

# AFRICA & THE GREEN ECONOMY

## Awareness grows of need to be sustainable

Environmental systems are easier to set up when development is still in its early stages, reports **Sarah Murray**

In a partnership taking effect on July 20, the African Development Bank and the World Wide Fund for Nature, the global conservation group, are forming an alliance to produce a report on the state of Africa's environment. The AfDB-WWF marriage is an appropriate one. As awareness grows of the inextricable links between environmental conservation and sustainable development, no region of the world demonstrates the connection as clearly as Africa. As always on the continent, prospects for sustainable development coincide with seemingly insurmountable obstacles. Rising prices for oil and commodities present many African countries with the chance to build stronger economies, while the rise in demand for food has prompted many to look to African agriculture as a potential engine for growth. But climate change poses a

serious threat – African nations may be among the world's lowest emitters of greenhouse gases, but parts of the continent are also among the most vulnerable to climate change. Extreme weather events such as floods and drought are likely to become more frequent and widespread, according to the Intergovernmental Panel on Climate Change. Protracted drought in east Africa has affected millions, and more than a third of Africa's population lives in drought-prone regions. There are 14 countries on the continent experiencing water shortages, according to the WWF, and 11 more nations are expected to be in the same situation by 2025. Moreover, as rapid population growth and rising prosperity lead to shifts in patterns of consumption, the ecological footprint of many African nations is expanding rapidly. This is taking its toll on the environment. In the past four decades, for example, there has been a decline of almost 40 per cent in biodiversity, according to the Africa Living Planet Index. While low levels of power generation partly explain the continent's low carbon footprint compared with other regions, lack of access to energy means that mil-



Well watered? Less than 5 per cent of African arable land is irrigated, providing a chance to try water-efficient, affordable technologies Getty

lions of Africans still use wood for fuel, leading to widespread deforestation. Many people see the potential for large multinationals to contribute to sustainable development on the African continent. Companies such as Unilever and Nestlé are working with the farmers in their supply chains to help them use more sustainable agricultural methods, while also increasing yields and raising incomes. For these companies, such engagements are not only part of their efforts to act as responsible businesses, but boosting the capacity of smallholders and other African businesses helps build more robust supply chains

for commodities such as coffee and cocoa. However, some foreign investment in Africa is raising concerns. As Chinese groups rush to the continent, many worry that the companies behind many of their large projects on African soil do not maintain high environmental standards. Meanwhile, other foreign investors – such as from import-dependent Gulf Arab states – have been attracted by their soaring food prices to take an interest in underdeveloped fertile lands. Debates centre on whether land acquisitions will inject badly needed investment into agriculture – or have a negative

impact on the environment and on local communities, which risk losing access to the land on which they depend. The good news is that, with many countries in the early stages of development, there is still a chance to design more environmentally and socially sustainable systems, and learn from the mistakes of others in order to leapfrog technologies. Anyone seeking evidence of this only has to look at the evolution of telecommunications in Africa, where millions of people have bypassed landlines and moved directly to mobile communications. Many believe that this pattern could be replicated in other sec-

tors. In agriculture, for example, there is the potential to avoid many of the damaging effects of some farming techniques – including water pollution from chemical fertilisers, pesticides and herbicides, loss of biodiversity and soil degradation. With much of Africa's land still undeveloped, moving straight to organic or conservation farming, or introducing new cultivation technologies could be easier as the soil that has not yet been altered by the heavy use of fertilisers and pesticides. Underinvestment has meant that less than 5 per cent of

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## Cameroon's Commitment to the Green Economy

Thanks to its cultural and ecological diversity, Cameroon is known as Africa in miniature. Every ecosystem known on the continent, from tropical rainforests to arid deserts and mineral-rich mangroves, is found here. This makes the county particularly vulnerable to climate change, and means there is much at stake as demand for energy and resources grows. How Cameroon adapts will be symbolic for all of Africa.

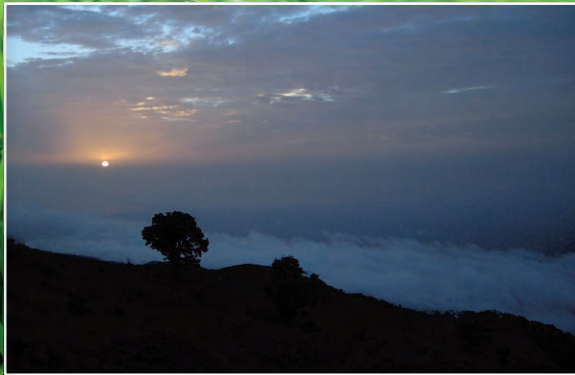
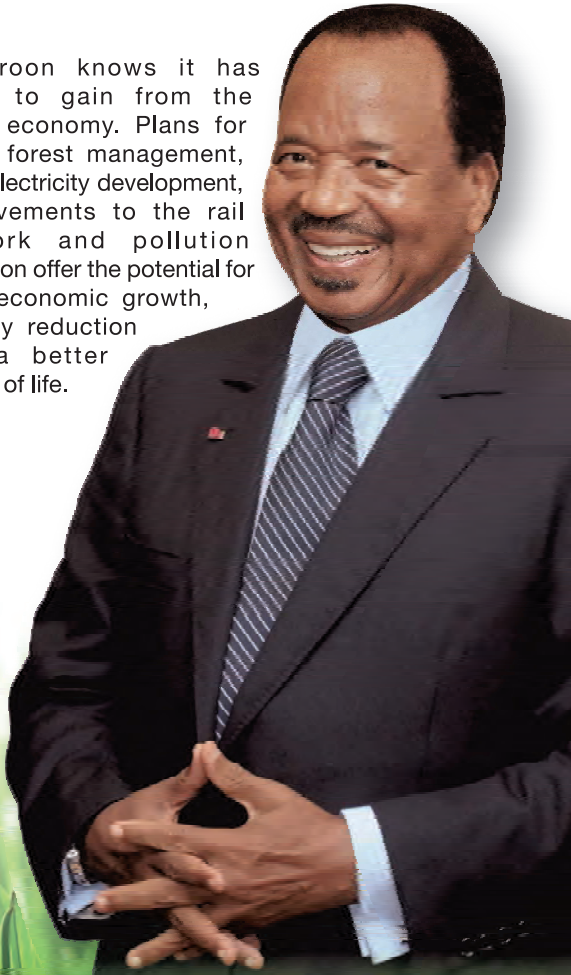
Cameroon's abundant forest, mineral and oil reserves can only be harnessed for the country's benefit through a sustainable development strategy. This is the message President Paul Biya is taking to the Rio+20 United Nations Conference on Sustainable Development. Cameroon is making great strides towards a green economy both through international conventions it has signed up to and in national and local initiatives. But a fully sustainable economy cannot be achieved in isolation. As the international community meets in Rio to assess its record of 20 years of trying to reconcile human activity with environmental concerns, President Biya will urge his global counterparts to work together. The world is a giant ecosystem and for too long, Africa has been bearing the costs of economic development elsewhere with few of the benefits. Developed countries have a role to

play helping developing economies grow sustainably. Following his recent re-election, President Biya set out a vision for Cameroon to become an emerging market economy by 2035 through a series of ambitious energy and transport projects. Cameroon's 20 million people are impatient to catch up with the economic development of other parts of the world, and a commitment to the green economy must not slow them down. That is why Cameroon supports the African position that poverty should be placed at the heart of environmental solutions. How can this be achieved? Firstly, by heeding the lessons learnt from the West's polluted rush to industrialise. Africa must develop sustainably. To do this will require financial incentives and technology transfer from the developed world. Preserving Cameroon's forests,

for example, would be helped by recognising their carbon capture function in the global carbon emissions trading market. In 2005, Cameroon introduced a National Energy Action Plan for the Reduction of Poverty, or PANERP, which seeks to improve access to energy needs without overstretching energy resources. This plan set out a framework to guarantee access to energy for domestic use for 30 percent of rural populations and 60 percent of suburban populations by 2016, 40 percent of which should come from local and renewable energy sources. President Biya, whose 30 years in power has afforded the country political stability and a favourable investment climate, believes upgrading the transport infrastructure can both speed up economic growth and reduce pollution. The railway system is

set for a 15,000 billion CFAF (22 billion euros) upgrade by 2020 with investment from South Korea and on the Doula-Yaounde line by France's Camrail. Attention to detail is crucial, and the government is committed to introducing the green economy at every level. It recently fined 139 public and private companies, some of them foreign owned, up to 25 million FCFA (40,000 euros) for pollution. It is also implementing ecological waste management strategies and integrated water solutions. Since 2000, the Mipromalo project has been encouraging the use of local materials in construction. After the adoption of legislation in favour of renewables, projects are proliferating across Cameroon from solar lightbulbs lighting up the streets of Yaounde to the hydroelectric dams of Edea (264 MW) and Song-loulou (384 MW).

Cameroon knows it has much to gain from the green economy. Plans for viable forest management, hydroelectricity development, improvements to the rail network and pollution reduction offer the potential for jobs, economic growth, poverty reduction and a better quality of life.





# Africa & the Green Economy

## S Africa in front line of global warming battle

### Climate change

Action needs to match ambition, writes  
**Andrew England**

At the UN climate change conference last year, it became clear that South Africa, the host nation, was a front line in the battle against the effects of global warming.

If there were doubts, the Africa Pavilion, set up in large marquee, sought to explain the risks through a photo exhibition starkly laying out the main concerns. The first in the photo series showed lush crops, and pointed out that 75 per cent of Africans are farmers, while the second noted that agriculture accounts for more than a third of exports.

Then images of the feared perils of climate change followed –

floods, desertification, rivers running dry, the effects on crops and wildlife, and the threat of more droughts, cyclones and floods.

Africa is considered highly vulnerable to the effects of climate change. With the continent already afflicted by regular droughts and desertification, experts see a shift in the way governments and companies are seeking to respond to the issues.

South Africa provides some of the clearest examples of the changes that are beginning to take shape – partly because it is the continent's most industrialised and advanced economy – with both the private and public sectors putting in place measures in response to climate change and its potential impact.

The country was built on mining, and its abundant coal resources are used to generate about 95 per cent of its electricity – placing South Africa in the top 20 of the world's worst

emitters of greenhouse gases.

The government, however, has pledged to reduce emissions, and its energy plan envisages renewable power contributing 42 per cent of new generation capacity by 2030. And companies are looking to cut costs at the same time as seizing opportunities for new business.

Peter Oldacre, a renewable energy expert at Deloitte, says: "I'm pretty sure at this stage of the game that there are few organisations that don't accept that climate change is a reality – even if they are not looking at the science, they are certainly being required to respond to issues of legislation and regulation. Eight countries in Africa now have independent power producer segments that concentrate heavily on the framework that will allow for the production of renewable energy."

South Africa's energy plan has already provided new openings for the private sector

inwind and solar power, as the government has begun to approve licences for independent producers as part of its plans to add 3,750MW of renewable energy by 2016.

If all goes to plan, independent power producers will play a significant role in electricity generation for the first time,



**Organisations are having to respond to legislation and regulation, says Peter Oldacre**

and break the monopoly of Eskom, the state utility.

Some companies are also taking the initiative. Santam, a Cape Town-based short-term insurer, looked at the impact on the insurance business of people living in areas that are vulnerable to floods and other disasters

to gauge the impact on clients' claims and premiums. It has also been engaging with local authorities on building regulations in vulnerable areas.

Woolworths, the South African retailer, has been using chicken fat to produce about 5 per cent of the fuel for its truck fleet. That is part of a broader programme that has seen the company introduce measures to reduce its energy usage by 23 per cent. It also obliges suppliers to reduce the chemicals they use, and to improve water management.

Justin Smith, head of sustainability at Woolworths, says the company is seeking a competitive edge, as well as demonstrating its commitment to long-term sustainability, particularly in agriculture. "Our target market is quite aware of these issues and they expect us to be playing a key role in responding to it," he says. "There's a lot of risk, particularly in farming in South Africa [with] water scar-

city...so if we want to continue to produce and sell, we have got to try to manage those risks properly."

Yet in spite of some progress, Richard Worthington, climate change programme manager at the World Wide Fund for Nature (South Africa), says that, relative to what is needed, neither the private sector nor the public sector "are coming close".

He says the South African financial sector is not making sufficient financing available for energy saving projects, while complaining of a "yawing disjuncture" between what governments are saying about climate change and what is happening on the ground.

"If governments are serious, they need to be doing more in terms of policy framework," Mr Worthington says. "The only way we're going to move to a greener economy is with slower and lower returns on investment."

## Awareness grows of need to be sustainable

Continued from Page 1

Africa's arable land is irrigated, which offers the opportunity to introduce new water-efficient, affordable, technologies.

Energy presents a similar picture. Since much of the continent's population lacks access to any source of power apart from traditional fuels, it could be easier to move to renewable sources than in countries where large legacy systems and vested interests lie in the way of more widespread adoption of clean energy.

Massive investment will be required. Sub-Saharan Africa has the world's lowest electricity access rate, and some estimate that, in the absence of stronger policy measures, half its population will still be without power by 2030.

However, renewable energy could help fill the gap. In sub-Saharan Africa, electricity generation from renewable sources grew by 72 per cent between 1998 and 2008 (from 45 to 78 terawatt hours a year), according to the United Nations Environment Programme (UNEP). This means that, from 1998 on, 66 per cent of all new electricity generated in the region has come from renewable sources.

To help create a self-supporting financing market for sustainable energy projects, the International Finance Corporation – the private sector arm of the World Bank – has established the Climate Change Investment Programme, to assist banks in making more money available for private sector energy efficiency efforts and renewable energy projects in sub-Saharan Africa. It also runs an advisory programme.

While such initiatives are encouraging, rapid development and the expansion of the middle class brings with it new environmental problems – ones that were once the preserve of richer nations.

For example, Africa has for many years imported large amounts of electronic waste for disposal, but as the digital divide narrows, a growing proportion of e-waste is being generated domestically.

The combination of imported e-waste and rising domestic consumption of mobile phones, refrigerators, televisions and other equipment means that levels of e-waste could surpass those of Europe by 2017, according to the UNEP, and create high levels of pollution and its accompanying threats to human health.

At the same time, the growth of cities will put intense pressure on natural resources. As the world's fastest urbanising region, some predict that, by 2030, Africa will no longer be predominantly rural.

This means that policy makers need to move aggressively if the continent is to avoid the social inequities and environmental degradation that have become associated with cities in many developing countries.

When it comes to achieving economic growth that is also environmentally sustainable, the reality is that Africa is in a race against time.

The question for policy makers and businesses is whether they are moving fast enough to capitalise on the opportunities presented by the green economy, while preventing rapid development leading to environmental disaster.

## Kenya pins its hopes on steam power

### Geothermal

The potential is there but progress has been slower than expected, says **Katrina Manson**

Deep inside the rim of the world's second largest volcanic caldera, the smell of rotten eggs and furious clouds of white smoke hug the rugged land. Here, where the earth's crust thins as the Rift Valley twists its way north, scientists are hunting for steam.

Stephen Kalgogo, an engineer, stands at the foot of a \$30m rig that plunges its drill-bit more than 2km into the sulphurous heart of the Menengai volcano, 180km north-west of Nairobi. He says: "We've drilled eight wells and found steam in every one."

It is at the forefront of hopes that geothermal energy will boost Kenya's dismal power output. By channelling high pressure steam sourced deep underground to turn turbines, the government hopes to make the most of an estimated 10,000MW of geothermal potential.

For now, the entire country produces 1,200MW, serving only 20 per cent of the population, and power prices are so high that they limit manufacturing and the jobs that go with it.

The approach appeals to deep-pocketed international development finance institutions that are keen to back clean energy.

Gabriel Negatu, east Africa regional director at the African Development Bank, says: "It's risky technology, but in the long term it is clean, sustainable – much more reliable than hydro, which is vulnerable to rainfall and drought – and abundant."

The bank is putting \$145m into the Menengai project. The World Bank, French and Japanese development agencies and others have given more than \$500m in loans and grants and promise more.

Even so, progress has been slow. Olkaria, south of Lake Naivasha in Kenya's Great Rift Valley and Africa's first geothermal power field, has taken more than 30 years to develop.

Today it produces 210MW, which makes Kenya the largest geothermal producer in Africa. However, it is a long way short of the 5,530MW target for 2030, by which time the government predicts that overall power demand will rise to 21,620MW.

Olkaria alone can produce 1,600MW, and has started drilling more projects.



**The Menengai volcano, where engineers are hunting for steam**

"The pace of development has been slower than we wanted, partly because of the risks of hitting dry wells," says Hino Hiroyuki, economic adviser to the prime minister Raila Odinga, who is spearheading Kenya's green energy development.

To establish even a 50MW steam resource, prospectors must drill an average of 13 holes costing close to \$100m just to locate the steam, and billions more are needed for large power plants. State-controlled KenGen, the country's main power generator, says the 5,000MW target is likely to cost \$20bn.

The state-owned Geothermal Development Company (GDC), set up three years ago, has taken on much of the risk. It assesses and drills the holes, with a view to handing steam conversion and power generation to private investors, who can recoup their costs against fixed power prices. With the aid of loans, it is buying its own drill rigs rather than contracting expensive Chinese equipment, which will shave one-third off the cost of drilling.

But it may not be enough, says Prof Hiroyuki. "The pace of development is constrained by the amount of tax money that can be made available, or borrowings from the World Bank, African Development Bank and others," he says, mindful that some private sector groups sit on licences and wait for the value to rise.

Financiers say investors should be able to come in sooner, and GDC has asked for equity funding of up to 80 per cent for early-stage development for Menengai's phase two; this is set to deliver 800MW by 2021.

Several technological and financial developments may lower costs and make private sector participation easier.

One will reduce the lag between discovering steam and turning it into power – and money. Mini-plants installed at the well head can convert steam to power on-site, quickly and inexpensively. "Well head is the way to go for both speed and efficiency," says David Horsey of Civicom, which built Kenya's first 2.5MW wellhead at Eburru.

Construction experts say a well could drilled for \$2m, rather than government estimates of three times more.

Steam-powered energy from well head mini-plants could power rigs that are drilling other wells, saving on expensive diesel. Private sector outfits are winning bids to build well head generators next year.

The other effort is to reduce the risk of drilling dud holes through various insurance schemes, which could accelerate private investment. A geothermal risk mitigation facility from Germany's KfW Development Bank will finance 40 per cent of exploration, and Munich Re, a German insurance company, is developing a policy for Kenya. "Kenya has a fantastic precedent in the 200MW that they have already installed," says George Delacheriois Day, operations manager at UK-based Cluff Geothermal, which is interested in building a steam conversion plant at Menengai.

He says Kenya's "very nice" geothermal legal framework makes the country investor-friendly, while insurance schemes would be a great bonus: "All the mechanisms are there to get excited, and now we are looking to the Kenyan government to allow us to participate in exploration."



**A bend in the river: 11 per cent of the country's territory is off-limits to loggers and forms a network for 13 national parks**

Alamy

## Gabon is a test case for commitment to habitat

### Forestry

**John Reed** considers the chances of policies aimed at conservation

Visitors who arrive in Gabon by air on a clear day are treated to sweeping views of lush jungle, wetlands, and pristine coast.

With a territory the size of the UK, the country has 1.5m inhabitants, 70 per cent of whom live in two cities, Libreville and Port-Gentil. This means it has fewer pressures on its environment than neighbours such as Cameroon or the Democratic Republic of Congo.

Gabon's tropical forest, which covers about 85 per cent of its land, forms a small but vital part of the Congo Basin's "green lung", the world's second-largest after the Amazon. It contains the world's largest population of African forest elephants – a draw for the tourist companies beginning to invest in luxury lodges.

As the country seeks to fashion an economic future outside its oil industry, it is making conservation of the environment a guiding principle. *Gabon vert* or Green Gabon is one of the three pillars of President Ali Bongo Ondimba's master plan to make the country an emerging economy by 2025.

If Gabon follows all the progressive policies it has adopted on paper, it could become a

best-case illustration for Africa. Bas Huijbregts, a regional campaigner with the World Wide Fund for Nature (WWF), says: "If there's one country that should succeed in principle, it's Gabon – not only because of its very low population, but also because of its significant natural resources in oil and gas and mining."

But, on the other hand, if Gabon cannot protect its environment, it bodes ill for the rest of the region. Environmental campaigners say the country could indeed be a regional role model. However, they also worry that its progressive policies could buckle under the pressure of a resource-hungry outside world.

The green ethos dates back to the rule of Omar Bongo Ondimba, father of the current president, who faced down logging companies and formally cordoned off 11 per cent of the country's territory for a network of 13 national parks in 2007.

The younger Mr Bongo has taken things further, naming an inter-ministerial Climate Council to develop the country's low-carbon strategy, and setting up a national parks agency that reports directly to him.

His government is promoting best environmental practices for the resource industries it is promoting, including logging, mining, and palm oil, including requirements for environmental impact assessments on big projects.

In 2010, he imposed a moratorium on the export of unprocessed logs in an effort to compel

foreign investors to process locally more of what they harvest.

As a centrepiece of that policy Olam, a Singaporean resources company, is building a \$200m special economic zone near Libreville that it will own with the Gabonese state on a 60:40 basis. Olam plans to build a second SEZ in Port-Gentil, and has separate plans to build a fertilizer plant and develop up to 150,000 hectares of palm oil.

Mr Bongo's government is seeking to strike a balance between protecting the environment and luring foreign inves-

As the government doles out lucrative resource concessions, he adds, Gabonese society generally "is not engaged in how these resources are allocated".

Mr Bongo's government has not been patient with all of its critics. Marc Ona, director of Brainforest, an environmental group, was detained this month with several colleagues after trying to organise a demonstration on the sidelines of the New York Africa Forum held in Libreville.

Campaigners also warn that Gabon's prized national parks could face a threat from resource companies. The WWF's Mr Huijbregts says in some cases exploration permits have been given out that abut or overlap with national parks.

As an example of the pressure the region's forests face, campaigners point to neighbouring Democratic Republic of Congo, where oil permits have been granted in the Virunga National Park, a Unesco World Heritage Site.

Gabonese officials themselves say they recognise the danger. In a recent interview, Lee White, who heads the national parks agency, acknowledges that while "it isn't all perfect", the government still has the potential and ability to make the country a role model.

"The story of hope for me is the way things have changed, and the high-level political commitment – not just to be a conservation country, but to find a way to balance economic development and the environment," he says.

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# Africa & the Green Economy



Pick of the crop: as populations grow and consumption habits change, the trend of foreign investor interest in Africa's soil is expected to continue, raising the debate about large-scale projects in states that struggle to feed their own people

Alamy

## Countries need right kind of investment

### Food security

Foreigners buying land to grow crops for themselves is not the best model, reports **Andrew England**

As food prices soared and some producer countries placed restrictions on their exports in 2008, a flurry of interest in foreign investment in agriculture was ignited.

Africa, endowed with much fertile but underdeveloped land, found itself the focus of much of the attention, particularly from oil-rich, import-dependent Gulf Arab states.

The interest triggered a series of announcements about planned mega-projects, from

Zambia to Sudan, as food security took on fresh importance.

But it also had a second impact – raising the debate about the sustainability and risks that accompany large-scale foreign investment in the land of often poor, undeveloped African states that in many cases struggle to feed their own people.

Often the schemes attract the pejorative tag of “land grabbing” and there have been high-profile controversies, such as the attempted involvement Dae-woo, the South Korean conglomerate, in an agricultural project in Madagascar.

Experts say that, ultimately, many of the plans of 2008-09 failed to materialise as the food crisis abated and investors became more aware of the political risks and huge logistic difficulties. But as populations grow and consumption habits change,

the trend of foreign investor interest in Africa's soils is expected to continue.

There are no precise figures on the scale of land acquisitions, but Land Matrix, an online database of land agreements, has tracked 986 deals since 2000, amounting to 57.3m hectares of land – 41 per cent of it acquired in Africa, with Ethiopia, Sudan, Zambia, the Democratic Republic of Congo and Madagascar among the top 10 targeted countries.

Africa stands out because much of the land is in the hands of the state and can be relatively cheap, while several governments have been seeking investment in agriculture, says Michael Taylor, at the International Land Coalition.

“It is of serious concern that the investment model that has been used up to now, that of acquiring land, is seemingly the

dominant one, so there's a need for regulation. There's a need for governments to be making firm decisions in light of a broader strategy on rural development,” he says. “We talk to many stakeholders and the one thing we hear right across the board is that we need investment, but it has to be the right kind.”

It is an issue that goes to the heart of the debate around large-scale land projects in Africa – whether foreign investment can be used to aid badly needed development rather than being deemed exploitative.

Paul Mathieu, a senior land tenure officer at the UN's Food and Agriculture Organization, says: “It cannot be seen as necessarily negative, it can be positive, if it's handled in the proper way from the start,” says.

“People may become more cautious and more keen to con-

sider types of investment that do not necessarily imply the acquisition of land.”

Investors could employ people as contract farmers rather than displacing them. “It all depends on how it's done,” Mr Mathieu says.

He says that what is often overlooked is the increasing role of domestic investors in agriculture, but adds that governments often struggle with limited technical and human resources to monitor and regulate projects.

However, there is a risk that, if governments and investors become too cautious, it could stymie investment altogether, says Chris Isaac, director of business development at AgDevCo, a non-profit organisation that works on sub-Saharan Africa agricultural projects.

He says: “There need to be more visible examples of things that work well and that will

take some time, because patient capital [long-term, low cost debt] has become available only recently.”

He believes there are benefits when multinationals source local produce through contract farmers or if commercial farming hubs are extended to enable communities to share in expensive large-scale infrastructure such as irrigation systems.

Mr Isaac says: “We think that model is the only way for certain crops, particularly field crops such as rice, to get productivity levels up to where you can really tackle food insecurity.

“If you can secure the markets for farmers, that puts you in a good place. But you need to do more than that. You need to help farmers become more productive.”

Mr Isaac is based in Mozambique, a poor country with an

estimated 36m hectares of arable land available, of which less the 16 per cent is under production, according to the UN. It has attracted significant foreign investor interest in biofuels projects, rice schemes and forestry plantations.

But some have failed, while others have come into conflict with local communities.

Mozambique also illustrates the underdeveloped state of domestic farming in many African countries – two-thirds of Mozambican farms struggle on two hectares or less, while 42 per cent of farms are unable to ensure food security for the household throughout the year, according to a UN report.

“Unless you bring in private investment, technology and skills, it's going to be very difficult for the agriculture sector to move beyond where it is today,” Mr Isaac says.

## The money is welcome but more controls are needed

### Chinese investment

It is important to monitor and regulate companies, writes **Xan Rice**

In southern Ethiopia, a giant wall of concrete is rising between the sides of a steep gorge. When complete, the Gibe III dam on the Omo river will be the highest in Africa. It will also be one of the most controversial.

Depending on which side of the debate you stand, it offers proof of China's ever-increasing contribution to Africa's development, or evidence of Beijing's willingness to compromise on environmental standards as it pours billions of dollars into the continent.

Ethiopia's government and many ordinary people there say that the dam is a no-brainer. With numerous large rivers flowing from its highlands, the country has huge hydroelectric potential, but in 2009 was producing less than 1,000MW of power to serve its 80m population. Gibe III, one of several huge dams under construction in Ethiopia, will alone have a capacity of 1,870MW.

Yet the project caused alarm from the start. Environmental campaigners say that the dam will have a disastrous impact on hundreds of thousands of people living downstream as well as on Lake Turkana, in Kenya, a World Heritage site, into which the Omo River runs.

Construction of the \$1.75bn dam commenced without funding being arranged, or an environmental impact study completed. Intense pressure from activists helped dissuade the African Development Bank, the World Bank and the European Investment Bank from offering finance. But then the Industrial and Commercial Bank of China (ICBC), which is state-owned, stepped in with a \$500m loan.

Last year, Unesco, the UN body responsible for moni-



Gibe III dam in Ethiopia is being built with a loan from China

toring World Heritage sites, urged Ethiopia to halt all construction immediately and called on “all financial institutions supporting the Gibe III dam to put on hold their financial support”. The request was ignored.

Ikal Angelei, a Kenyan activist, said in a recent interview with the New York Times: “China may have green policies it is trying to implement, but so long as there's no format for holding Chinese companies and banks accountable, then the policies do not work.”

It is an issue that is gaining increasing attention as the business ties between China and Africa continue to grow. Last year Chinese investment in Africa topped \$10bn, bringing accumulated investment to more than \$40bn, according to the Xinhua news agency. It says more than 2,000 Chinese companies, from huge state-owned enterprises to small businesses, have put money into Africa.

Ian Taylor, a professor of international relations and African politics at the University of St Andrews in Scotland, says there is a tendency to create an “awful Chinese people in

Africa” discourse, as well as a level of hypocrisy, given the poor record of some European and American oil companies in places such as the delta region of Nigeria.

But, he says, there are legitimate environmental concerns related to the increased Chinese presence. At an individual level, Chinese nationals have been linked to the illegal

‘They have to be more careful and do more work before going ahead with a project’

harvesting of abalone, an edible mollusc, in South Africa, as well the increase in the smuggling of ivory and rhino horn there and elsewhere on the continent. There are also worries about illegal logging in places such as Gabon and Liberia, says Prof Taylor.

Looking at corporates, the environmental focus is more on mining and hydro-power projects, which usually involve large state-run companies. “In China, the environment is not very

high on the agenda, so when its companies are perceived to misbehave, they are only exporting practices from back home,” he says.

Chinese companies are also under far less scrutiny domestically than their western equivalents, which are closely monitored by civil society organisations and human right groups such as Global Witness, Amnesty International and Friends of the Earth.

But Prof Taylor says the Chinese government is becoming ever more sensitive about the country's image abroad, and that this is slowly changing the way its companies do business overseas. “Large Chinese companies are increasingly committed to corporate social responsibility. As more of them plan to list on stock exchanges in the west, the pressure will only increase.”


Xiao Yuhua, a research associate at the Zhejiang Normal University's Institute of African Studies, agrees. He says that, while some Chinese companies have behaved poorly in Africa, local governments also needed to adopt measures to ensure the environment was protected. “It's good for Africa to have Chinese companies investing. But it's important to monitor and regulate them in order to avoid trouble and to create more opportunities,” he says.

The Gibe III controversy shows that this often fails to happen. It was the Ethiopian government that insisted the project was environmentally sound.

In addition it was a western company – Italy's Salini – that had no objections to building the dam.

Still, the outcry over the ICBC loan serves as a lesson for other Chinese companies and financial institutions operating in Africa, Mr Xiao says.

“They have to be more careful and do more work before agreeing to go ahead with a project,” he says. “While China's strategy is ‘go out and expand’, that needs to be balanced against the need for corporate social responsibility.”



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**There is not enough electricity to ensure the needs of Africa's one billion people. Every day, more than 35 countries in Africa experience load shedding – black outs and brown outs – that prevent people from living and working comfortably.**

This reality predictably generates chronic dissatisfaction, slows down the productivity of local companies, and sets back the development of African economies and the quality of life of millions of Africans.

“After China,” states Enercap CEO Alexandre Vial, “Africa, with its 54 nations, should be the continent where industrial and manufacturing growth is the most vibrant in the world today. With a dynamic master plan, Africa realistically can overcome its energy challenges, and massive growth will follow. Energy is the key.”

Lyon-based Enercap has responded in 2011 with an innovative cost-effective energy plan called “EcoProfitable™ Lighting Africa,” which includes the distribution of 200 million Compact Fluorescent Lamps (CFL) in over 25 countries in Africa. Phillips has manufactured these bulbs exclusively for Enercap, with African specificity. (The lamps enjoy the lowest levels of mercury and the longest life usage, 15 000 hours, of any CFLs on the planet.


The use of Compact Fluorescent Lamps reduces by 80% the electricity consumption over traditional incandescent bulbs. Lighting alone in Africa represents up to 60% of electricity consumption during peak hours. When considering the case of huge countries like Nigeria, the savings of electricity is overwhelmingly compelling. The quickest way to save resources and generate massive savings is to reduce the consumption needs.

In collaboration with the United Nations Environment Program, Enercap is working toward replacing all incandescent lamps in Africa with these energy-efficient CFLs.

Enercap has developed a comprehensive strategy to assist African nations at every phase of this process of transformation.

Enercap accompanies each nation at every stage of the project – definition of needs, technical research, supply of lamps, financing, and the highly lucrative carbon project deployment process.

“Saving energy and creating efficiency,” Vial added “should be the first environmental measure for African nations. Electricity production in Africa currently continues to produce massive carbon emissions, is expensive and is in greater shortage here than anywhere else in the world. It's extraordinary how simply changing light bulbs radically improves this situation.”



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The Enercap message is breaking through. By adopting the “Eco-Profitable Lighting Programme,” Ghana, an energy leader, has shown the way. Chad, the Democratic Republic of Congo, Senegal, Morocco and Nigeria (UNDP supported) have also embarked in the process, and the West African Development Bank and the Bank of Central African States have respectively shown keen interest.

Vial is emphatic that energy losses can be minimized and more electricity will be available for the public and for African businesses. “Anyone who keeps the electricity flowing and increases the buying power of the people will enjoy great public support.”

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**EcoProfitable™ Lighting Africa – key figures**

- 200 million low consumption lamps
- 25 countries
- Largest PoA (Carbon Credit) in Africa
- Reduce power peak load by 8 000 MW
- Save 10 000 GWh of energy / year
- Reduce CO2 emission by 70 Mt
- Technology: CFL with very low mercury or LED
- Main technical partner: PHILIPS
- Save 20 to 100 \$ per year on each household's electricity bill

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# Africa & the Green Economy

## Initiatives to get cities working smoothly

### Urban living

Big problems need smart solutions, says **Sarah Murray**

In the history of cities, few have seen an expansion as rapid as Ouagadougou, capital of Burkina Faso. Its population is projected to grow by 81 per cent in 10 years, from 1.9m in 2010 to 3.4m in 2020, according to UN Habitat.

But while it may be an extreme case, it is part of a trend that will lead to Africa ceasing to be mainly rural as early as 2030.

This has important implications for the countries of what is the world's fastest urbanising continent.

Tony Mwai is IBM's country general manager for east Africa, which, as part of its pro bono Smarter Cities Challenge, is working with several African cities.

He says: "Many are at an exciting and highly significant point in their development, with enormous potential and enormous challenges both looming larger than ever."

Urbanisation presents opportunities to raise living standards for millions of people across the continent.

However, in the absence of progressive public policies and infrastructure investment, the risks are great. These include massive urban slum expansion and rising social and economic inequities, but also environmental degradation and unsustainable pressure on natural resources.

The growth of Africa's cities will put severe pressure on water supplies. And providing citizens with access to clean water and adequate sanitation facilities is already creating headaches for many of Africa's municipal authorities, particularly when it comes to unplanned slum developments.

Meanwhile, in traffic-choked cities such as Accra in Ghana or Lagos in Nigeria, cars and trucks are creating rising levels of pollution. The world's cities account for about 80 per cent of global greenhouse gas emissions.

Simply building more roads does not necessarily help. Despite investment in infrastructure, transport inefficiencies in Nairobi, the Kenyan capital, cost about \$517,000 a day in lost productivity, fuel consumption and pollution, according to IBM.

The company's Smarter Cities Challenge team is designing an IT-based system, using technologies that include mobile phones, sensors and closed-circuit television that will allow cities to highlight traffic problems, make traffic information accessible to citizens, police and planners and digitise functions such as parking.

To benefit from such systems, African cities have plenty to do, from laying fibre optic cables to digitising public records.



Traffic in central Lagos illustrates the problems faced by the continent's growing cities Getty

However, Mr Mwai says that technology can play an important role in addressing the difficulties associated with rapid urbanisation.

He adds: "Recent technological advances are creating new opportunities for transforming cities. We can now monitor, measure and manage nearly any physical system at work in our cities."

Another solution to gridlock and pollution is a bus rapid transit system (BRT) such as that developed in Bogotá, the capital of Colombia.

What distinguishes BRT systems from regular services is the bus routes are segregated from the rest of the traffic and not used by other vehicles.

To raise throughput, passengers pay for tickets before they board and the high-capacity buses are controlled centrally.

Nairobi, Lagos and Cape Town have developed or are developing such systems. Policy makers believe that, by slowing the growth of private car ownership, they will reduce the emission of greenhouse gases.

Meanwhile, social entrepreneurs are coming up with innovative solutions in places where city authori-

ties sometimes fear to tread.

David Kuria, a Kenyan entrepreneur and architect, has developed a new concept for public lavatories.

The Ikotoilet uses sustainable technologies such as bio-digesters and water-less urinals.

To make the toilets financially self-sustaining, Mr Kuria has developed a model whereby small shops such as newspaper stands, shoeshine stalls and mobile

Entrepreneurs are coming up with solutions in places where authorities fear to tread

phone airtime vendors cluster around each Ikotoilet, subsidising its operation, so that locals need only pay a small fee to use it.

Gordon Pirie, deputy director of the African Centre for Cities at the University of Cape Town, believes that these kinds of locally based efforts have huge potential when it comes to making Africa's cities environmentally and socially sustainable.

"In the search for innova-

tion and enterprise, small companies are doing amazing work," he says. "There's no shortage of entrepreneurial spirit and innovation."

In South Africa, a community-based initiative – Violence Prevention through Urban Upgrading – is exploring new ways to tackle crime in Cape Town's township of Khayelitsha.

Among VPUU's initiatives is the establishment of small community centres – known as "active boxes" – in regular positions along pedestrian routes in dangerous areas.

The centres, which offer sports and youth facilities as well as crèches, act as information hubs and, with a caretaker flat on site, are occupied around the clock.

"We talk about the African city as a mega event," says Prof Pirie. "But VPUU is using architecture and planning at a local scale to improve lives for people living in these places."

Prof Pirie also emphasises the importance of creating public spaces in cities. "In these spaces everyone can take a share of the city and meet and mix freely," he says. "There's a wonderful way in which public space can create a cohesion."

## Good for people and the planet

### Case study

#### Aga Khan Trust

**Sarah Murray** looks at the work of the cultural agency

Given the difficulties facing Africa's rapidly expanding urban centres, policy makers might be forgiven for not putting the provision of city parks high on their list of priorities. Yet this is something the Aga Khan Trust for Culture (AKTC) – the cultural agency of the Aga Khan Development Network – is focusing on in several African cities.

The trust believes parks are vital public spaces whose social and environmental role goes far beyond offering picnic areas or views.

"Obviously, there are many pressing problems in cities, but parks are not just physical spaces," says Luis Monreal, general manager of the AKTC. "In reality, these cities need social spaces where different populations can meet at leisure."

In Cairo, the AKTC has used the site of a 500-year-old dump to create a 30-hectare green space, the Al-Azhar Park, which opened in 2005. More recently, the park project was extended to include the restoration of ancient buildings and the

12th-century Ayyubid wall.

In Bamako, the capital of Mali – a city that is home to more than 1m people – the AKTC has rehabilitated a colonial-era botanical garden built by the French. The park encompasses areas of indigenous flora, open lawns, flower gardens, wooded areas and a medicinal garden, as well as jogging and cycling tracks and nature trails.

More recently, in April, the trust signed an agreement with the Kenyan government to take on the restoration of the Nairobi City Park.



Cities need social spaces where different populations can meet at leisure, says Luis Monreal at the Aga Khan Trust

The idea is to protect from further encroachment a space that, according to Mr Monreal, has already lost 40 per cent of its territory and to restore the park's physical and ecological infrastructure.

Such projects clearly have environmental benefits. Parks help conserve natural resources and create habitats for wildlife.

"These places are tremendous reservoirs of biodiversity," says Mr

Monreal. "A park can create a microclimate, regulate the rainfall in the city, contribute to aquifers and provide a home to chimpanzees, birds and small mammals."

In cities, green areas can also mitigate what is known as "urban heat island" – a phenomenon whereby the surfaces of buildings absorb solar radiation and return it to the air as heat.

Trees, shrubs and vegetation not only provide shade but also help reduce city temperatures by returning moisture to the atmosphere, preventing the sun's heat from being absorbed and retained by buildings.

However, says Mr Monreal, parks serve people, as well as the planet. In addition to providing recreational spaces, he says that they have the potential to become educational resources for schools programmes on ecosystems.

Moreover, in many African cities, open spaces are places that bring together some of the diverse ethnic groups that are increasingly migrating from rural to urban areas.

"This multi-ethnicity can generate friction because people lack knowledge of each other," he says. "Parks are social spaces where family groups can meet in a relaxed atmosphere at a time of leisure. So in a way they contribute to policies of integration."

Advertisement

# Cameroon:

## HELE PIERRE

Minister of Environment, Protection of Nature and Sustainable Development. "Vision on the Green Economy"

Yaoundé

**Your Ministry was set up 1992, the same year as the first Earth Summit in Rio, and you have been running it for over a quarter of that time. What have been Cameroon's main environmental achievements in the period?**

**Hele Pierre (HP):** Cameroon's achievements during the last 20 years have largely paid off. In 1996, the National Environment Management Plan (PNGE) was elaborated into a coherent framework, which has been updated to an environmental program in 2011. The set up of a nearly complete legal framework and several sectorial laws cover the emerging environmental needs of the nation and serve as a model for Africa.

From an operational perspective, the implementation of the "Green Sahel" project allowed us to reforest 10,200 hectares of depleted soil in the far north. The battle against invasive species, including Water Jacinth in Wouri Lake, is being expanded to all other affected waterways. And of course, among other many initiatives, the regeneration of our cherished mangroves along the coast is well underway.

**How do you perceive the international outcome for the environment since 1992?**

**HP:** The international outcome of environmental reforms post 1992 continues to be insufficient. Indeed, many engagements have been taken after the Rio summit, including the signature and ratification by many nations of conventions and treaties with regard to the environment and development.

However, one regrettable element is that final agreements from these conventions are non-binding. More consideration has been given to certain agreements than others. Unfortunately, the convention against desertification, which is of great concern for a large part of Africa, has been grossly neglected.

**What is at the top of your agenda for Rio+20?**

**HP:** As a priority for our agenda at the Earth Summit here in Rio, we are adamant that countries respect their past, present, and future commitments. This is a question of respect toward the principal of common – yet differentiated – responsibility. We also foster Africa's emerging green economy and believe that a support fund should be created to facilitate the transition of developing countries toward this new approach.

**In Doula last year, the Economic Community of Central African States called for an international body governing sustainable development. What are your hopes of this being put into action in Rio?**

**HP:** The coordination between the different entities in charge of environmental questions should be reinforced. However, we salute the immense work that the UN Program for the Environment has done since its creation. We think that a specialized UN agency with appropriate mandate and resources should be created to specifically address sustainable development issues. This organization should favor synergies between existing conventions and allow to better articulate questions regarding the green economy.

**The African position puts poverty at the heart of environmental policy. In Cameroon, the 2005 National Energy Plan Reducing Poverty (PANERP) made this evident. Can you tell us what this plan has achieved?**

**HP:** The PANERP has enabled us to diagnose the energy sector in Cameroon, which has largely contributed to the elaboration of the National Energy Strategy; it has also allowed us

in 2009 to set up a Rural Energy Fund, which has served as a mechanism to finance sustainable access to modern energy services. The fund became operational in June 2011 with specific objectives: to finance an extension project for electricity grid, mainly in rural environments (365 target localities, with an objective of 50,000 new connections in two years). Five decentralized electrification projects using renewable energies are also being financed each year. The fund will reinforce the capacities of public and private stakeholders regarding planification, management, exploitation and maintenance of energy systems. Particular attention is given to local administrations in view of this decentralization process. In 2012, four projects were selected and feasibility assessments are now underway. One of these projects is a micro solar energy plant, and the remaining three are small-scale hydro electrical plants.

Lastly, it should be noted that quantifying the results of the actions taken to protect the environment is difficult. Why? Because environmental benefits are usually not commercial and thus hard to evaluate in financial terms.

**Cameroon is blessed by great natural resources, not least its magnificent forests whose preservation is vital for the region. What else can Cameroon do to preserve its natural environment? And, furthermore, what should the international community do to help?**

**HP:** Cameroon must continue to maintain its consistent adjustments to its legal and institutional framework regarding the protection of nature. We are also reinforcing our cooperation with multilateral and bilateral institutions working for the protection of the environment. Sensitizing populations and promoting citizen mobilization around nature protection and conservation are perpetually at the core of our mission.

Cameroon has already designated over 30% of its territory as protected areas and, since 2007, has begun a broad operation called "Green Sahel" to restore damaged land in the north of the country. At the same time, Cameroon has initiated the regeneration of damaged ecosystems on the coast with the help of local players such as municipalities, communities, and NGOs.

To support Cameroon's efforts to preserve the environment, the international community should help us in three main ways: transferring technologies in the sectors of renewable energies, energy efficiency (enhanced cookers and fireplaces), with access to MDP and REDD financing mechanisms; reinforcing governance in the preservation of the environment; and preparing private sector companies to adopt clean production processes.

**How would you describe Cameroon's main contribution to the emergence of a global Green Economy?**

**HP:** Well, that's the heart of the issue. Cameroon is considered the fifth richest African country in terms of biodiversity and is part of the Congo Basin, which is the second largest forest basin in the world after the Amazon basin. By erecting 12 million hectares of forest, we've established over 30% of our national territory as permanent conservation area. This forest capital represents an important fixed asset for the carbon market within the REDD+ process, as well as for the tourism industry.

Next to this, within the framework of the MDP mechanism, a program that captures and treats biogases coming from public dumps is one of the most promising pilot projects in the region. Its first achievement is the installation and exploitation of a plant with a daily treatment capacity of 1500 tons of waste and which is creating close to 200 direct and indirect jobs at Nkouloulou, near Yaoundé. That's a good start.



# Thinking Green

## Twenty years of environmental commitment: Cameroon since Rio 92

Cameroon created the Ministry of Environment and Forestry in 1992, the year of the first Earth Summit. This led to a new forest policy in 1993 and a new forest code in 1994, and new regulations of forest, wildlife and fisheries which since 2004 have been run by a separate Ministry of Forestry and Wildlife. Its sister department, the Ministry of Environment and the Protection of Nature, regulates the environmental policy covering regulation of environmental norms, the conservation of biodiversity through a national network of protected areas, and town planning, among its many responsibilities.

Ever conscious of the need to work together, in 1999, President Biya organised the first Central African Head of States Summit on the sustainable management of dense and humid forest ecosystems in Central Africa.

Pierre Hele, Minister of Environment since 2004, has witnessed Cameroon's signature to a number of international treaties. These include the UN Framework Convention on Climate Change, the UN Convention on Biodiversity, the UN Convention to Combat Desertification, the Stockholm Convention on Persistent Organic Pollutants, the Ramsar Convention on Wetlands and the Rotterdam Convention, among others.

Concerned about the effects of desertification in the north of the country, President Biya created the National Observatory of Climate Change. Cameroon is also a beneficiary of a programme on adaptation to climate change, financed by the Japanese government and the World Bank's Forest Carbon Partnership Fund. It is also involved in the Reduction of Deforestation and Degradation (REDD), a UN pilot programme that works to reduce carbon emissions among developing countries with strong forestry sectors.



## Saving Cameroon's threatened elephants: Need for global response

The slaughter of more than 200 elephants in northern Cameroon by heavily armed poachers on horseback, probably from Sudan, underlines the case for an international response to both poverty and environmental protection.

Cameroon tried valiantly to defend the savannah elephants resident in the Bouba Ndjida National Park, sending 150 soldiers to reinforce park security on March 1. But they were unable to prevent the massacre against the Kalishnikovs of the poachers. One soldier was murdered.

The raiders are believed to have travelled over 1,000 kilometers through Chad and the

Central African Republic, whose elephants they have wiped out, to supply the Sudanese ivory market. It's a journey that has been made for decades, with the difference being that the knives of yesteryear have been replaced by automatic weapons.

Tackling the source of the problem – poverty and war – is not just a Cameroonian issue. It is a global problem. The WWF has urged Cameroon "to engage the governments of Chad and Sudan in a coordinated response to the criminal acts in Bouba N'Djida," and train and equip its rangers in all Cameroon parks to be able to address this level of illegal poaching.



## The huge potential of renewable energy

Cameroon is not just rich in natural resources, but also in renewable energy potential. A sunny climate, waterways and fertile soil are being transformed into renewable energy sources such as solar power, hydroelectricity, biogas.

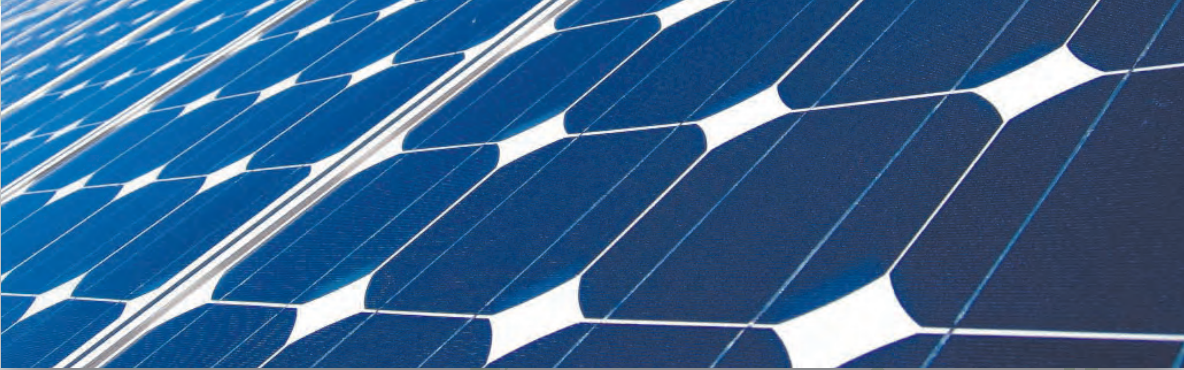
Cameroon has the second-best hydroelectric potential in Africa after the Democratic Republic of Congo, but barely 3 percent of this potential is currently being tapped. Major projects are underway however, including the Lom Pangar dam (30 MW), which will regulate the outflow towards the hydroelectric dams of Edea (264 MW) and Song-loulou (384 MW), to ensure a more regular power supply. Construction on the Memeve'ele dam in the south of the country (200 MW) has just started.

Energy has been being produced from organic vegetal and animal matter for centuries in Cameroon by cooks and in agricultural workers in rural settings, but there is enormous potential to develop what we now call biogas across the country. Projects to tap this energy source are proliferating across the country: villagers and households are benefiting from biogas cookers and biogas production centres using manure thanks to support from

SNV, a Dutch development organization. A European Development Fund project has also established biogas systems in eight prisons. In the private sector, Hysacam, in charge of garbage collection in Cameroon, set up a system to recover biogas from waste landfills for household waste in Nkolfoulou. Some hospitals, including the Bansa Baptist Hospital in Northwest, are making biogas their main source of energy.

Meanwhile Cameroon is intent on developing its huge potential for solar energy. Construction has begun on a 37 billion CFA francs (56 million euros) solar thermal plant in Tibati, in the northern part of Cameroon. A joint venture between The Netherlands' Swea BV and Cameroon's Acise and Exicel, it will be capable of producing 7.5 MW of electricity and 700 cubic metres of drinking water per day upon completion in 2013.

Among many local ventures worth mentioning, China is financing a 17 million Yuan (2 million euro) street lighting project in Yaounde for city streets particularly along the road near the Total Ngousso University of Yaounde II (Soa). It will reduce the number of accidents and increase security on the campus as well as reducing electricity bills.



## Protecting Cameroon's natural resources

Thanks to a rich and varied ecology, Cameroon has one of the best-endowed primary commodity economies in sub-Saharan Africa. It is blessed with a wealth of natural resources, from agriculture, to mining, forestry, and has abundant forest reserves and substantial mineral and oil reserves. Over 70 percent of the population relies on these resources to survive, making them an important social as well as environmental resource.

The economy is highly dependent on commodity exports, which means swings in world prices impact the economy. However President Biya's Vision 2035 aims to make Cameroon less dependent on external shocks, which means developing other areas of the economy and finding more productive and sustainable ways of exploiting its natural resources.

Given the richness of its natural environment, Cameroon is under constant pressure to balance the demands for economic growth and environmental concerns.

Take palm oil for example. Since global demand for palm oil began rising, Cameroon has seen a sharp rise in interest from companies seeking large tracts of land for industrial palm

plantations. At the same time, environmentalists are calling on the country to preserve its forests to mitigate the effects of climate change. To feed the demand for economic development Cameroon has two choices: expand the area under plantation, cutting into the forest, or intensify production on existing plantations.

Forests are not only an important environmental resource - they provide important ecosystem services such as carbon storage, water flow regulation, and soil nutrient recycling – but also a source of economic activity. The wood industry accounts for 8 percent of Cameroon's gross domestic product and around 165,000 jobs.

In 2010, Cameroon signed an agreement with the European Union covering forest law enforcement, governance and trade in timber, which will come into force next year. The first objective of this agreement is to fight illegal tree felling, which accounts for half of exports. It will also improve state revenues, and afford riverside populations a share of the revenues and improve their living conditions.

It is steps such as this that show Cameroon's commitment to the green economy, improving its image around the world as a country serious about the protection of nature.

## The role of Cameroon's private sector in the green economy

Cameroon's energetic private sector is stepping up to the mark with initiatives that show it wants to play a role in preserving the country's riches.

In November last year, Cameroon brought together business from all over the continent in an International Forum for the Pioneers of Corporate Social Responsibility of African Business. Organised by GICAM, Cameroon's main business organisation, and the Africa CSR Institute founded by the young Cameroonian Thierry Téné, it brought together international experts with African business and political leaders to introduce CSR to the continent. A second edition is planned this year in Tunisia and will focus on better waste management.

Meanwhile, Cameroonian business is adapting to the green economy, some because they are required by legislation to do so, and others of their own volition.

Brewers Société anonyme des brasseries du Cameroun and Guinness Cameroun SA created environmental divisions to better manage their waste resources after sanctions. But waste can also be a source of wealth, as recycler Bocom has realised.

Meanwhile, companies are taking advantage of new forms of green energy. Telephone operator MTN powers some of its network through solar power, and food company Somdiaa is looking at producing renewable energy from its waste products.

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Africa & the Green Economy

Countries need to catch up

**Food**  
But being a late-comer could have advantages, writes **Sarah Murray**

With poor transport infrastructure, weak regulatory frameworks and lack of access to finance, many African farmers find it difficult to participate in global agricultural markets.

However, experts argue that, with appropriate investment and a shift to new technologies, African countries could not only increase farm yields substantially – they could do so while minimising their impact on the planet.

Ousmane Badiane, director for Africa at the International Food Policy Research Institute, says: “By investing in science and technology and accelerating technological change, Africa has an opportunity to increase productivity while preserving environmental resources.”. Mr Badiane says the continent has already made substantial progress in increasing farm yields. “Growth in land and labour productivity in agriculture has been in the region of 1 to 5 per cent since the mid-80s,” he says.

He believes that, if this trend continues, the continent could play a bigger role in shoring up global food security. “This may not necessarily be enough for Africa to become a leading supplier to the world,” he says. “But it will increase supply internally and reduce the burden of African demand on the global supply.”

Nevertheless, the continent still has some catching up to do, says David Cleary, director of agriculture at the Nature Conservancy, the US-based environmental advocacy.

“If you compare yields in different commodities to yields in other places, there’s a big gap between Africa and the rest of the world,” he says. “That shows you the potential for increases, but it also shows how persistent are the factors pressing down on the industry.”



Thirsty work: a woman digs a trench to collect rainwater near the village of Tibiri in Niger's southern Zinder region

AFP/Getty

For a start, in many parts of Africa farmers will have to find ways of adapting to the effects of climate change, such as rising temperatures and the increasing frequency of floods and droughts.

Environmental problems are already affecting agricultural production. The UN Food and Agriculture Organization estimates that African yields are up to 40 per cent lower than they should be because of soil degradation.

Water is another problem. “Water is going to be a key limiting factor,” says Mark Driscoll, head of the one planet food programme at WWF UK. “More work needs to be done to support smallholders in conserving water through irrigation techniques, and governments need to work on better watershed and ecosystem management.”

Meanwhile, in many countries, poor infrastructure ham-

pers farmers’ ability to expand.

Innovative models to address this are being piloted in some places. Erinch Sahan, private sector policy adviser at Oxfam, the UK development charity, cites a system whereby farmers can deposit grain in a warehouse and get a receipt for it, which can be used to secure a bank loan.

Broader policy initiatives will also be essential if African farming is to be transformed into an industry that is both environmentally sustainable and helps the continent become a more significant contributor to the global food supply.

Some cite the example set by Brazil. “Thirty years ago, many parts of Brazil looked like parts of east Africa in terms of soil and climate,” says Mr Cleary. “Brazil had inadequate infrastructure, but with good investment it transformed its agriculture – and the secret of success

was smart policy.” This included funding for agronomic training and investment in the development of new seed varieties.

However, while pushing up yields is one thing, many argue that this must be done without increasing environmental degradation. Here again, Mr Cleary cites the example of Brazil. “You had a massive increase in agricultural production but you also had a strong regulatory framework,” he says.

Laws were introduced requiring a protective buffer of native vegetation around watercourses to prevent soil erosion and the contamination of fresh water by agricultural chemical run-off.

“If you have a good regulatory framework, that makes a huge difference to the environmental impact of agriculture,” says Mr Cleary.

In some respects, however, African countries have a head

start when it comes to developing environmentally sustainable farming practices – the ability to leapfrog agricultural technologies.

With agronomic training through agricultural extension services, says Mr Cleary, farmers could learn how to apply fertiliser efficiently and discriminately. “That way, you could get a huge increase in yields without a lot of environmental impact,” he says.

The traditional lack of reliance on fertilisers and pesticides means that African farmers could also move more swiftly to next-generation technologies.

“They can look around and see the downside of fertilisers and work on technologies that allow them to raise productivity while managing the environment,” says Mr Badiane. “Being a laggard and late-comer has an advantage – the ability to learn from the mistakes of others.”

**Nile dam** Water wars averted for now

When Ethiopia’s plan to dam the Blue Nile grew grander within a month of the resignation of President Hosni Mubarak, it did not go unnoticed in his country, downstream, Nile-dependent Egypt.

The Grand Renaissance Dam, at 6,000MW, will be Africa’s largest hydroelectric project.

“We have the right to develop our natural resource,” says Alemayehu Tegenu, Ethiopia’s minister for water and energy.

“We were not benefiting much from the Nile. There is a group of people who are totally against the dam and they are not right.”

Aside from some green lobbyists who fear the destruction of the environment, he means Egypt.

Clinging to a colonial treaty signed in 1929, Egypt has veto rights over any upstream developments that might affect the Nile’s flow.

A series of agreements sees neighbouring Sudan awarded 18.5bn cu metres a year and 55bn cu metres for Egypt, even though Ethiopia is the source for 85 per cent of the river and was left out of a later 1959 deal.

Meles Zenawi, Ethiopia’s prime minister, has long challenged “old-fashioned ideas based on the assumption that the Nile water belongs to Egypt”. Even so, the dam could deprive Egypt of more than 17bn cu metres a year. The country relies on the river for 90 per cent of its water.

“Ethiopia has pushed this through in a time of turmoil in Egypt,” says an international official. “Egypt has not had the time or breathing room to focus on it – the new leaders have not been able to unite the country around a single issue and certainly not around the Nile.

“The guys in Addis have seen this opportunity and stepped right through it. If Mubarak was still in power today, it would have been the beginning of a water war,” says the official.

Mohamed Nasr El Din Allam, Egypt’s outgoing minister of water, says the dam will create shortages in water, power and farming land and lead to political, economic and social instability.

Ethiopia insists that its downstream neighbours Sudan and Egypt have nothing to fear from its decision to dam the

Blue Nile, which feeds both countries. On the contrary, they will in fact both gain.

Mr Alemayehu says: “The dam will benefit both countries: it will not reduce the flow, but regulate it. They will benefit because it will reduce silt, control floods, regulate water flow throughout the seasons.”

Sudan and Egypt have calmed their responses in the past year and a technical committee has started work on an assessment of the dam’s impact. The committee is expected to report next year, but Ethiopia is not waiting. “We are allowing the establishment of the technical committee so as to build confidence,” says Mr Alemayehu.

Costing an estimated \$4.8bn and taking four years to build, it is the sort of large-scale project that usually has donors and development finance institutions rushing to help, glad to have a project in so poor a country to spend their money on.

But they have not touched it. Instead, Ethiopian state television airs nightly appeals to everyone from bus drivers to businessmen, to buy bonds to support the project. Even political opposition figures are buying bonds in what has become a national rallying cry.

“Meles is being very smart on this – it is a very expensive dam but it is a transformative project,” says an international official. “I think Ethiopia will deliver on the first 20 per cent of it and by then donors will be rushing to come in.”

“Everyone is looking nervously to see how much progress there is,” says the official. Sudan and Egypt must also face the likelihood that the Ethiopian project sets a precedent, should other upstream countries such as Uganda or South Sudan, on the White Nile, decide to dam the river flow too.

Over the past two years, Uganda, Ethiopia, Kenya, Tanzania, Rwanda, Burundi and Democratic Republic of Congo have all signed an agreement to seek more water from the Nile, which they argue should be shared more fairly. Egypt says the agreement does not overturn the 1929 agreement.

The Nile’s water wars may merely be on hold.

**Katrina Manson**

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