

Sustainable Development Update

– Keeps you updated on the interactions between ecological issues and social and economic development

www.albaeco.com/sdu/

Issue 1, Volume 7, 2007

“ the question whether rich countries should invest in developing nations or reduce energy consumption and encourage renewable alternatives in their own countries seems to be a false choice... ”

[Page 6 >>](#)

Why quick tends to be dirty...



Too often we try to solve environmental problems through quick-fixes that address the symptoms rather than the root of problems, says a group of scientist.

[Page 5 >>](#)



The beautiful but noxious water hyacinths have re-invaded in Lake Victoria

[Page 6 >>](#)

“In the book, a cheese-loving king’s castle is infested with mice. So the king brings in cats to get rid of the mice. Then the castle’s overrun with cats, so he brings in dogs to get rid of them, then lions to get rid of the dogs, elephants to get rid of the lions, and finally, mice to get rid of the elephants.”

Climate scientist Andrew Weaver considers the idea of tinkering with Earth’s air, water or sunlight to fight global warming... and remembers the lessons of a children’s book:

<http://www.enn.com/today.html?id=12414>

Why don’t they go fishing?

How is it that a poor people regularly hit by droughts keeps its back to the only rich resource they have: the ocean? SDU visited one of the poorest and most remote regions of the south coast of Madagascar to find out why. And came home with a deepened realisation of the importance of understanding a culture when working with poverty alleviation and sustainable development.

[Feature article, page 3 >>](#)



The inequity of the climate threat to coral reefs

A new study demonstrates that gross inequities exist between the nations most responsible for greenhouse gas emissions and the poor coastal communities that suffer the most from climate-induced coral reef degradation.

SDU has frequently reported how coral reefs, providers of vital goods and services for coastal communities, are being threatened by climate change. In the March-issue of the science journal BioScience Simon Donner and David Potere, based at Princeton University, show that 75 percent of the people living within 100 km of coral reefs (a total of 424 million) are in the poorest developing countries. The majority of these people live in rural settings and are directly dependent on the goods and services provided by coral reefs. Ironically then, the same people who are most dependent on coral reefs are responsible for only a tiny fraction of the world’s greenhouse gas

emissions. The per capita greenhouse gas emission of the same set of people was calculated to be 1.78 metric tons per person of carbon dioxide. By comparison, greenhouse gas emissions average 20.1 tons per person in the United States and 11.4 metric tons in Europe, Japan and Russia.



These fishermen in Tanzania depend on healthy coral reefs. Photo: Jerker Lokrantz, azote.se

Too much focus on the aesthetics

If the projections of future climate change and associated declines in live coral cover over the next few decades come true, it is clear that the developing world will suffer the greatest consequences. This potential human inequity of the threat posed by climate change is often unknown by the general public, or easily forgotten due to an exaggerated focus on the aesthetics of coral reefs, the authors write: *Coral reefs have been adopted as an iconic “flagship” ecosystem in the effort to encourage reductions in greenhouse gas emissions... Who among us would want to be blamed for killing Nemo?*

—/Albert Norström

Source:

Donner, S. & Potere, D. 2007. The Inequity of the Global Threat to Coral Reefs. *BioScience* 57, pp 214-215: <http://www.simondonner.com>

SDU contents, Issue 1, Volume 7, 2007:

EDITORIAL

A new era for the environment and this newsletter, p 2

FEATURES

Why a coastal people rather starve than fish, p 3-4

Why quick fixes tend to be dirty, p 5

IN BRIEF

The inequity of the climate threat to coral reefs, p 1

Return of water hyacinths plagues Lake Victoria, p 6

The pros and cons of carbon trading, p 6

Enjoyable visualisations of

development statistics , p 7

SDU-NUMBERS

57 countries report a return of forests

SUSTAINABILITY SCHOOL

“Invasive species”, p 2

We at Sida's Environment Policy Division have contributed both finance and advisory support to this newsletter since its first issue in late 2001. The idea of supporting a newsletter focussing on recent research findings on the connections between ecology, society and economy stemmed from a long-growing realisation that without environmental protection, there will be no sustainable development, and no successful poverty reduction. Already in 1991 Sida produced the first publication on the linkages between poverty and the environment, showing how decisive the management of environmental resources is for economic development and livelihoods in developing countries.

Since then a lot has happened in this area. In 2005 the UN Millennium Ecosystem Assessment report highlighted the critical, yet often ignored, need to invest in the maintenance of ecosystem services in striving for poverty alleviation and sustainable development. More recently, the Stern-report showed that the economic costs of climate change could be worse than the two world wars and the great depression put together (with disproportionate costs on poor regions of the world), but if drastic measures are taken now, the cost could be as little as one per cent of the global GDP. Likewise, the 2006 Human Development Report showed that the economic return would be US\$8 for each US\$1 invested in achieving the MDG target for water and sanitation.

Nonetheless, even if these reports have indeed got some attention the impact on policy still leaves a lot to be desired. One interesting initiative, however, is the recently launched report by the Environmental Audit Committee (EAC) of the UK Parliament that assesses the impact of the Millennium Ecosystem Assessment on decision-making in the UK and the international community. The EAC was established in 1997 and is in itself a promising step forward as it is set up to consider to what extent the policies and programmes of all government departments and non-departmental public bodies contribute to environmental protection and sustainable development.

Through this newsletter and the many other efforts of Sida's Environment Policy Division we want to recognise that with-

out a holistic approach to development – one that encompasses the need to protect the environment we share and reverse the loss of natural resources – achieving the Millennium Development Goals will remain a pipedream. On the contrary, we are convinced that meaningful progress on the MDGs can only be achieved when countries fully integrate environmental sustainability targets into their national poverty reduction plans and back these efforts with environmental monitoring as part of their national monitoring systems.

"We live in a new era for environmental issues and in a changing world facing many uncertainties and challenges"

The Sustainable Development Update (SDU), is published by Albaeco, an independent organisation that is based at Stockholm University. Albaeco communicates the latest in sustainability science with a special emphasis on resilience – the capacity of interwoven social and ecological systems to deal with change and continue to develop. Beginning with this issue SDU will extend its coverage and encompass the areas previously covered by another newsletter commissioned by Sida, the "EDC News – environment and development challenges". EDC News in its present format is discontinued, but its coverage of news and reports on the relationship between poverty alleviation, natural resources, human rights, livelihoods, conflicts, humanitarian disasters and health will henceforth be included in SDU. This will provide opportunity for an even more holistic approach and unified effort to communicate the latest findings on the relationship between environmental issues and socio-economic development at large.

We live in a new era for environmental issues and in a changing world facing many uncertainties and challenges. How can we develop capacity to cope with, adapt to and possibly even transform into improved situations in the face of these changes? This newsletter will help you stay updated. Enjoy your reading!

Mats Segnestam, Head of the Environment Policy Division, Sida, Swedish International Development Cooperation Agency

Sustainability School: "Invasive species"

Foreign species include animals, plants, mushrooms, or microorganisms that have spread beyond their natural boundaries with the help of humans. Intentionally or by mistake. Some of these foreign species influence their new environment in a serious and undesirable way, and are called invasive species.

While some foreign species have had positive economic and/or ecological impacts in their new ecosystems alien invasive species is now acknowledged by scientists and governments to be one of the world's major threats to native biological diversity. As such, the damage caused by invasive species can sometimes even slow nations' efforts to cut poverty rates, according to UN's environmental programme UNEP.

The total global economic damage caused by invasive alien species has been estimated at US\$400 billion per year. As the damage runs into such a massive amount of money annually this issue is no longer only a concern for conservationists. It is getting higher and higher on the agenda of economists and planners as global trade and communication are leading to the mixing of plant and animal species worldwide.

Golden snails and giant fish

The Nile perch, that was introduced in Lake Victoria in 1954 to promote fishing, is one of the most notorious examples. It grows to a length of 2 metres and feeds on almost anything that moves. The Nile perches have caused the complete or

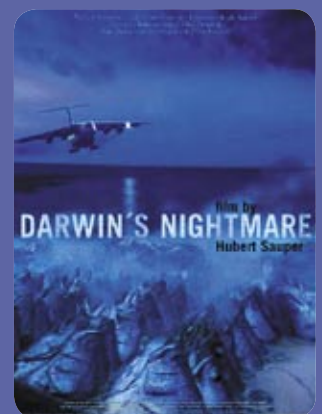
near extinction of 200 local fish species that were important to local fishermen. Today, the perch are shipped around the globe where, in contrast to the poor local population, people can afford to buy them.

Another example is the Golden apple snails that originated in the Amazon and were introduced in Southeast Asia for cultivation as human food in 1980. But the snails spread to rice fields and wetlands where they consume many rice and water plants. Without water plants, more nutrients are left for phytoplankton. This results in algae blooms and threatens biodiversity and an economically poor population that depends on rice and fish.

More at:

"100 of the Worst Invasive Species" from IUCN: <http://www.issg.org/booklet.pdf>

See also this issue's article on water hyacinths, page 6.



The story of the invasive Nile perch and its effect on poor people's livelihood has even turned into an award-winning movie.

Turning the back to the sea: Why a coastal people in Madagascar starve rather than fish

Why does a society that lives in constant poverty and uncertainty insist on keeping its back to the ocean? SDU's Jacob von Heland went to one of the poorest and most remote region of Madagascar to find out why. He came home with an insight that identity and customs are important factors when investigating alternatives that will allow a society to ascend from poverty. Some things are more important than securing bread on the table.

In the south of Madagascar there is a region that is called Androy and where many ecological and anthropological studies have been made. The studies have often concerned the "dry spiny forests" that the region is named after (*roy*, thorn) and the taboos of the Tandroy people that protect them. These are fascinating studies, but they do not explain the main mystery of "l'extreme sud de Mada". Namely, why don't the Tandroy fish?

"This would not be so strange were the Tandroy well-off from agriculture and livestock – but they are not"

Currently half of the world's population live within 150 kilometres from the coast and the numbers are growing. The *Aquatic Ape Theory* followers – that believe that mankind developed by the ocean and not on the savannahs – may say that it is only natural. Deep down we all want to live the Brazilian or Australian beach way of life. If it were so, the Tandroy people are a most definite exception. In 1958 the ethnologist Susanne Frère described the situation like this:

"The people that live close to the coast all seem to have turned their backs to [the ocean]; nowhere along the coast you find villages... because the Tandroy are neither sailors nor fishermen."

This would perhaps not be so strange were the Tandroy well-off from agriculture and livestock. But they are not. Androy is considered to be one of the poorest regions of Madagascar. This stems from the vulnerability of the society to the droughts that hit the region with regular intervals, roughly once every decade. The result is a gradual loss of the cattle zebu, the source of security, leaving the people left with nothing and having to rebuild their stock, knowing that soon a new drought will hit with the same result.

This situation was well described



Elders in Ambonaivo on the south coast of Madagascar. Morabe to the left has never been to the ocean but Fingana has. Photo: Jacob von Heland.

already in the 1920s by the colonial administrator Raymond Decary in his writings about Androy. Yet, Decary never proposed that fishing in the ocean could be a way out of this poverty trap. Hence, it would seem natural to assume that the coast of Androy is not fit for fishing. However, marine biologist Petit, mentions several suitable fishing sites in Androy in his book *L'industries des Pêches à Madagascar* (1931). But briefly explains that the Tandroy people themselves do not fish.

Why is this? Two years ago I had the opportunity to visit one of the sites mentioned by Petit, Lavanono, a small village beautifully situated at the bottom of a valley. During the lobster fishing season cars come here weekly to buy the catch. At this date however, there was no fish to be found at all in the entire village. I could see a couple of dugout canoes on the beach, and there were fishermen there. But they did not seem to be like the fishermen I am used to. Fortunately, I met with three French tourists that had brought spear guns and caught us something to eat. They also told me that there was a lot out there.

"God made the ocean salty to show that it is sacred and belongs to him"

The first Tandroy that I talked to about the ocean told me that fishing was a kind of "faly" taboo. It was not strictly taboo, like eating tortoise (which it the worst thing a Tandroy can do), rather it is "something a Tandroy does not do". Like an old woman said: "Just because I may be hungry, it does not mean that I will eat anything".

French ethnographer Guérin (1977) writes that the Tandroy believe that God made the ocean salty to show that it is sacred and belongs to him. Similarly, a Tandroy official in the regional develop-

ment office told me that people see it as a border to the spiritual world that one should not cross.

I hoped that Morabe and Fingana (on the photo above) would be able to give me some context. They live in Ambonaivo village, six kilometres away from the coast and I ask them why they don't fish during the dry spells, like now, when people have nothing to eat.

– It is not our custom to know the ocean. If you go to the ocean, it means that you want to die and I do not know anything about the ocean. Let us talk about something else, like the faly, Fingana said hopefully.

The Tandroy love talking about their

"Try giving a starving Hindu a steak, or an orthodox Jew crayfish and you will have a similar problem"

taboos and the ancestral legends. But this was the first time Fingana told me that he "did not know anything" about something. The same thing repeated itself with Morabe. End of discussion.

Never been to the sea – 6 km away

Then, during the weekend we decided to try and find a way down to the coast. Morabe explained in the car that he had not yet been there and wanted to see what it looked like up close. It was maybe six kilometres away, which is closer than the cattle market in Ambovombe that the men walk to every Monday morning.

Every day in the morning you could sense the humidity from the ocean in the wind. Glancing at the landscape you would see how the trees had been shaped from it, their backs crooked in a northwesterly direction. The children would play with shells and their parents talk about where to take the cattle to find green grass, and curse the fine grains of sand that had moved into the fields dur-

Continues>>>



“The best fisherman in Faux Cap”

ing the night.

Later, I visited another village called Maroalomainte, situated closer to the ocean. Here things were different, the mayor Gaston and his brother Armand had no problems to talk about the ocean. Most of the Tandroy in the village fish when they need to. But traditionally, they said, the Tandroy have never liked salt. Salty food makes you thirsty, which is bad in a region where there is no water. Also, people believe that it brings bad luck. A Tandroy saying, there are many, goes something like “Salt will erode your wealth, just like salt disappears when it dissolves in water.”

One key reason for fishing to start at all, the mayor explained, was that the elders- responsible for the laws of the ancestors, along with the children, were the first to die during heavy droughts.

That was how it began. With a drought, they tell me. A few people from the community began to collect sea food, simply by walking along the beach. Then they grilled whatever they found, on the beach. If, however, you brought sea food over the fields, close to the cattle or into the village, people would accuse you of bringing misfortune.

Still, for the longest time people did not go into the ocean, they were afraid of everything, even the waves, the mayor says.

– When I was young, I did not dare to go deeper than to my chest.

It was people from the outside that brought change. The neighbouring people, the Vezo and the Tanosy, arrived and got married with the Tandroy and taught their traditional fishing techniques, swimming, diving and using a canoe. But the missionaries also played an important part. They saw the inherent potential of using the ocean during droughts and preached Bible stories, for example about Peter who had been a fisherman before he became a disciple.

Before they did not know the ocean, now they are like the Vezo

“Go to Faux-Cap if you want to meet Tandroy that know how to fish”, Many people told me. Faux Cap, “the wrong cape”, is the second most southerly tip of Madagascar. It was here that eighty fishermen died in the cyclone 2005 – rough-

ly a fourth of the total estimated fishing fleet in Androy. They had been surprised by the storm at sea, in the small dugout canoes, some could not even swim.

Faux Cap is a beautiful peninsula with a small hotel called “le Cactus”. The hotel manager Marie-Angela is from the Vezo people, “the people of the sea” and the natural authority of fishing in the area. She told me the history of how fishing became the primary occupation in Faux Cap. Just like in Maroalomainte it was the neighbouring people, the Vezo, that arrived with knowledge. This was in the 1950s and they came in search of new fishing waters. Some stayed and married with the local people. Later, in the 1970s, Mr. Balzer, a charismatic Frenchman who knew nothing about fishing, launched a fishing development project in the area. They built a freezing chamber and an airplane came weekly to collect fish. It was slowly developing into a small business. Subsequently came the years of the Second Republic when the Malagasy seized power and most of



the French left or were thrown out. In the “Deborah” cyclone in 1978, the freezing chambers broke and disappeared.

“Today, the Tandroy are almost as good fishermen as the Vezo”, Marie-Angela said. “They dive for lobsters, know how to sail and to use nets”. The best fisherman in Faux Cap is actually a young Tandroy with “the Vezo haircut” (carrot orange coloured hair bleached by the salty water and the sun). He is always in the water and can dive to ten metre depths to hunt for lobsters.

“Every time I avoid the dangerous ocean I survive”

In Androy generation after generation of Tandroy clans have lived on the border to poverty. They have followed a cycle growing cattle during the good years, and losing the wealth during the serious droughts that hit once in ten years and so on. Some droughts have been more severe than others, for example the drought in 1928-30, that people refer to as the drought of “many bones”.

Looking for food during times of famine you inevitably reach the coast and you will see crabs running on the beach or mussels on the corals during low tide. Would you not try to eat them? Apparently not if the social pressure is so strong

and your identity in your clan would be at stake. Generations before you have turned their backs to the ocean.

It is understandable. For non-fishing Tandroy, the only impact the ocean generates is a negative one. If it is not moving sand dunes, wind stress and cyclones, it is slave traders and colonials with weapons. On top of that you might die if you go into it, like the fishermen two years ago.

If the experience is “every time I avoid the ocean, I survive” and vice versa, thus the society will eventually become blind to its embedded potential. But that is not the entire explanation. Fingana, one of the two elders from Ambonaivo village, once told me that he knew that “the ocean is full of everything you can think of.” So he knew that there was food in it. Only it was not “Tandroy food”.

Maslowian model does not apply

The psychologist Maslow’s famous model “the Hierarchy of Needs” ranks the human needs, starting with the most basic, “food” and “water”, somewhere in the middle you have the “family” and at the very top you have values like morality or problem solving. If you apply this model to the Tandroy society, you will see that it does not fit. The Maslowian model rather seems to be flipped over: people starve and keep their backs to available food, as consuming it would go against society’s norms and practices. Try giving a starving Hindu a steak, or an orthodox Jew crayfish and you will have a similar problem.

Maybe it sounds too simple, but it would not surprise me if many poverty alleviation projects have failed for this particular reason. Say an international conference is held where it is decided to launch a project against starvation in Sub-Saharan Africa. The problem is lack of food. In Androy the solution would be to turn the pastoralist Tandroy into fishermen. The program is established. Three years later the evaluation shows that practically nothing has happened. The project is a failure. A new conference sets a new agenda, while everyone present wonder how it is possible that Africa continues to stand still.

/Jacob von Heland

Sources:

Raymond Decary, L’Androy. 1928-31 Paris

Michel Guérin, Le défi: l’Androy et l’appel à la vie. Fianarantsoa 1977

Etienne de flacourt, l’histoire de le grand ile. de Madagascar, 1658 Paris

Susanne Frère. Panorama de l’Androy, 1958 Paris

Too often we try to solve environmental problems through quick-fixes that address the symptoms rather than the root of the problems. Instead we should strive for fundamental changes based on a deeper understanding of socio-political dilemmas and ecological dynamics, says an international group of renowned scientist in a recent issue of the journal Environment.

”Environment” is not your regular science journal, full of scientific jargon that hopelessly divides specialties and excludes the general reader. It even has a nice layout, lots of colour photos and is much more readable than specialized journals in its analysis of the interactions between environment and development issues.

In the December issue of 2006 environmental economist Thomas Sterner from the University of Gothenburg, Sweden, and 16 colleagues conclude that successful solutions to environmental problems requires a systemic view and treatment of the causes of problems (like poverty, inequity, property rights, consumption patterns, lifestyle, population growth and economic policies) not the symptoms.

– I think we will see many different types of quick fixes to environmental problems in the future. This is not a problem in itself as long as these do not aggravate the causes of problems or decrease our efforts in dealing with them, says Max Troell, one of the authors and associate professor at The Beijer International Institute of Ecological Economics in Stockholm.

“An emphasis on quick fixes instead of emissions reductions increases the risk of crossing unexpected and abrupt thresholds in climate and ecological systems, probably causing irreversible changes”

Sterner, Troell and their co-authors walk us through a number of case studies from poor and rich regions of the world, from hurricane Katrina via the eutrophication of the Baltic Sea to pandemics like SARS and the Avian flu. Even though the group of researchers admits that there are indeed quick fixes that work (like the liming of Scandinavian lakes that bought time as acidic emissions were reduced) they show convincingly that reactive short-sighted responses to large-scale environmental disturbances are all too common. Such policy responses, they write, tend to lead to uncertainty and surprises in flows of natural resources and ecosystem services to society:

“Policy responses that treat the symptoms of environmental problems can undermine sustainability by increasing the probability of future environmental disasters, the damage caused by those disasters, or both. Worse, they can mask ongoing deterioration that ultimately leads to irreversible environmental damage.”

Working with nature instead

Often quick fixes seem very appealing at first glance as their long-term costs tend to be masked and their short-term benefits exaggerated. This is among other things caused by conventional discount rates that tend to favour current consumers at the expense of future generations by discounting their costs.

Many problems, like the hurricane Katrina and the avian flu, do require quick-fixes to minimize immediate suffering, but they are often caused, in the first place, by the gradual effects of previous short-sighted policies. Nonetheless, politicians tend to prefer spending money on such quick fixes rather than bearing the political costs of more fundamental solutions. This, argue the authors, is due to “lack of understanding of ecological mechanisms, failure to recognize the gravity of the problem, vested interests, and absence of institutions to address public goods and inter-

generational choices effectively”.

So, what do the authors behind the Environment-article prescribe then? Which are the more fundamental and sustainable solutions? In the case of New Orleans, where thoughtless management led to the 2005 flood catastrophe, they suggest restoring the river to its natural course and rebuilding the floodplains and delta that once gave the city protection. This strategy is

based on the notion that working with instead of against nature by restoring ecosystem services is better in the long run. Similar choices between quick fixes and more fundamental solutions exist for a number of other current environmental problems, the authors claim. Global climate change due to increased emissions of greenhouse gases is one example:

– We have now developed sophisticated engineering solutions for carbon storage underground, both on land and in the sea. This is probably something good in the short run, however, the long-term solution involves fundamental changes in how we live and produce things, says Max Troell.

Treating symptoms and causes

The long-term solution is of course to decrease the burning of oil, coal and gas, but many quick-fixes have emerged. These include construction of seawalls in coastal areas; shifting to less climate-sensitive crops; and fertilizing the sea with iron in order to increase the capacity of phytoplankton to convert carbon dioxide into organic carbon. However, such an emphasis on quick fixes instead of emissions reductions increases the risk of crossing unexpected and abrupt thresholds in climate and ecological systems, probably causing irreversible changes.

“Today politicians often prefer to invest in quick fixes even when they reduce long-term options due to losses in biodiversity and degradation of ecosystem services”

Today, the authors conclude, politicians often prefer to invest in quick fixes even when they reduce long-term options due to losses in biodiversity and degradation of ecosystem services that human societies and economies rely on. Therefore, the authors suggest a new kind of systems thinking in policy making that pay much more attention to the negative side-effects of quick-fixes and see the numerous possibilities in investing in sustainable use of ecosystems and their services.

/Fredrik Moberg

Source:

Sterner T., Troell M., Vincent J., Aniyar S., Barrett S., Brock W., Carpenter S., Chopra K., Ehrlich P., Hoel M., Levin S., Mäler K-G., Norberg J., Pihl L., Söderqvist T., Wilen J., Xepapadeas A. (2006) Quick fixes for the environment- part of the solution or part of the problem?. *Environment* 48(10): 20-27.



NASA recently published a set of images showing the speed with which the beautiful but noxious water hyacinth has reinvaded Lake Victoria. It was introduced over a century ago from South America and produces large floating carpets of fleshy flowers that block waterways, clog irrigation canals, disrupt hydropower, decrease fishing and create habitat for disease-carrying mosquitoes.

NASA's Earth Observatory publishes a new astonishing satellite image every day. Recently they published a set of images showing how the South American water hyacinth has reinvaded Lake Victoria. The plant was introduced to Africa over a century ago, but it did not become a problem until the early 1990s. It grew extremely fast and produced large floating carpets of fleshy flowers that covered substantial areas blocking waterways, clogging irrigation canals, disrupting hydropower, and decreasing the profitability of fishing. Moreover, it can also crowd out other species and prevent sunlight and oxygen from reaching plant and animal life below. It also creates new habitat for disease-carrying insects like mosquitoes. However, hyacinths also provided refugia for some species from another invasive species, the introduced Nile Perch.

Beautiful but destructive

Subsequently, the hyacinths almost disappeared from the lake in the late 90s, perhaps, but not clearly, due to the introduction of a weevil used for biological control. Now following a wet year, which increased nutrient runoff into the lake, the beautiful but destructive plant has returned. The NASA images above show the Winam Gulf in Kenya. The gulf was the most severely affected



The water hyacinth, known as one of the world's most noxious invasive weeds, now returns to plague Lake Victoria. Photo: NASA

region during the first hyacinth outbreak in 1998. By 2000, the area covered by water hyacinth was down to only a few percent of the area covered in 1998. When the right image was taken, December 2005, the hyacinths were almost entirely gone. In late 2006, however, unusually heavy rains and floods swept agricultural run-off and nutrient-rich sediment into the lake making the Winam Gulf brown in the top left image in 2006. The huge inflow not only turned the water brown, but it also resulted in a return of water hyacinths turning large parts of the Winam Gulf bright green in the left image.

/Garry Peterson and Fredrik Moberg

More at:

http://earthobservatory.nasa.gov/Newsroom/NewImages/images.php3?img_id=17560

<http://rs.resalliance.org/2007/02/22/water-hyacinth-re-invades-lake-victoria/>

Trading the commons – the pros and cons of carbon trading

Will carbon trading really reduce rich countries' carbon dioxide emissions and deliver sustainable development for poorer countries? Or will it only lead to carbon "laundering" – a situation where rich countries continue their unsustainable lifestyles at the expense of the developing world?

In 1994 the United Nations Framework of Climate Change, UNFCCC, entered into force. The effort is meant to stabilize the concentrations of greenhouse gases (GHG) at a level where the planet's climate integrity will be kept. Launching different strategies for decreasing emissions and adapting to impacts is part of the responsibility, also including the provision of financial and technological support to developing countries. Today almost all nations (parties) in the world have ratified the convention.

With the intention to sharpen the joining countries' obligations, UNFCCC developed and adopted the Kyoto protocol (1997), in force from 2005. Under the protocol several countries have assigned emission reductions. To allocate these in the most cost-effective way and at the same time encourage technology transfer the Kyoto protocol has three central mechanisms: 1) IET-International Emission Trading, 2) JI-Joint Implementation, which means investment in cleaner technology, transferred between two nations both having emission caps and 3) CDM-Clean Development Mechanism. The CDM seems to harbour a lot of potentials being a cooperation between a developing country (without emission cap) and a more developed country with assigned reductions.

The aim is to help deliver a sustainable development together with technology transfer which will bring GHG reductions. In comparison with ordinary aid the CDM has the advantage of making the host country a more equal partner, because the emission reductions, transformed into tradable CO₂ units are valued by the investing country. But there are also critical voices stat-

ing that CDM might be an escape from necessary changes in wealthy nations' lifestyles. The IET period will run for five years, but so far only the first period 2008-2012 is settled (the two other mechanisms already running). Thereafter, Kyoto might be enlarged or included in a global trading system.



Effective and fair?

There are many experiments with emission trading going on in different parts of the world. One of them is ETS-Emission Trading Scheme, in the European Union, running from 2005. Through a linking directive with the Kyoto protocol it has been possible to use CDM and JI in the ETS. For instance, Sweden is involved in six CDM projects located in China, India and Brazil and led by the Swedish Energy Agency. One difference between ETS and IET is that the former deals with national emissions at the level of individual firms while in the Kyoto system the actors will be states or authorized firms. This is of interest since in the long run individual emissions might be the only way to accomplish a fair play. Of course today's allocation of permits in EU has nothing to do with individual permits but a knowledge of the dynamic and technical infrastructure on a finer scale might be gained. The true challenge ahead will be to connect the world in a system that will be ecologically and economically *effective* and socially *fair*.

/ Maria Mutt

More at:

http://unfccc.int/kyoto_protocol/mechanisms/items/1673.php

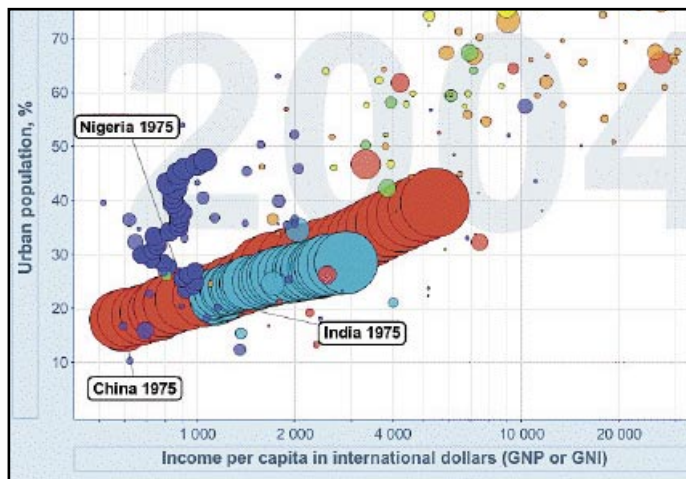
The Gapminder software that converts international development statistics into moving and interactive graphics is now available through Google. Now even more people will get the chance to discover the software that "turn boring numbers into enjoyable animations that make sense of the world".

Google is now hosting the Gapminder development visualisation software produced by a Swedish NGO. It allows the interactive visualisation and animation of several world development statistics, showing world development trends over roughly the past thirty years (ranges vary among data sources). Indicators include: CO₂ emissions/capita, Child mortality, Fertility, Economic growth, Income/capita, Life expectancy, Military budget, Girl/Boys in School, Population, and Urbanization.

Visualising huge changes

The site has a great interface that easily allows the data to be visualised as either maps or scatterplots, as change the display. On the scatterplots each point can be represented by a bubble that represents the population of the country or other indicators. This site allows a user to easily explore data showing some of the huge changes - in things such as urbanisation, life expectancy and population - that have occurred over past decades.

Above to the right is an example showing the relationship between per capita income and urbanisation - showing the different trajectories of Nigeria, China and India. Many visualisations are possible. There is for example a graph that shows the difference in life expectancy and child mortality between North and South Korea (with shading showing fertility), and another



graph showing urban population vs. carbon dioxide emissions per capita.

Gapminder is a non-profit venture for development and provision of free software that visualise human development in collaboration with universities, UN organisations, public agencies and non-governmental organisations. Gapminder foundation was founded in 2005 by Hans Rosling, professor of International Health at Karolinska Institutet in Stockholm, together with his son and daughter-in-law.

/Garry Peterson

More at:

<http://tools.google.com/gapminder/>
<http://www.gapminder.org/>

Raising income and protecting the environment: The Finalists for the Equator Prize announced

This year's version of the UN-backed Equator Initiative has announced its 25 finalists. This time innovative ecotourism, community fishery cooperatives and sustainable crocodile-egg harvesting are among the nominees. The Equator Prize is a prestigious international award for outstanding local efforts to reduce poverty through the conservation and sustainable use of biodiversity.

– Local communities of the developing world are the source of many of the most innovative and imaginative responses to the challenges of sustainable development, said Professor Jeffrey Sachs, jury member and advisor to former UN Secretary-General on the Millennium Development Goals.

The Equator Initiative was launched in 2002 by the UN Development Programme (UNDP). Partners include Governments, civil society groups, local communities and the private sector. The reason why the equatorial region has its own prize is that it is home to the world's greatest concentrations of biological diversity, while many of its countries are among the poorest. The five Prize winners, chosen from more than 300 nominations from 70 countries will be announced in Germany on World Environment Day on 5 June.

<http://www.undp.org/equatorinitiative/>

57

... countries reported an increase in forest area between year 2000 and 2005, while 83 claimed a decrease, according to the recent State of the World's Forests report from the UN Food and Agriculture Organization (FAO). Forests disappear at a rate of twice the size of Paris, daily. Countries facing the most serious challenges in achieving sustainable use and conservation of forests tend to be the ones with the largest problems with poverty and civil conflict. Nonetheless, the new FAO-report offers some hope. It shows that, in some regions, centuries of deforestation are being reversed thanks to better forest management and economic development.

Africa and Latin America and the Caribbean faced the highest losses in forest area, but the FAO expects that forest management will improve in both regions, thanks to political support and commitment to stemming deforestation and improve current management mechanisms.

However, illegal logging is growing in some areas, and forests are also threatened by insects and diseases. The spread of pests, to which forests are vulnerable, is facilitated by the spread of monoculture forest plantations together with increasing transport, travel and trade.

Climate change could also endanger forests, as a warmer climate may increase the severity of forest fires, pests and diseases, the FAO reports.

<http://www.fao.org/docrep/009/a0773e/a0773e00.htm>

SDU-numbers



The Sustainable Development Update focuses on the links between ecology, society and the economy. It is produced by Albaeco, an independent non-profit organisation, in cooperation with Stockholm Resilience Centre, the Center for Transdisciplinary Environmental Research (CTM) and the Department of Systems Ecology, all at Stockholm University; the Beijer International Institute of Ecological Economics; the Resilience Alliance; and the Stockholm Environment Institute (SEI). It is produced with support from Sida, the Swedish International Development Cooperation Agency, Environment Policy

Division. **Feedback:** We welcome comments, questions, and article ideas. **Editor:** Fredrik Moberg, fredrik@albaeco.com **Want to subscribe?** Go to: www.albaeco.com/subscribe **Want to read the newsletter at our website with clickable links?** www.albaeco.com/sdu **Thanks to** the following individuals for their thoughtful comments and/or assistance: Carl Folke, Eric Langenskiöld, Annika Moberg. **Contributors:** Jacob von Heland, Maria Mutt and Albert Norström, Albaeco; Garry Peterson, Resilience Alliance; Mats Segnestam, Sida.