of affluent countries affect global public goods, such as our climate, through the imports they generate.

They explore such questions as: Is economic growth becoming greener? Is there a risk of future shocks to growth due to the deterioration of natural resources and environmental quality? Is greening the economy opening up new sources of growth? And do people benefit from greener growth? The set of indicators – the first of its kind at the international level, is structured around following themes: The economy's environmental and resource productivity – to indicate whether it is becoming greener and to capture aspects of production and consumption which are rarely quantified in conventional economic models and accounting frameworks. The economy's natural asset base – to indicate the risks to growth from a declining natural asset base. The environmental quality of life – to indicate how environmental conditions affect people's well-being.

Economic opportunities and policy responses – to indicate the effectiveness of policies in delivering green growth and describe the responses needed to secure business and employment opportunities. A broad range of indicators, however, carries the risk

of losing a clear message – both for policy makers and the public at large. The OECD has therefore launched a process designed to identify a few headline indicators that track central elements of green growth and complement main economic indicators. Those under consideration include:

CO<sub>2</sub> productivity (production and demand-based); Non-energy material productivity (production and demand-based); Multifactor productivity adjusted for environmental services; A natural resource use index; Land cover changes; Population exposure to fine particles.

Meanwhile work continues to identify a headline indicator for green growth economic opportunities. The OECD green growth measurement framework and proposed indicators can easily be tailored to national circumstances, policy priorities and statistical capacities. Several countries have already applied them (Czech Republic, Korea, Mexico, the Netherlands), while others are in the process of doing so (Colombia, Costa Rica, Ecuador, Guatemala, Paraguay, Kyrgyzstan). Work is also planned in Peru, East Asia and the Mediterranean region.

To support the indicator set, we have brought together relevant economic and environmental data and established a green growth database. Apart from providing data on what we know, this has also revealed important gaps in information in such areas as biodiversity, industrial performance, and the stocks and flows of natural assets. Even where data exist, they

are often not comparable across countries and difficult to combine due to differences in classifications, terminology or timeliness.

Environmental data particularly lag behind. If we are serious about achieving inclusive green growth, we need to rethink how we analyze our economies, we have to make sure that all important elements get measured and are made statistically and economically visible, and we need harmonized tools to

assess progress in all countries and indicators based on internationally comparable data. This is a collective challenge for the next decade after Rio+20 and for the post-2015 development agenda. The OECD continues to work with countries and international partners – such as UNEP, UNIDO,

other UN agencies, the World Bank, and the European Commission – to advance the green growth measurement agenda. It seeks to fill gaps, capture the contribution that natural resources and ecosystems make to growth, make environmental and economic data more coherent, and converge around common core indicators for the green economy.

Placing these measurement efforts in the framework of the System of Environmental – Economic Accounting that was recently adopted as an international statistical standard to parallel the System of National Accounts, will maximize consistency and international comparability. And in October the 4<sup>th</sup> OECD World Forum, organized jointly with the Government of India, will provide another important contribution to this subject.

*“The indicators complement conventional GDP measures by assessing countries' progress in moving towards a low-carbon and resource efficient economy.”*

# UNEP at work

© Shutterstock



## Greening GDP



Here **Fulai Sheng**, a researcher in UNEP's Economics and Trade Branch, explains UNEP's role in the drawing up of a broader GDP

A key outcome of RIO+20 was the decision to draw up a new global indicator of wealth that goes beyond GDP's narrowness (See **Beyond GDP** by Simon Upton on page 18). UNEP, working closely with other UN bodies, is closely involved in that process.

### BACKGROUND

UNEP, together with UN Statistical Division (UNSD), is currently discussing and planning the country-level implementation of the System of Environmental-Economic Accounts (SEEA), which was adopted in February 2012 as an international statistical standard.

The SEEA provides the means by which one can measure changes to the environment and natural resources in both physical and financial terms (where possible and appropriate) as a result of national economic activities. The results can be compared with GDP.

### THE CHALLENGES

In the broader measurement of GDP now proposed and in line with UNEP's mandate, UNEP would like to see **ALL** major environmental, natural resources, and ecosystem indicators included. However, this is a difficult and long process. The international effort to have broader measurement has been going on for at least two decades. It has taken that much time for the SEEA to be adopted.

Similarly, the World Bank's Adjusted Net Savings approach has also been around for about 20 years. This looks at net changes to total capital stock, including produced capital like trucks, natural capital like forests, and human capital to see if a country is accumulating or losing capital stock.

There are also several other major initiatives such as the HDI. The key issue is not the lack of standards and methodology; the issue is

the reluctance to use these broader measurements in policymaking as well as the problem of data availability/collection/statistical capacity. These issues are not likely to be resolved anytime soon.

## THE SOLUTIONS

Greater attention needs to be paid to the policy relevance of/policy interest in the alternative measurements as well as the practical imperative to boost statistical capacity in many developing countries. As far as indicators are concerned, from the perspective of the green economy approach, greater emphasis needs to be placed on the environmental goods and services sectors.

Changes to the natural environment, natural resources, and ecosystem may be measured in economic terms through monetary valuation.

For example, when the environment is polluted, it involves a cost — people get sick and lose their ability to earn a living. When a natural resource is depleted, it involves a cost — as a result of fishery stocks collapsing, people in the fishing business lose their jobs and people in coastal areas are deprived of a major source of nutrition.

When an ecosystem service is destroyed, it involves a cost — as mangroves are removed for creating shrimp farms, the flood control function of mangroves disappears and the world knows only too well the cost of floods in terms of loss of life and properties.

The money value of these environmental/natural resources/ecosystem costs can be estimated through established methodologies described in the SEEA, in order to strengthen the case for environmental protection and natural resource conservation, and in some cases, to penalize the culprits for the environmental destruction they have caused as in the case of a major oil spill.

# numbers

## 10%

of rich countries' greenhouse gas emissions come from growing food that is never eaten — **FAO**

## 1/3

of the food produced in the world for human consumption every year — approximately 1.3 billion tonnes — gets lost or wasted, according to — **FAO**

## 40 million

tonnes of food wasted by US households, retailers and food services each year would be enough to satisfy the hunger of nearly one billion malnourished people in the world — **FAO**

## 90%

drop in the amount of lead levels in blood worldwide and saves 1.2 million lives annually through the phase out of lead in gasoline — **FAO**

## 3 billion

people still cook and heat their homes using solid fuels in open fires and leaky stoves — **WHO**

## WWW Rio+20 and sustainable Development: **useful links**

*This page contains links to websites to help you research issues related to Sustainable Development. Our Planet magazine does not, however, endorse the viewpoints of any of the groups to which we link, and we cannot guarantee the accuracy of the information posted on these sites. Rather, we hope to provide you with a broad range of opinions and perspectives.*

### UNEP and the Green Economy Initiative

[www.unep.org/greeneconomy/](http://www.unep.org/greeneconomy/)  
UNEP's green Economy Initiative provides a range of advisory services to more than 20 governments around the world. Underpinning all dimensions of the green Economy Initiative is a focus on robust economic research and policy analysis.

### World Business Council for Sustainable Development

[www.wbcsd.org/about.aspx](http://www.wbcsd.org/about.aspx)  
The WBCSD is a CEO-led organization of forward-thinking companies that galvanizes the global business community to create a sustainable future for business, society and the environment.

### Sustainable Energy Finance Initiative (SEFI)

[www.sefi.unep.org/](http://www.sefi.unep.org/)  
SEFI provides financiers with the tools, support and global network needed to conceive and manage investments in the complex and rapidly changing marketplace for clean energy technologies.

### UN Environment Programme 40th Anniversary

[www.unep.org/40thAnniversary/](http://www.unep.org/40thAnniversary/)  
In celebration of UNEP's 40 years, the website marks key events, negotiations and experiences that have taken place and includes photos of the times.

# UNEP at work



© Jannet Ellis

## Battling the effects of climate change

### THE PROBLEM

The beauty of the Darién landscape of eastern Panama and its people is unparalleled. The province, fed by the mighty Chucunaque River, is lush with vegetation and renowned for its great biological and cultural diversity as well as an abundance of water.

Although the province has experienced considerable deforestation, it nevertheless is home to some of the most important rainforests of Central America and continues to nurture

the cultural heritage of the Camaracs Ngaibe Bugle, Guna de Wargandi and Embera Wounaan indigenous groups. While the Chucunaque River basin is one of the country's largest, it also runs through some of Panama's poorest regions, making it extremely vulnerable to climate change, especially its impacts: drought and flooding.

Moreover, the impacts of climate change are happening more frequently and with greater intensity. Indeed, in 2010 the 150,000 people living around Darién were struggling to survive floods that washed away houses and animals and contaminated the drinking water.

The flooding also forced the closure — for the first time in 21 years — of the Panama Canal.

### THE SOLUTION

While the December 2010 disaster was devastating, it could have been worse. An early warning system using weather satellite-transmissions, rain gauges, limnometric scales and a radio communication system had been set up in 2009 by a UN Joint Programme operating under the Millennium Development Goals Achievement Fund (MDG-F). Entitled *Incorporation*

“... In remote areas like Darién, radio communication is still the best source of information and the UN Joint Programme has made most use of it. As a result, in the 2010 flooding there was a smooth evacuation and no loss of lives”

of Measures for Adaptation and Mitigation of Climate Change, the UN Joint Programme introduced the early warning system as well as a climate change monitoring system with the latest meteorological technology around the Chucunaque River basin, all of which helped to limit the impacts of the flooding on the local population.

## What UNEP did?

As the convener of the Environment and Climate Change window under the MDG-F, the UN Environment Programme (UNEP) is the technical advisory on environmental issues in the UN Joint Programme in Panama that incorporates the expertise of UNDP, FAO, and PAHO/WHO. The Joint Programme also worked with national counterparts of four Panamanian institutions to set up a climate change information system. The collaborative effort also led to the installation of radio equipment in key places often hit by flooding. Thanks to the radio communication system, endangered communities

can now be informed ahead of time on the cresting of the Chucunaque River.

Indeed, in remote areas like Darién, radio communication is still the best source of information and the UN Joint Programme has made most use of it. As a result, in the 2010 flooding there was a smooth evacuation and no loss of lives.



A communication strategy was developed to encourage local participation and dialogue on climate change. In addition, information was simplified and translated into the three indigenous languages to increase the diffusion of the messages in all water basins. Moreover, rather than imposing a strictly “scientific” communication of climate change, the Joint Programme sought to interweave this thinking with the more traditional paradigms found in the indigenous communities.

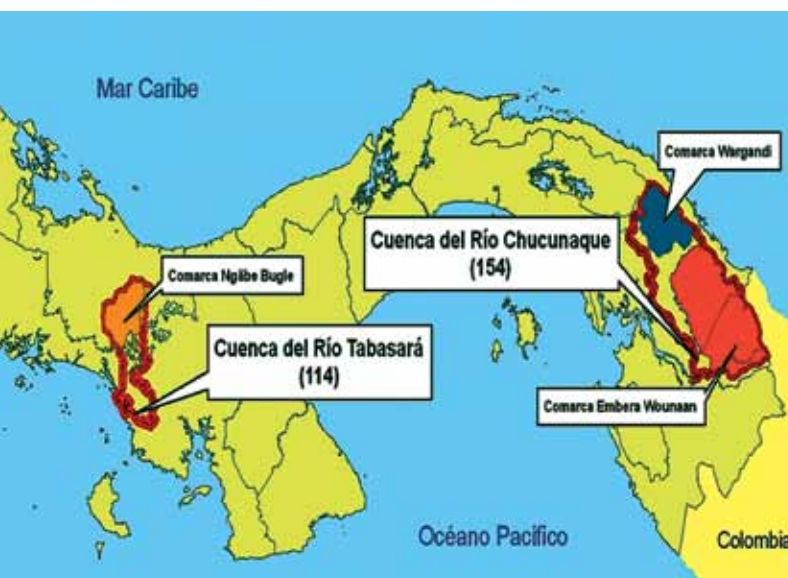
© Montserrat Valeiras

## SUPPORT

The Environment and Climate Change Joint Programmes under the MDG-F are taking place in 17 countries around the world. Set up in December 2006 as an international cooperation mechanism to help countries reach the Millennium Development Goals, the MDG-F is completely funded by the Spanish Government.

For more information on the MDG-F, please see: [www.mdgfund.org](http://www.mdgfund.org)

For more information on JP Panama, please see: [www.unep.org/drc](http://www.unep.org/drc)



## LESSONS LEARNED

The Joint Programme had to consider a number of aspects from the outset. The basin areas of the river are not only remote, but access to some of them is very limited.

Moreover, Panama has several indigenous communities living in these areas, so in implementing the Joint Programme, respect for traditional knowledge was carefully considered.

[www.unep.org/drc](http://www.unep.org/drc)



**FRANCES BEINECKE**  
President of the Natural  
Resources Defense Council



# Energy pulse

The most exciting aspect of the Rio+20 Earth Summit was the energy pulsing through the 50,000 people there who shared a concern about protecting the planet. Their passion, dedication, and actions turned it into much more than another internationally negotiated “outcome document”, making it an historic turning point in which leaders from government, business, and civil society demonstrated that deeds – rather than lofty promises – are the key to building a more sustainable future.

And it inspired a new generation of committed young leaders to remind us that their future is most at risk if we fail to confront the Earth’s most pressing challenges.

These pivotal shifts did not occur overnight. Instead, they grew out of participants’ careful preparation. NRDC, for instance, launched a Race-to-Rio campaign in June 2011 with a call for a different kind of summit. We agree with UN Secretary General Ban Ki-Moon that time is running out to address climate change, food security, and other looming crises. As UNEP documented in its GEO5 report, the world has achieved just 4 of 90 globally adopted environmental and sustainability goals. We must stop talking and start acting. To mobilize leaders to act, NRDC urged countries, corporations, and communities to come to Rio with specific plans for how they will tackle problems now – not in some distant future.

The push toward action seemed to permeate the summit. In Rio, presidents, prime ministers, mayors, CEOs and other leaders made hundreds of commitments with an estimated value of more than half a trillion dollars.

Microsoft, for instance, announced it would create a carbon fee on internal operations in more than 100 nations. Femsa, a massive soft-drink bottler in Latin America, said it would get 85 per cent of its energy in Mexico from renewable sources. A group of development banks pledged to give \$175 billion to support public transit and bike lanes instead of highway construction in the world’s biggest urban centers – an initiative that will combat climate change and reduce toxic air pollution that causes cancer and heart disease.

The U.S. Government joined 400 of the world's largest retailers and manufacturers in pledging to rid their supply chains of deforestation. Fourteen nations announced they were joining an international effort to phase out inefficient incandescent light bulbs by 2016. A transition to efficient lighting could result in annual global savings of more than \$110 billion and reduce as much carbon pollution as taking more than 120 million cars off the road.

These are just some of the specific commitments made in Rio. NRDC created a website [www.cloudofcommitments.org](http://www.cloudofcommitments.org) to aggregate all the key pledges with links to all the major registries and platforms. We want to stimulate dialogue about how to fulfill them and to encourage citizens to hold their leaders accountable for their promises.

The pledges listed on the website are the real legacy of the Earth Summit. They could translate into the kind of tangible change – more public transport, more marine protected areas, more access to clean water – that improves people's lives and protects our planet, not decades from now but in the next few years.

The outcome document, in contrast, showed a disappointing lack of ambition. We had hoped for a clarion call from the world's leaders about the urgency of climate change and other global challenges. Instead we got a turgid 49-page document – a testament to the challenge of negotiating a text when more than 190 nations must reach

consensus. There were only a few small, encouraging steps forward, such as the upgrading of UNEP. We were pleased with the documents' focus on oceans. Governments are beginning to grasp that despoiling them creates not just environmental problems, but food insecurity and economic challenges as well.

There is also a growing recognition that the oceans, like the atmosphere, are a global resource and that we all have a vested interest in reviving them. Leaders agreed to reduce overfishing and focus on the emerging

threats of ocean acidification and marine plastic pollution.

But it is still disappointing that leaders could not agree to start negotiating a new agreement to conserve the high seas – the marine areas beyond national jurisdictions. Yet the energy in Rio revealed that people aren't waiting for a document

*"I'm confused and angry at the state of the world, and I want us to work together now to change this. We are here today to solve the problems that we have caused as a collective, to ensure that we have a future."*

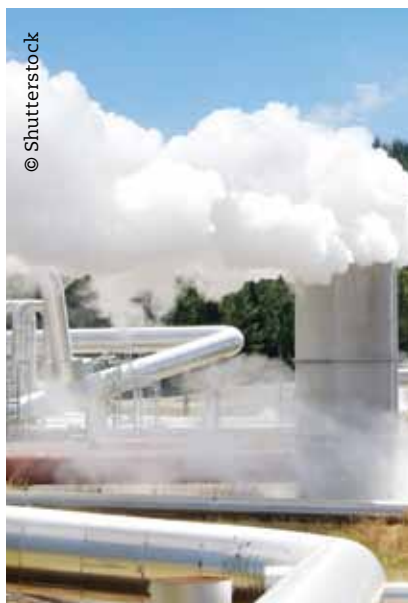
to tell us how to protect the oceans or fight climate change. We are already doing it, and many of the efforts are led by young people. It was thrilling to see that a new generation is fully engaged in the movement to preserve our natural systems. I was especially moved by the words of Brittany Trilford, a 17-year-old student from New Zealand, who addressed the opening plenary urging world leaders to take concrete action to protect the planet.

"I stand here with fire in my heart," she said. "I'm confused and angry at the state of the world, and I want us to work together now to change this. We are here today to solve the problems that we have caused as a collective, to ensure that we have a future."

Brittany participated on a panel with me and Severn Suzuki, who – aged 12 – rocked the first Earth Summit 20 years ago. I was inspired to be with them, to hear their dedicated focus and the logic of what they asked of all of us: to end the paralysis and start acting. Brittany reminded us that she spoke for three billion people under 25. "Think of me as half of the world," she told the crowd.

We must keep those three billion young people – and their children – in mind as we go forward from Rio+20. We must create a cleaner future today. The best outcome of the Earth Summit would be friendly competition in which nations and cities and corporations vie to see who does more to become sustainable: who removed the most diesel pollution or generated the most solar power.

Such accomplishments, added up all over the world, are what will move the global community forward into a more sustainable future.





**ASHOK KHOSLA**

Founder of Development Alternatives and  
President of the International Union for the  
Conservation of Nature



# Two deadly diseases

From the 1950s, early in the UN's history, the international community understood that it could not achieve its mandate of ensuring global peace and security without improving the human condition and removing poverty worldwide. Several UN-sponsored "international development decades" followed, yet the numbers living in poverty and hunger continued to grow — as they still do.

In 1970, the UN General Assembly, recognizing that the growth of the world's economy brought threats to the environment, instituted the 1972 Stockholm Conference

on the Human Environment. Yet despite its worldwide impact on mobilizing UN initiatives, government policies and civil society action, the environment continued to deteriorate — and at an accelerating pace that continues today.

It did not take long for the development and environment strands to come together. By 1980, the *World Conservation Strategy*, jointly published by IUCN, WWF and UNEP, launched the concept of sustainable development. The Brundtland Commission endorsed it and the 1992 Earth Summit in

Rio de Janeiro gave it worldwide currency. Several summits later — each bringing together heads of state from hundreds of countries, with vast retinues of officials, business leaders and NGOs in attendance — the degradation of people's lives and the destruction of nature are worse than ever.

This summer's Rio+20 summit yet again provided an opportunity for national leaders to come together to debate pathways to a better future. As usual, they made eloquent and profound declarations filled with insights on the predicament of humankind and the threats to our beleaguered planet's life support systems. Yet, despite several months of preparatory meetings, their experts and diplomats produced virtually no meaningful commitments



to meet the challenges exploding all around us. Notwithstanding a remarkable array on the sidelines of the summit of hope, aspirations, models and solutions for a sustainable future from all over the world, the commitments made by governments, corporations, civil society and others were puny compared with what is needed.

The international system seems to be geared to delivering only the most minimal of national commitments at the national level, and thus the lowest common denominators for global policy or action. Given the gravity and urgency of the threats this is a very serious situation.

The twin problems of large-scale human deprivation and massive environmental degradation are symptoms of two synergistic diseases that have reached epidemic proportions around the world. Affluenza and Povertitis are terminal conditions with devastating impacts on human beings, society and nature. They tend to intensify each other's symptoms. And while they seem to feed on each other, neither can survive without the other.

Affluenza — driven by greed and the single-minded pursuit of accumulating private economic and physical capital — ruthlessly destroys natural resources, particularly “non-renewable” ones like materials, energy, and land. Its spread also tears apart the social, institutional and political capital that has bound people and communities for millennia.

The poor, out of the exigencies of survival, overutilize “renewable” resources, like soils, forests and streams, making them essentially non-renewable under human time-scales. The spread of povertitis, which seems to grow in parallel

with affluenza, doubly degrades the social and political fabric while inexorably destroying the economic and ecological one.

Thus for ecological, economic and societal reasons — not just moral ones — the close interdependence of different segments of society ultimately requires a reasonably equitable economy at global, national and local levels. This interdependence requires that the basic human needs of water, regular nourishing food, secure supplies, shelter, security of tenure, health, personal growth, education, knowledge, participation, empowerment and personal security are ensured for all — and that everyone has the same opportunities for improving their lives.

Humanity is squeezed on all sides — by pressures from large-scale poverty and deprivation, rapid population growth and over-consumption of fast-depleting resources. These pressures are resulting in severe risks to our life support systems: our climate, our biological diversity and the productivity of our land, water and energy resources.

Many new factors are continually emerging. Today's major issues of climate change and species extinction were little discussed twenty five years ago. We do not know what new problems will crop up over the next two decades. While we try and find solutions for problems we know, we are not prepared for the surprises and sudden changes that the environment will throw at us tomorrow. Already our planet's environmental boundaries are under severe pressure on many different fronts. How will the billions expected to be living on it in future decades find adequate food, water, housing,

education or work? We must urgently deal with human deprivation and environmental degradation, which feed on each other and are linked with over consumption and extreme poverty.

If the world economy is to get back on the track to a sustainable future, there will have to be fundamental changes in policies and priorities. The top ones are:

**Putting the last first.** This principle, powerfully enunciated by Mahatma Gandhi, means that the first responsibility of a society is to give the highest priority to the welfare of the most marginalized and deprived of its citizens. This is of course a moral imperative, but it is also a social and political necessity, since pervasive poverty degrades society and politics.

**Parity and fairness.** No nation's future can be secure if its citizens are divided by great inequalities of economic wealth or political power. With today's information and communication technologies, the growing marginalization, alienation and violence that will result can only undermine social stability, the prerequisite of a sustainable society.

**Polluter pays.** Whoever damages the eco-system — the environmental resources on which all life systems are based — must pay the costs incurred by society. These costs must be integrated into economic decision-making systems so that they reflect the true expense of our actions.

**Precaution and minimizing risk.** Wherever we have to choose between different options — including technology and ways of working — we must opt for those that carry least risk to the environment and society and ensure that we err on the side of precaution.

# Time to do it right



Sometimes, when analyzing a successful project that started many years ago, hindsight makes the decisions taken seem much easier, obscuring the context of all the uncertainties of that time. I say this, because it is now much more common to talk about sustainability in the financial service industry than it was when I decided to follow such an approach some 15 years ago.

I started on the journey in 1996 at Banco Real/ABN Amro (Brazil), repeatedly insisting – in a good soccer metaphor for Brazil – that “the game is hard, but we must aim at the ball and not at the opponent’s leg”. This caused some shock; people might not express negative reactions in front of me, but whispered behind my back that, though nice in theory, it would not achieve results. On many occasions very skeptical people



**FABIO BARBOSA,**  
CEO of Abril SA, and a 2012  
UNEP Champion of the Earth

told me: “in order to get through life, especially business life, you have to compromise, find the shortcuts.” I have never done that. I have always chosen the path of transparency, of respect, to guide me day-to-day. I always believed that the way you do business – not just the results, but the way you get them – is very important.

The Banco Real/ABN Amro in Brazil sustainability project – and the huge range of initiatives that support it – expresses these beliefs.

More than a management model, sustainability is, ultimately, the best way of expressing my conviction that we can succeed by doing the right things the right way.

Sustainability is intrinsically linked to business strategy. It is very far from being just philanthropy, and for that reason I don’t like the concept of ‘giving something back’. It is a matter of consciousness about daily activities. At Banco Real, for example, we started incorporating socio-environmental aspects into credit risk analysis, and this helped us to understand that if a company treats its employees well and maintains a healthy relationship with the environment, it has a higher probability of being economically sustainable. We also created new products and lines such as our Ethical Fund – a socially responsible investment

fund – ways of financing treating effluents and converting cars from petrol to natural gas, and microcredit operations. And we improved our relationship with the local community and suppliers.

When I addressed the Brazilian financial service industry, through FEBRABAN (the Brazilian Banks Federation), I talked about self-regulation, about how to improve the financial system's dialogue with various sectors of society, about being closer to all the stakeholders and about deepening the relationship with consumer protection agencies, unions, and the press.

A strong quality financial service system is vital for Brazil and our society. Since the beginning of the crisis in 2008, the financial system has been tested several times: yet in Brazil, unlike in many countries, banks have been part of the solution not of the problem. In a nutshell, banks add value to society by doing three things: protecting and remunerating savings; financing consumption and investments, and providing a mechanism for payments. By doing these things properly, they help national development. And it is even more important to advocate and encourage transparency and ethics in such a way as to align the interests of society and financial institutions, and make them converge.

We live in a time of great changes, with increasing access and dissemination of information, and with increasing transparency in relations between individuals, organizations and even countries. There is no longer a world of “ON” and “OFF”, we are “ON” all the time.



*“Sustainability is intrinsically linked to business strategy. It is very far from being just philanthropy, and for that reason I don’t like the concept of ‘giving something back’. It is a matter of consciousness about daily activities.”*

Companies and organizations need to be alert to these changes and to the new demands of an increasingly open society.

Milton Friedman once said: “The business of business is business.” As I understand it: “The business of business is sustainable business”. This has long been clear to me, since companies need to exist for many years in a constantly changing society. Sustainability is

now a new way to create links with customers, employees, suppliers and shareholders, so all companies in all sectors have to find their own ways to insert it into their core business.

Making all these changes creates new demands, new markets and new business models. So we must think and act systemically. We cannot give up the economic aspect, but we must integrate social and environmental dimensions in all decisions: is not a matter of either/or but of both/and. Consumers are more aware of their rights and duties, and require the same degree of awareness and responsibility in companies’ performances. In times like these, the best way to look to the future is through observation and innovation.

We can only evolve as a society if we accept the balance between rights and obligations – and if we comprehend that we cannot just keep charging governments for solutions and actions, but we must participate and contribute through our day-to-day actions. Society and the world is made out of our attitudes. The good perspective is that the message that each one of us, as a protagonist, is spreading around. It is a new frontier, a new approach, and all citizens are set to win.

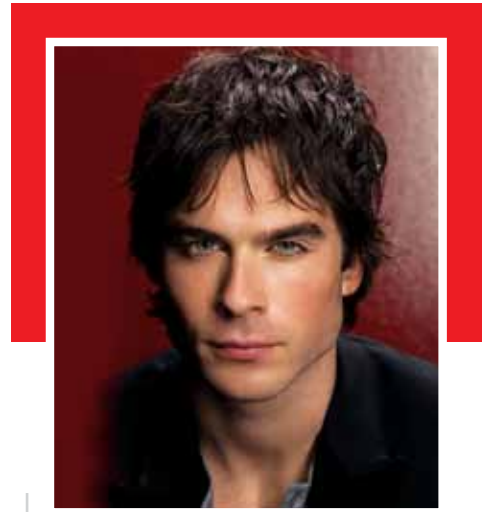
# People

**Ian Joseph Somerhalder** born December 8, 1978, is an American model, actor, producer and environmental activist. Somerhalder is an avid environmentalist and has set up his own non-profit organisation, the Ian Somerhalder Foundation, to boost awareness about humans' impact on the planet. In 2004, Somerhalder scored his breakthrough role when he played Boone Carlyle in the hit TV show *Lost*.

His passion for the environment first gained widespread media attention during the US Gulf Coast oil spill of 2010. His efforts included cleaning of oiled wildlife and taping public service announcements and YouTube videos to let the public know how they could help.

“To me and to the people that go down there, (it’s) one of the most beautiful places in the world. And I actually had to watch it destroyed. And it will be destroyed — forever. My great-grandchildren will not be able to enjoy the Gulf Coast of Louisiana the way I have.”

In May 2010, Somerhalder also filmed a YouTube ‘call to action’ for UNEP urging viewers to pledge/take action for the environment as part of the World Environment Day Challenge between Gisele Bundchen and Don Cheadle.



**Roger Payne**, who was killed along with six other mountaineers in an avalanche in the Alps on 12 July, was a dedicated, life-long environmentalist and close friend of UNEP. As the former Sports and Development Director of the International Mountaineering and Climbing Federation and an accomplished climber, he helped spearhead a UNEP-backed expedition in the Himalayas in 2002 to collect first-hand accounts of environmental and climatic changes in the region from local people and monks.

The expedition, in support of the International Year of the Mountains and to provide a report for World Environment Day 2002, was also tasked with filming the formation of glacial lakes — newly emerging bodies of water appearing in mountain regions as a result of melting glaciers. That footage supported work by UNEP and the International Centre for Integrated Mountain Development based in Nepal which had recorded the emergence of over 40 such lakes and rising concern over potential

hazards to communities downstream if they burst their banks — the so called glacial lake outburst floods.

The seven-strong expedition, which included Mr Payne’s wife Julie Ann-Clyma, set off from the spot where in 1953 Sir Edmund Hillary and Tenzing Norgay departed to conquer Mount Everest. British-born Roger and his climbers found that the original glacier that had been there in the 1950s had retreated five kilometres up the mountain.

UNEP would like to pay tribute to Roger Payne for his life and work while also extending our sincere condolences to his wife and family.

**Maurício de Sousa** Born in 1935, the Brazilian cartoonist/ animator/filmmaker Mauricio de Sousa has brought to life over 200 cartoon characters for kids, led by his signature group, Monica's Gang.

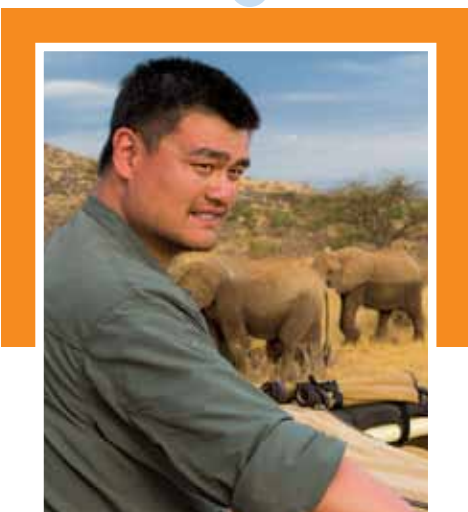
Mauricio's comics have been among the top-selling children's titles in Brazil for many years. Monica's Gang is a group of 6 and 7-year-olds created in 1963, each with a unique personality, who have fun doing what kids everywhere like to do. At the heart of the plots is the eternal rivalry between girls and boys to be the leader of the gang. With Monica, Jimmy Five, Maggy and Smudge the result is all kinds of funny, lively, action-filled stories.

During Rio+20, Mauricio de Sousa announced that he is working on the creation of the "Smudge Waste Plant", which is being developed in partnership with Japanese researchers. The idea is to deploy waste treatment plants in major Brazilian cities, thus contributing to the end of the dumps in Brazil.

With the Ministry of the Environment of Brazil, Mauricio has been developing storylines that aim at raising environmental awareness among children. For Rio+20, the two institutions launched a comic book on how children and youth can contribute to the preservation of the environment, showing the benefits of recycling and also explaining what the UN Conference was all about.

Using Monica's strength to draw attention to important messages, Mauricio has produced a large collection of "Comics for a Cause" — stories that both entertain and teach — with more than 70 million of the magazines distributed free of charge. These public service campaigns focus on topics such as health and hygiene, the dangers of smoking and drugs, clean water, safety, the environment, and also UNICEF's Statutes of the Rights of Children and Adolescents.

<http://www.turmadamonica.com.br/ingles/mauricio/autor.htm>  
[http://www.unicef.org/lac/media\\_10302.htm](http://www.unicef.org/lac/media_10302.htm)

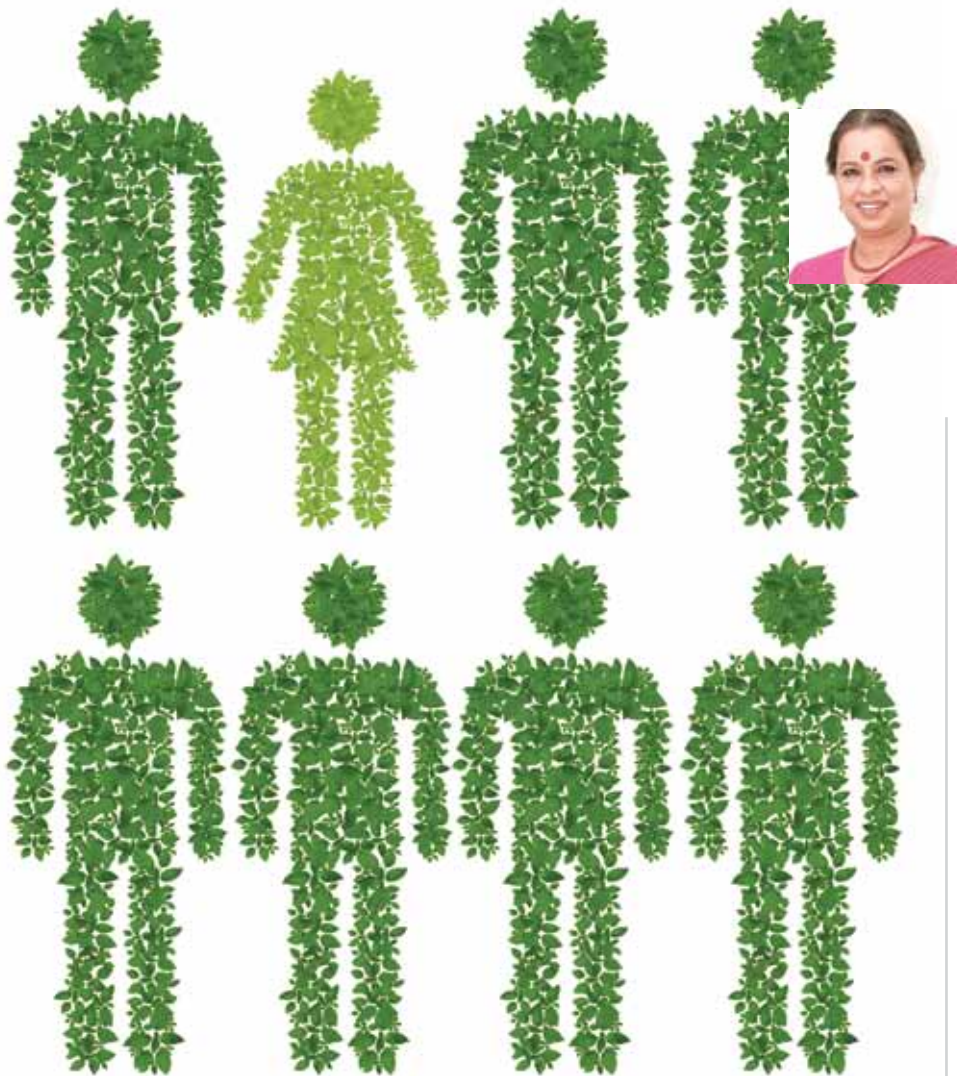


**Yao Ming** the former NBA player travelled to Africa in August for the first time as a global ambassador for WildAid. A committed conservationist, his mission involves coming face-to-face with elephants and rhinos to document a growing crisis blamed partly on soaring Asian demand for rhino horn and ivory products.

"We're trying to deliver the message back to where I live that the only way to stop poaching is to stop the buying," the former NBA player told the UK's *The Times newspaper*, as he watched a herd of elephants wade across the Ewaso Nyiro river in Kenya. "Here, next to a group of elephants, it feels like you are walking into your neighbour's house — just we are different animals. We are humans, they are elephants. That's how I feel."

The Convention on International Trade in Endangered Species (Cites) has warned that the number of elephants killed each year "is likely to run into the tens of thousands". A report published in July 2012 said that China remained the main destination for large-scale ivory consignments. More than 24 tons of illegal ivory was seized worldwide last year, the most since a ban on the trade was introduced in 1989.

Yao is one of China's best-known athletes, with sponsorships with several major companies. His rookie year in the NBA was the subject of a documentary film, *The Year of the Yao*, and he co-wrote, along with NBA analyst Ric Bucher, an autobiography titled *Yao: A Life in Two Worlds*.



**DR RANJANA KUMARI**  
Director, Centre for Social  
Research, India

# Green – but too male

The threat of climate change is increasing and its impacts are starting to be felt across the world. Thus developing climate mitigation strategies and policies at local, national and international levels is becoming increasingly important.

Abundant evidence that traditional economic frameworks are escalating environmental damage has led to the emergence and expansion of new, environmentally sustainable markets. New opportunities have been opened up for people working within these fields as the need for

new policies and initiatives grows. Developing environmentally and socially progressive structures also provides a space to address gender discrimination in the environmental and economic spheres and in decision-making bodies.

Traditional economic models are underpinned by patriarchal attitudes and beliefs. They are also heavily reliant on natural resources in order to fuel development and economic growth. However, they do not take into consideration the limited nature of the world's resources or the

impacts of human activities on the natural environment. Their failure to address climate change highlights the need for new and innovative economic frameworks. Traditional economic models also reinforce social inequalities and gender bias. The exclusion of women from capitalist economies has restricted their ability to meet the needs of all members of society and limits opportunities for social and economic development.

The emerging green economy provides an opportunity to address both environmental degradation and gender discrimination within economic frameworks. It aims to develop new, environmentally sustainable economic structures that are underpinned by scientific thought, respect the limitations of the world's natural resources, and recognize our impacts on the environment. Thus the development of the green economy has the capacity to initiate social change and to support and facilitate women's economic empowerment.

Yet it appears that this opportunity is being ignored. As the green economy expands, women continue to be excluded and historical gender biases are perpetuated. The International Trade Union Confederation has estimated that 50 million green jobs will be created worldwide in the next 20 years. But at least 80 per cent of these are expected to be in male dominated industries, such as construction, engineering, financial and business services, and manufacturing. According to UN Women, women

currently only account for between 9 and 24 per cent of the global workforce in these four industries – making it likely that men will be the main beneficiaries of the green economy. It is clear that women are being excluded from the green economy because job opportunities are generally not in their traditional fields. They are also more likely to participate in informal economies and unpaid work that is excluded from the green economy. Women's marginalization from environmental discourse and climate change mitigation strategies also reflects wider patriarchal structures that subjugate and control them.

Excluding women from developing and implementing the new green economy reinforces these structures, which are central to traditional economic frameworks, and restricts the capacity of the emerging economy to address the needs of both sexes and the environment.

Women are also being marginalized from international environmental dialogue and decision-making bodies. According to the Women's Environment and Development Organisation, women accounted for only 35 per cent of all delegates attending the United Nations Framework Convention on Climate Change in 2010. This is one of the main bodies responsible for developing climate policy at an international level, thus women's unequal participation in those meetings demonstrates their exclusion from environmental decision-making bodies. This also results in the marginalization of women's ideas and perspectives as decision-making bodies continue to rely heavily on male perspectives.

This, in turn, invariably leads to the development of policy initiatives that are less effective overall, and particularly for women. The recent Rio+20 UN Conference

on Sustainable Development highlighted the insensitivity of the global environmental movement towards the issue of gender and it's interconnectedness with the achievement of environmental sustainability and economic stability.

As the Women's Major Group emphasised, the Conference outcome document, *The Future We Want*, completely ignores the connection between gender and climate change. Women's increased vulnerability to environmental degradation and the strong contribution they could make to climate change mitigation and adaptation strategies are

*“International agreements must be developed to ensure that women's rights are realised and they are given opportunities to participate in the green economy.”*

also omitted. The sidelining of gender issues within the Rio+20 negotiations calls into question the capacity of international agreements to achieve legitimately sustainable development.

International agreements must be developed to ensure that women's rights are realised and they are given opportunities to participate in the green economy. The Fifth World Conference on Women – proposed by UN Secretary General Ban Ki-Moon in March this year and, if approved by the UN General Assembly, to be held in 2015 – provides an opportunity to discuss the gender dimensions of climate change and offers a space for developing strategies for

achieving women's empowerment and sustainable development. Government action must also be taken to ensure that women have the same opportunities as men to participate in environmental planning and to benefit from the green economy.

There is a strong need for targeted training programmes for women so that they have the knowledge and skills required to take on new green jobs. Initiatives are also required to break down gender stereotyping within the workforce and to encourage women to undertake training in non-traditional fields, and quotas must be implemented to ensure women have the opportunity to participate in these fields. Women must also be supported to take on leadership roles within the environmental movement, so that climate change mitigation and adaptation strategies take into consideration women's experiences, perspectives and understanding of environmental management and degradation.

The green economy offers a unique and rare opportunity to address climate change and to develop an economic framework that is both environmentally and financially sound. To succeed in this, however, it must address social and economic inequalities that continue to restrict development and jeopardize the success of climate mitigation strategies. A green economy that fails to take into consideration the social dimension of sustainable development will be unable to support vulnerable members of society, including women and children. Instead, it will perpetuate traditional economic models that give preference to profit over people.

Quite simply, it will be unable to achieve sustainable social or environmental development. This is not the future we want.

# innovation



## Sunpower's Alex Trantor

For those who worry that fighting climate change means sacrificing comfort, the luxurious Turanor might be a revelation. The world's biggest solar-powered vessel, run by Planet Solar from Switzerland, returned to the Mediterranean in May, after completing the first-ever round-the-world fueled solely by solar energy.



Captain Eric Dumont: "Its time to realize there is a lot of pollution everywhere, and this boat is a messenger and maybe an alarm to say stop pollution on this planet."

The name Turanor comes from JRR Tolkien's Lord of the Rings saga, and means "the power of the sun". Power is precisely what the 115 foot-long ship is intended to showcase. This summer, it's travelling to cities in the Mediterranean like Valletta, Malta. Each stop attracts a crowd of reporters and government ministers eager to see how it works. The ship's systems are simple at first glance. Sunshine falls on 5,800 square feet of solar panels, made by the company Sunpower. They are the world's most efficient panels — converting about 18 per cent of the energy into electricity, which charges two huge 6 ton lithium ion batteries in each of the hulls. [US measurements]

When Captain Dumont pushes the throttle forward, power is transferred to the two electric motors, which turn special low-speed propellers. The 91-ton boat can travel for three days on the batteries without getting any charge from the sun, but there is a surprising problem with the power system.

The surprising thing is that the production on the solars is outperforming what was expected, and in fact there is too much generating capacity on the roof. There is so much of it that the batteries are not even using all of that power being produced. The ship is a travelling experiment. Technicians in Switzerland monitor the boat via satellite around the clock. Data from its round-the-world trip will be used to improve the technology, increasing its speed, for example.



## Recycled Pulp Fashioned into MP3 Speakers

Sharing music and videos with friends is really amazing, it would be better if the gadgets could use renewable sources such as solar-powered electric energy or follow the Go Green rules.

At the moment, the market offers us eco-friendly speakers that act more like acoustic docks which boost the audio source and can be charged with renewable energy.

Their experience is not satisfactory, however, and to deal with this problem, Chin Yang and Balance Wu have developed the Pulpop MP3 speaker.

Made from recycled material, the product works on vibration technology. Amplification takes place through the supporting surface and the doughnut design.

Challenging the assumption that sound cannot travel well through paper, these speakers have a surface area large enough to allow the greatest resonance possible to travel through 360 degrees.

The speaker's hollow ring is made from pulp paper and moulded at the highest-possible temperature and pressure.





www.inhabitat.com

## How to Detect Apps Leaking Your Data

A service called Mobilescope acts as a watchdog, alerting users when apps copy and transmit sensitive information. One reason that smartphones and smartphone apps are so useful is that they can integrate intimately with our personal lives. But that also puts our personal data at risk.

A new service called Mobilescope hopes to change that by letting a smartphone user examine all the data that apps transfer, and alerting him when sensitive information, such as his name or e-mail address, is transferred.

“It’s a platform-agnostic interception tool that you can use on your Android, iOS, Blackberry, or Windows device,” says Ashkan Soltani, an independent privacy researcher who created Mobilescope with fellow researchers David Campbell and Aldo Cortesi.



Called the Agri-Cube, these units are touted by Daiwa as the first step in the industrialization of agriculture, to be located in and amongst the places where people live, work, and play.

More and more people desire sustainable, organic produce for their own use, and are turning to urban farming in an effort to insure the highest degree of freshness. However, some municipalities, neighborhoods, and homeowners associations have rules that effectively block such endeavors in areas under their sway.

## Prefab-Garden Greenhouse Housing Complex

Daiwa House, Japan’s largest homebuilder, has introduced a line of prefabricated hydroponic vegetable factories, aimed at housing complexes, hotels, and top-end restaurants.

Add drought and pest control to the picture, and suddenly urban farming may seem more trouble than it is worth.

There is a growing need for local supplies of freshly grown produce that avoids the difficulties presented by conventional small farms and gardens.

www.gizmag.com



# GARY NEVILLE

For footballer Gary Neville, sustainability really does begin at home. The former Manchester United and England captain has long been planning to build a revolutionary zero-carbon underground dwelling in Lancashire, Northwest England. In August he submitted his latest plans for the five-bedroom underground property, to be powered by photovoltaic panels, heated with a ground source heat pump, and supplied with recycled rainwater.

“This has been the spark that has ignited my desire to move to a more sustainable lifestyle”, he told **Our Planet**. “I first became aware of the need for sustainability through the development of my home. It was during this journey that I realized that I wanted to do more than just build a living environment: I wanted also to reduce the economic and environmental impact of the property. I am hoping to provide an optimum living environment for myself and my family with high eco standards that is not only unique but a template for how homes can be built.”

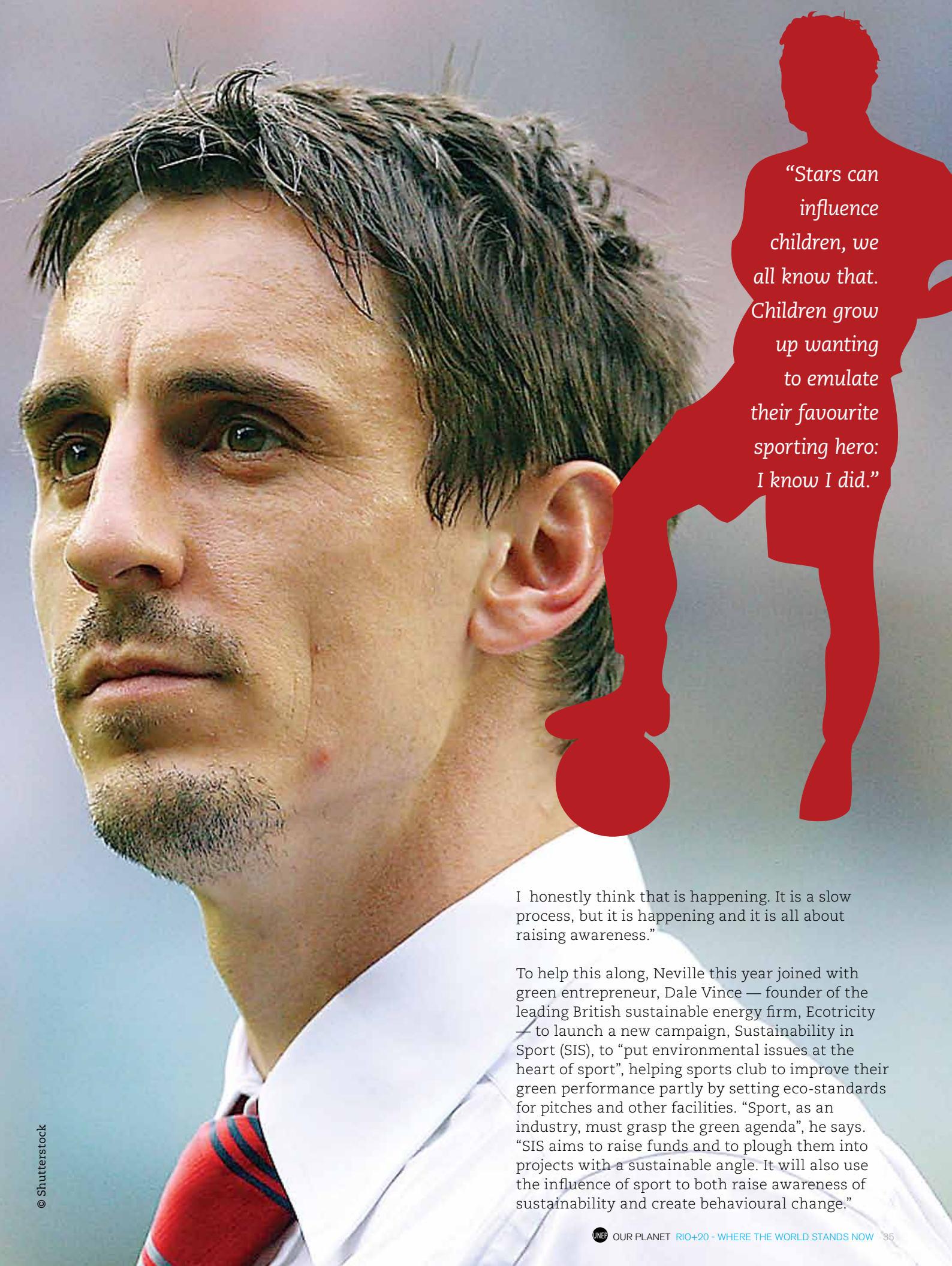
Neville, who joined Manchester United at the age of 16 in 1991, captained the iconic club for five years, and during more than a decade as it's first-choice right back helped it to eight Premier League titles, three FA Cup wins, a FIFA Club World Cup, an Intercontinental Cup and other trophies. He appeared 85 times for England, becoming its 8th most capped player ever. Increasingly committed to environmental

action he had his 2011 testimonial game powered by wind, and made changes to his way of life. “Like many footballers”, he says “I had my share of big, expensive cars, ironically really as I am not a car person. The petrol bills were extortionate, they lost their value. Enough was enough. I then became aware of the work that Toyota was doing in hybrid cars so I gave it a go. I changed my car to a Prius: you can imagine the stick I received when I drove into the players' car park, but it made sense to me. I now drive a Vauxhall Ampera and I think, in the last three months, I have only had to fill it up once!”

He adds: “I am at the beginning of my journey, but I am further on than I was five years ago, and hopefully in the next further years I will be further on still. My experiences also started me thinking how we could use sport to implement sustainable issues. Sport has a global audience reaching millions. It can influence and change people's attitudes, as we have seen over racism with the Kick It Out campaign. So what if sport stars start to install solar panels, promote recycling, travel to venues in different modes of transport. The potential is massive and can only raise awareness of sustainability.

*“I am at the beginning of my journey, but I am further on than I was five years ago, and hopefully in the next further years I will be further on still.”*

“Stars can influence children, we all know that. Children grow up wanting to emulate their favourite sporting hero: I know I did. The Olympics will have bred a whole new generation of children wanting to row, cycle, run, just like their medal heroes of 2012. However, it's not just children but adults too. It's about breaking the stigma that green is not cool.



*“Stars can influence children, we all know that. Children grow up wanting to emulate their favourite sporting hero: I know I did.”*

I honestly think that is happening. It is a slow process, but it is happening and it is all about raising awareness.”

To help this along, Neville this year joined with green entrepreneur, Dale Vince — founder of the leading British sustainable energy firm, Ecotricity — to launch a new campaign, Sustainability in Sport (SIS), to “put environmental issues at the heart of sport”, helping sports club to improve their green performance partly by setting eco-standards for pitches and other facilities. “Sport, as an industry, must grasp the green agenda”, he says. “SIS aims to raise funds and to plough them into projects with a sustainable angle. It will also use the influence of sport to both raise awareness of sustainability and create behavioural change.”



**1972-2012:**  
Serving People  
and the Planet



[www.unep.org/ourplanet](http://www.unep.org/ourplanet)

[www.unep.org/40thAnniversary](http://www.unep.org/40thAnniversary)

[www.unep.org/rio20/](http://www.unep.org/rio20/)