



Amazon jungle in Mato Grosso State, one of Brazil's biggest areas for deforestation. Rio+20 is a chance to reshape environmental organisations in line with today's realities and demands

Climate challenges need a joint response at Rio+20

Next year's 20th anniversary summit is a timely opportunity for the world to consider a central environment policy framework. The G20 members must show leadership and willingness if sustainable development is to be a realistic prospect

By Achim Steiner, UN under-secretary general and executive director, UN Environment Programme

The G20 Cannes Summit comes seven months before Rio+20, in Brazil in June 2012.

Almost 20 years ago – at the 1992 Earth Summit in Rio – world leaders, notably the then French president François Mitterrand, laid the foundations for sustainable development, including three landmark treaties on biodiversity, climate change and desertification.

The question is, can next year's United Nations conference on sustainable development match – and indeed surpass – the Earth Summit while transforming the promises of a previous generation of leaders into a fully implemented programme of sustainable development?

One thing is clear, Rio+20 is going to take place at a time when there is a consensus on the need to rethink the global economy and to re-envision the instruments that are required in order to respond to persisting issues and to address new ones.

The conference also offers an opportunity to reform, retool and refocus the global institutions inherited from the last century in order to ensure that they reflect the needs, geopolitics and demands of the current one.

Much of the debate among G20 members will focus on the theme of a green economy, in the context of sustainable development and poverty eradication.

Another key theme at Rio+20 will be that of an institutional framework in the context of sustainable development – not least as a result of France's initiatives to reform international environmental governance.

A question of timing

Why is the time particularly appropriate for this issue? In 2012, the United Nations Environment Programme (UNEP) will be 40 years old.

Since the 1972 Stockholm Conference – and as a result of the Earth Summit – more than 500 multilateral

environmental agreements (MEAs) have been negotiated. These cover such diverse topics as the trade in endangered species, hazardous waste and protecting the ozone layer – resulting in the Kyoto Protocol. Environmental issues are now incorporated into the work of more than 40 international organisations.

But there is another side to these success stories. Those MEAs have become an administrative burden for many developing countries, stretching limited financial and human resources. From 1992 to 2007, 540 meetings were held for 18 major MEAs, at which 5,084 decisions were taken.

There is also much duplication of effort and fragmentation of purpose. By dealing with symptom upon symptom, challenges appear to have been addressed whereas, in fact, root causes and root solutions have been masked. This approach has also stifled the prospect of a more synergistic and effective approach.

Today's global population of nearly seven billion will surpass the nine billion mark by 2050. Many scientists estimate that a global temperature rise of 4°C by mid-century may occur as a result of rising greenhouse gas emissions – double what many experts regard as the acceptable threshold to prevent damage from climate change.

According to *The Economics of Ecosystems and Biodiversity Report*, an initiative hosted by UNEP, loss of ecosystem services from forests alone may exceed \$4 trillion a year. Also, resource consumption may cause current rates to triple by 2050 – an unsustainable level by any account.

The current management regime is thus failing this generation's search for sustainable development and will certainly short-change the next, unless a more effective, stronger, coherent, focused governance system can be established.

The Rio+20 theme of an institutional framework for sustainable development rests on three pillars: international environmental governance, and economic and social elements. However, many believe that the environmental side remains the weakest pillar of the edifice as it stands.

Deciding on a new organisation

The key question is not just whether a global organisation for the environment is needed, but how it would be configured and what it might do that would prove to be transformative. Such an organisation would require the authority to allow environment ministers to achieve some parity and equity with their economic and social counterparts. UNEP's governing council meets annually, but the decisions taken by environment ministers are referred to the UN General Assembly in New York, where they can be agreed upon or dismissed.

A body with the kind of decision-making authority of the World Trade Organization (WTO) – or a specialised agency such as the World Health Organization – could remedy this disconnect between ambition and reality.

An anchor institution could provide authoritative policy guidance to MEAs in order to address fragmentation and build a more strategic direction to bring together all the distinct parts of the current environment corpus. Such a strengthened body could also confront the issue of financing. Currently decisions on allocating funds for the environment are often taken in parallel forums, such as the Global Environment Facility.

Meanwhile, the lack of a central and anchoring policy framework leads to increased costs, inefficient targeting of scarce financial resources and curtailed consequences for achieving sustainability. Moreover, the world invests significant time, skill and capacity in negotiating treaties, targets and timetables but far less in actually implementing them. Any new structure must therefore address this gap by having a dedicated implementation arm to financially support and build the capacity of developing countries to meet their commitments regionally and nationally.

Other important elements include building accountability into environmental agreements and decisions, backed up by peer review and review mechanisms. The African Union, the WTO and the Human Rights Council offer examples of how this could be done.

Building scientific capacity

Finally, sound science underpins sound policymaking, but too often the wealth of scientific knowledge available to governments is unfiltered or unfit for cooperative decision-making. A comprehensive science-policy interface that spans the full range of environmental challenges and sectors and that can build scientific capacity in developing countries is another key link in this forward-looking governance debate.

So, there is near-universal consensus on the need for reform of international environmental governance. But the specific proposal and level of ambition remain subject to debate. Yet some options and elements of how that reform might be shaped have emerged – including perhaps the World Environment Organisation and UNEP.

Nevertheless, despite the growing consensus, there remains some hesitation, both with regard to the green economy agenda and to the question of an international environment organisation. Indeed, some developing

“Rio+20 is an extraordinary moment in international affairs when not only the challenges, but also the opportunities, of the new century are becoming ever clearer”

economies are concerned that these two directions could be used by developed economies in order to erect 'green' barriers to trade.

There is clearly a need to manage any such potential risks and bring clarity rather than suspicion. Rio+20 is an extraordinary moment in international, planetary affairs when the challenges, but also the opportunities, of the new century are becoming ever clearer.

The world knows enough today about what works and what needs to be fixed. Whether the world's 190-plus nation-states can collectively set aside the politics of suspicion in favour of the politics of shared, supportive and reformative action remains to be seen. However, there are strong indications that many countries are keenly aware of the link between environmental sustainability and economic and social stability. They are equally keenly committed to reforming how the planet is managed in order to achieve transformative and sustainable change.

At the end of the day, any summit needs to craft a deal – with enough for everyone to deem it worthwhile. Political leadership and engagement at the highest level will determine whether Rio can deliver this time around: the G20 members have an important role to play in setting the milestones on the road to Rio in June 2012. ♦

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Trina Solar: sunny skies

As the world's first Global Growth Company Industry Shaper in the solar sector recognised by the World Economic Forum, Trina Solar Limited has a long, illustrious and ongoing history as a solar photovoltaic pioneer

An internationally recognised manufacturer of mono and multicrystalline photovoltaic (PV) modules, publicly traded Trina Solar has morphed into an industry bellwether since its founding in 1997. Trina Solar's high-quality PV modules provide clean, dependable solar electric power to on-grid and off-grid residential, commercial, industrial and utility-scale applications around the world.

Based in Changzhou, China, Trina Solar has attracted investors ranging from Milestones Capital to Merrill Lynch, and has sales and marketing offices, and installation partners, throughout Asia, Europe and North America. The company is committed to improving the competitiveness and efficiency of solar energy en route to leading the way towards developing a sustainable global PV industry.

The company's performance has been exemplary. According to the 2011 global PV industry sustainable growth index report, Trina Solar ranked in first place worldwide. In a separate survey, the Solar Scorecard 2011 world ranking for PV Manufacturers' Toxics Coalition, which measures product recycling, green job creation and corporate transparency, named Trina Solar #2. In the context of its membership in the

Global Growth Company Community, Trina Solar looks forward to sharing its practices of green growth and sustainability across a broader international platform.

Trina Solar researches, develops and manufactures its ingots, wafers, cells and solar modules at its facilities in Changzhou, which it then sells in major PV markets worldwide, including Germany, Italy, the United States, France and Japan. Trina Solar also targets emerging PV markets, such as Israel, Malaysia, India and Australia. The company has been growing steadily, evidenced by its construction of China's first PV model house, 40 standalone PV power stations in Tibet, and China's largest-ever solar project – the 20KW PV power station in Jiangsu province.

According to Jeffrey Fan, Trina Solar's Director of Corporate Communications, the company's vertically integrated business model has established an industry benchmark. The company has evolved beyond a traditional "Smile Curve" – which focuses on original equipment manufacturers (OEM), while other players along the value chain control branding and technological innovation – by adopting instead a "Rainbow Curve," which combines superlative research and development, world-class, high-quality, low-cost manufacturing and global branding under



Among Trina Solar's most recent prestigious projects was the provision of solar panels for Belgium's pavilion at the 2010 Shanghai Expo



Trina Solar's "Rainbow Curve" allows the company to continuously ensure high-quality products and processes along the entire integrated value chain, while maintaining one of the lowest cost structures in the industry

one roof. By combining ingots, wafers, cells and modules on one campus, this pioneering Rainbow Curve allows Trina Solar to continuously ensure high-quality products and processes along the entire integrated value chain, while maintaining one of the lowest cost structures in the industry. Moreover, the company has roughly 150 patents for technical innovations, including producing silicon ingots and wafers by using a portion of reclaimable silicon raw materials, to reduce the reliance on polysilicon.

Today, Trina Solar's growing global presence has expanded to include offices in Zurich, Madrid, Munich, Milan, San José, Seoul, Tokyo, Sydney, Beijing and Shanghai. Trina Solar has long-term partnerships with leading equipment suppliers in Switzerland, Italy, Germany and the United States, which provide cutting-edge equipment with the latest technology for the company's high-quality production facilities. Just last year, says Jeffrey Fan, the company provided solar panels to the Belgium Pavilion on behalf of the 2010 Shanghai Expo and, as part of the United Nations (UN) Millennium Development Goals, teamed up with UN Environment Programme and the Earth Institute at Columbia University to provide off-grid solar systems to African countries

that are lacking grids and are badly in need of electricity. In the company's 2010 fourth-quarter report, Trina Solar reported sales of 1.06 gigawatts, with net revenues of US\$1.857 billion.

In its own backyard, Trina Solar has devoted significant time and resources to dramatically reducing both electricity consumption and pollution caused by its own manufacturing processes, and installed anti-pollution equipment at facilities around the globe to reduce, treat and recycle manufacturing waste.

Innovative, passionate, responsible, as well as committed to further reducing costs by innovating integrative system solutions along the value chain to downstream businesses, it is no coincidence that Trina Solar's logo comprises two colours: blue, representing the sky, and a red dot, mirroring the vast energy of the sun. "Trina", after all, is a transliteration of the original Chinese name 天合 (TianHe). 天 means "sky", or "heavens", while 合 means "combine harmoniously".

Going forward, Trina Solar's continuing mission is to leverage advanced photovoltaic technology to keep bringing the sky's most abundant resource, the sun, to customers around the world in the form of clean, reliable solar electricity.



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A low-carbon economy: the focus of China's 12th Five-Year Plan

China's rapid development in recent years has placed a strain on its environment and resources. As the country aims to extend the economic benefits to all, it is also making plans to reduce harmful emissions and tap into alternative energy sources

By Xu Ting, School of International Relations, University of International Business and Economics, Beijing

In recent years, energy shortages, environmental pollution and climate change have become the focus of the international community. Countries all around the world are trying to develop low-carbon economies with low energy consumption, and to achieve sustainable development.

China has recently experienced rapid economic growth, which has exerted much pressure on its resources and environment. With a per capita gross domestic product (GDP) of \$3,700, ranking it around 100th in the world, it remains the world's largest developing country. According to the United Nations, 150 million people in China still live below the poverty line. The country needs to develop its economy and improve people's livelihoods and living standards while also addressing climate change, controlling greenhouse gas emissions and improving its capacity to adapt. "As a developing country, both development and emissions reduction are priorities," says Xie Zhenhua, deputy director of the National Development and Reform Commission. "Therefore, low-carbon development is the only solution."

There is much attention in China on creating a low-carbon economy and sustainable development, especially as the world struggles to recover from the 2008 financial crisis. The current trend of economic growth will lead to a huge consumption of global energy resources and will degrade the environment further. Developing countries are undergoing rapid industrialisation and urbanisation. However, subject to its level of development and technological constraints, China depends heavily on traditional energy resources, and this increases pressure on both the environment and energy prices.

Defining a low-carbon city

According to the World Wide Fund for Nature (WWF), a low-carbon city is one that maintains a rapid rate of economic development while keeping its energy consumption and carbon dioxide emissions comparatively low. Thus, 'low carbon' includes two parts: energy conservation and emissions reduction on the one hand, and, on the other, renewable energy – which means that steps taken to conserve energy will continue to be implemented, and efforts to increase the use of renewable energy and adjust the energy structure will speed up. China is shifting its focus from the energy conservation described in the 11th Five-Year Plan to the low-carbon economy in the 12th Five-Year Plan.

The 11th Five-Year Plan set two targets for energy conservation and emissions reduction: decreasing GDP energy consumption by 20 per cent and decreasing total emissions of major pollutants by 10 per cent. To achieve these goals, policies and regulations on energy-saving and emissions reduction from central and local governments have been put in place and integrated into the evaluation system of local government and businesses.

By the end of 2006, the first *National Assessment Report on Climate Change* was issued by the Ministry of Science, Development and Reform Commission and six other ministries. It was the first time that the development of a low-carbon economy to address climate change was proposed. 'Green' and 'low-carbon' standards were in effect during preparations for the 2008 Beijing Olympics and during the Games themselves. In August 2009, the 'Renewable Energy Law Amendment' was submitted to the standing committee of the National People's Congress (NPC). One month later, President Hu Jintao announced China's stand and its Climate Change Action Plan at the United Nations Copenhagen conference.

China will develop low-carbon technology to transform traditional industries

On 27 August 2009 the NPC Standing Committee adopted the resolution 'Tackling Climate Change', which highlighted the development of a green and low-carbon economy. Various levels of government are strengthening their support through their budget arrangements.

In addition to local- and central-government policy support, the market for a low-carbon economy has also been established. The Beijing Environment Exchange, the Shanghai Energy and Environment Exchange, and the Tianjin Climate Exchange have been created. *Research on China's Introduction of a Carbon Tax*, a report produced



by the Ministry of Finance, recommended that China introduces a carbon tax within five years. The use of such economic tools should be increased to enhance energy conservation, extend environmental protection and help make the transition to low carbon through pricing, taxation and fiscal policy. The 12th Five-Year Plan promotes the use of market mechanisms and economic instruments to achieve the goal of a low-carbon economy.

The Comprehensive Energy Conservation Programme for the 12th Five-Year Plan, detailed energy-saving targets and the total emissions control programme were agreed upon in principle at a meeting on 19 July 2011, chaired by Premier Wen Jiabao, leader of the National Group in Response to Climate Change and Energy Conservation. The report covers key areas of energy conservation, including enhancing industrial production capacity and eliminating backward production capacity, as well as those in the 12th Five-Year Plan: adjusting and optimising the industrial sector, implementing key projects on energy conservation, promoting the use of advanced technologies, strengthening energy management, and improving energy conservation and efficiency, production and market mechanisms.

Technological innovation is key to coping with climate change. During its 12th Five-Year Plan, China will develop low-carbon technology to transform traditional industries

and will implement energy conservation in industry, construction, transportation and other fields. The plan's climate change objectives will be integrated energy consumption per unit of GDP, carbon-emissions intensity, the proportion of renewable energy and forest carbon sinks.

Upgrading industry

The key to significantly reducing the energy intensity and carbon intensity per unit of GDP is building industrial systems and consumption patterns based on low-carbon emissions. To achieve this, Qinghua University's Low-Carbon Economy Institute recommends, first, upgrading the technology used in traditional industries, speeding up the transformation of those industries by using high technology and improving energy efficiency.

Second, it recommends strategically adjusting the whole industrial structure, developing new low-carbon industries, such as hi-tech industries and modern services, and optimising the industrial structure. Third, it suggests developing new and renewable sources of energy, reducing the proportion of fossil energy and protecting the energy supply while reducing carbon dioxide emissions. Fourth, it recommends regulating public consumption, changing consumption styles, and encouraging business as well as individuals to participate actively. ♦

A woman cycles past a coal-burning power station in Beijing. China is working to reduce its dependence on fossil fuels as its industrial development continues apace

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The TGV, or high-speed train, serves all of the main towns in the region. The region benefits from a first-class network of motorway links going in every direction. >



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With factories in Nantes and Saint-Nazaire, Airbus builds composite aircraft which are lighter and consume less fuel than previous models. >






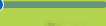

The Pays de la Loire counts more than 5,000 companies with export departments, with a genuine desire and ability for international cooperation. Economically speaking, we can cite famous examples such as Airbus, Bénéteau, Manitou and Fleury Michon. In the entertainment world, the region features internationally successful street theatre companies such as Royal de Luxe as well as the world renowned Folles Journées festival.

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