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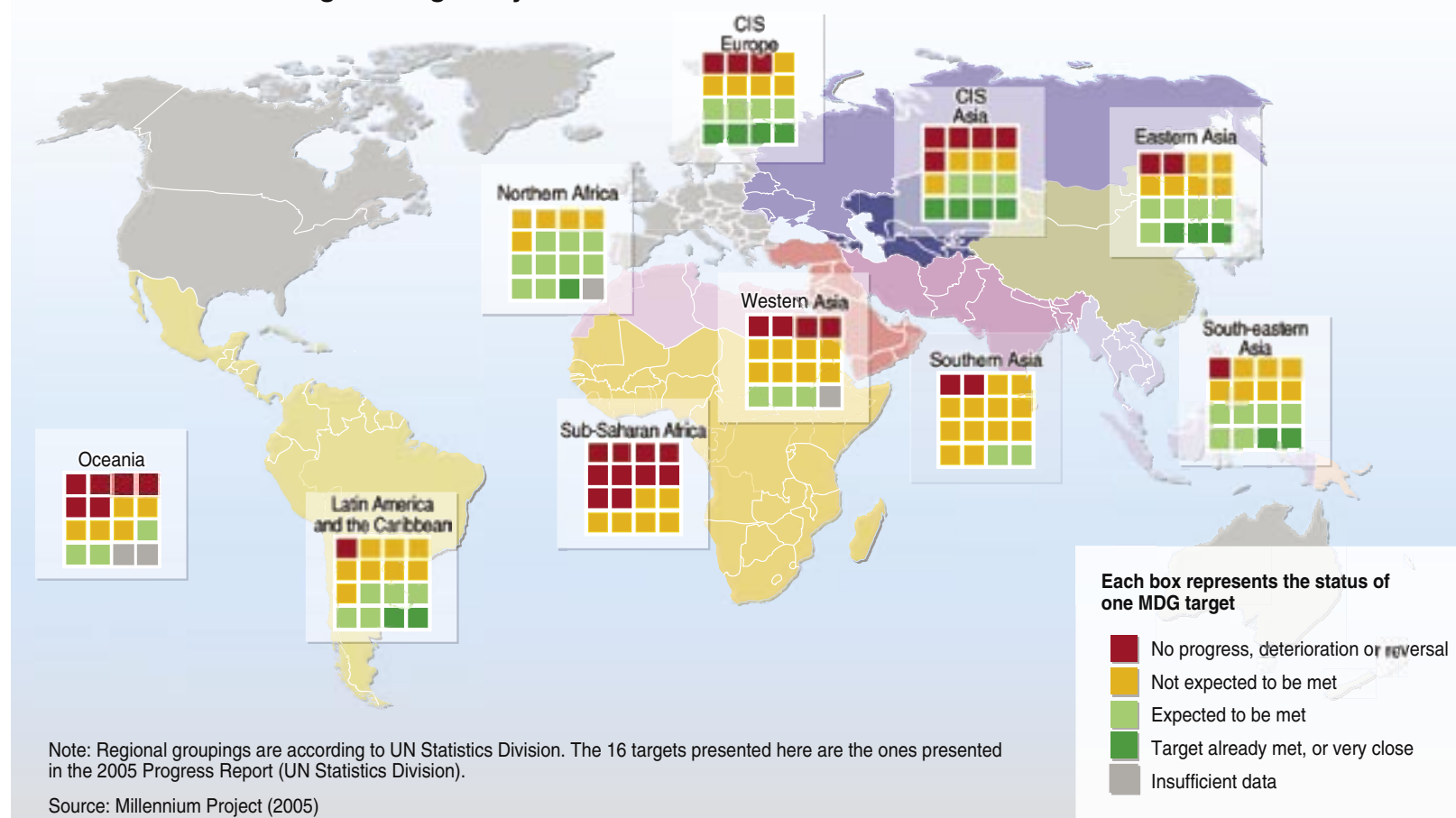
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Sustainable development, a global challenge

Ms Hilde Frøford Johnson, Norway's Minister of International Development

"Eradicating poverty is the greatest global challenge facing the world today and an indispensable requirement for sustainable development, particularly for developing countries." This quote is taken from the Plan of Implementation of the Johannesburg World Summit on Sustainable Development in 2002 and it reflects a perception of sustainable development that I wholeheartedly share. The concept of sustainable development must be understood in terms of human needs, rights and responsibility towards the environment as well as in terms of solidarity – between generations and between communities. Unless we keep this in mind too many people will persist in maintaining that we should deal with poverty and growth first and then take a look at the environment.

When Wangari Maathai was awarded the Nobel Peace Prize last year it was a timely reminder that we must take a holistic approach to environmental

management, human rights, poverty reduction and peace. This sounds simple, but in practice our thinking and actions tend to be compartmentalised, focusing on one or other of these goals. In all our efforts to implement the Millennium Development Goals (MDG) it is essential to remember that sustainable development and its three pillars – economic, social and environmental development – are implicit in all the MDGs. Achieving MDG 7 on environmental sustainability is vital to reaching the other MDGs on poverty, health and gender equality.

I firmly believe the millennium goals and the decisions taken at the Johannesburg summit have contributed effectively to focusing the world agenda on the challenges associated with all three pillars. I remember the time when it was difficult to convince world leaders and politicians to focus on poverty and environmental issues. Fortunately this is no longer the case. To mention but one example: Africa and climate change were at the top of the agenda at the Gleneagles G8 meeting.

Climate change is a reminder of the fact that poor people are most likely to be the first victims and the greatest sufferers of environmental degradation. The poor are more vulnerable than others to environmental hazards and environment-related conflicts and least able to cope with them when they occur. They also tend to be most dependent on the environment and direct use of natural resources, and are therefore most severely affected by environmental degradation and lack of access to natural resources.

The 2005 Millennium Summit in September will be a unique opportunity to reaffirm the global partnership for achieving the MDGs and the principle that every country must take the primary responsibility for its own economic and social development. But the summit will also carry out a comprehensive review of progress fulfilling the Millennium Declaration and meeting all the MDGs. Questions will be asked: How far have we come in relation to the MDGs? What challenges remain? How can we make partnerships between actors more effective?

The UN report on the status of MDG implementation answers some of these questions, noting in particular that unprecedented gains against poverty have been achieved since 1990. The number

of people living in extreme poverty has fallen by 130 million. This progress has taken place against the backdrop of overall population growth of more than 800 million people in the developing regions.

But 1.2 billion people are still living on less than a dollar a day and half the developing world lacks access to sanitation. Every week in the developing world 200,000 children under five die of disease and 10,000 women die giving birth. In addition we need to adjust ourselves to the new geography of poverty. Some regions score highly on most of the goals, whereas sub-Saharan Africa is lagging behind. In a few years' time, for the first time in history, there will be more people, in absolute figures, living in extreme poverty in Africa than in Asia.

The report of the UN Millennium Project states quite clearly that most of the world is failing to reduce the loss of biodiversity. All developing regions have experienced substantial environmental degradation over the past decade, which could very well worsen as a result of long-term, man-made global climate change. Many countries are struggling because their natural resource base – specifically the forests, fisheries, soil and water – is being progressively degraded and polluted.

In March the UN Millennium Ecosystem Assessment, Living beyond our Means, confirmed these negative trends. In particular it focused on ecosystem services and their benefits for people, concluding with a stark warning: human activity is putting such a strain on the planet's ecosystems that we can no longer take for granted their ability to sustain future generations.

We should take very seriously the report's insistence that our planet's natural assets must be seen as part of the fight against poverty. Many of the regions facing the greatest challenges achieving the MDGs must also cope with severe ecosystem degradation. The report clearly states that "development policies aimed at reducing poverty that ignore the impact of our current behaviour on the natural environment may well be doomed to failure."

The conclusion I draw from these two reports is that we need to focus more on Africa and the environment. The MDGs can and must be met. But they will not be met unless we all, donors and devel-

oping countries alike, improve on our past performance. We need to do more, and to do it better and faster.

If we are to reach the MDGs, we need to promote our global reform agenda on four fronts. First we need to reform international framework conditions. Trade and market access, investment and debt must be addressed, and we must all be willing to help establish a level playing field. Second we need donor reform, with more and better aid. The Paris Declaration on aid effectiveness, with its commitments, timetables and targets, is now the benchmark for gauging the shift from the uncoordinated donor circus of the past to the country-owned, country-led development of the future. This is why the Paris Declaration must be endorsed in the Summit Declaration, and why UN development actors must act on it. Third we need governance reform in developing countries. Development starts from the inside. Lasting development in any country requires responsible and transparent governance, including a strong and persistent focus on efforts to combat corruption. This goes for environmental policies as well. And fourth we need to mobilise the private sector and civil society. One creates jobs and promotes economic growth, the other seeks to empower the poor. Both are essential for fighting poverty.

If we lack the will to reform the way we work, the MDGs will end up being little more than wishful thinking. They will join all the other well-intentioned initiatives in the graveyard of broken promises to the poor, and our generation will have failed its most important test. We cannot let this happen.

Agreement on the MDGs and Johannesburg principles was an outstanding achievement on the part of the UN. But it will only be a true victory when the goals are reached. Only when deadlines are kept, targets are met and the poor see improvements in their own lives which do not jeopardise sustainable use of resources, only then shall we all have succeeded. Secretary-General Kofi Annan said: "All our efforts will be in vain if their results are reversed by continued degradation of the environment and depletion of our natural resources." I entirely agree with him. We must ensure that the outcome of the Summit reflects this view of sustainable development. Let us renew and strengthen our resolve and make sure we deliver the results, at the UN Summit and, most importantly, on time by 2015.

World Resources 2005 – The Wealth of the Poor: Managing Ecosystems to Fight Poverty

Ecosystems are – or can be – the wealth of the poor. For many of the 1.1 billion people living in severe poverty, nature has always been a daily lifeline – an asset for those with few other material assets. But programs to reduce poverty often fail to account for the important link between environment and the livelihoods of the poor. World Resources 2005 argues that the generative power of nature – the bounty of ecosystems – can act as a fundamental stepping stone in the economic advancement of the rural poor.



This requires, first, that the poor manage ecosystems so that they attain – or regain – stable productivity over time. But it also requires that the poor are able to reap the benefits of this good stewardship. Unfortunately, those in poverty are rarely in such a position of power over natural resources. An array of governance failures typically intervenes: lack of legal ownership and access to ecosystems, political marginalization, and exclusion from the decisions that affect how these ecosystems are managed. Without addressing these failures, there is little chance of using the economic potential of ecosystems for reducing poverty.

World Resources 2005 details the steps necessary to empower the poor to use ecosystems both wisely and for wealth. Using examples and case studies, the report traces a route to greater environmental income. Working at the cutting edge of sustainable development, it lays out the governance changes necessary to give the poor the legal, financial, and management capacity to use nature for wealth creation that does not deplete their fragile resource base.

Eleventh in the World Resources series, World Resources 2005 is a joint report of UNDP, UNEP, The World Bank and World Resources Institute. It includes 50 pages of national statistics on current environmental, social, and economic trends in more than 150 countries.

Everyone in the world depends on nature and ecosystem services for a decent, healthy and secure life. The pressures on ecosystems will increase globally in the coming decades unless we change our attitudes and actions. A crucial question is how the

loss of services derived from ecosystems will affect the achievement of the MDGs to reduce poverty, hunger, and disease. Nor should we forget the importance of the link between environmental degradation and the long-term well-being of the human

Ecosystems protection, a key to development

By **Tim Hirsch**, BBC News environment correspondent

In March Britain's Chancellor of the Exchequer Gordon Brown broke new ground in a speech to a gathering of finance and environment ministers from the G8 "club" of leading world economies.

For the first time, a politician in charge of economic policy for a major industrial nation was explicitly stating the inextricable link between environmental degradation and the long-term well-being of the human population.

Mr Brown told his audience: "If our economies are to flourish, if global poverty is to be banished and if the well-being of the world's people enhanced – not just in this generation but in succeeding generations – we must make sure we take care of the natural environment and resources on which our economic activity depends [...] Across a range of environmental issues – from soil erosion to the depletion of marine stocks, from water scarcity to air pollution – it is clear now not just that economic activity is their cause, but that these problems in themselves threaten future economic activity and growth.

And it is the poorest members of the community – those most dependent on the natural world for their survival and those with the fewest resources to buy their way out of unhealthy environments – that suffer the most."

A few days after Brown delivered his elegant manifesto for integrating environmental and development policies, a meeting was held in New York to finalise the main documents of the Millennium Ecosystem Assessment (MA). To the surprise of many of the experts gathered at the UN for the meeting, Brown – or at least his advisers – appeared to have "got" some of the key messages of the assessment before it had even been published.

Crucially, the chancellor recognised that one environmental challenge – the fight against climate change – had the potential to "overwhelm" attempts to meet the Millennium Development Goals (MDGs).

With the arrival of the five-year anniversary of the Millennium Declaration, the analysis contained in the MA could not be more timely. It identifies an alarming decline in the services provided to humans by ecosystems, which, if allowed

to continue unchecked, will threaten not just the goal of environmental sustainability but other MDG objectives such as reducing poverty, hunger and disease as well. The continued degradation of ecosystems could jeopardise even goals such as reducing gender inequality and improving access to education.

While it is important to recognise these links, care must be taken to avoid caricature or an over-simplification of the message. The MA does clearly state that social and economic policies will play the primary role in achieving the 2015 targets set out in the Millennium Declaration. However, the General Synthesis Report of the MA finds that "many of the targets (and goals) are unlikely to be achieved without significant improvement in management of ecosystems."

One of the more striking findings of the MA is that the regions of the world facing the most serious decline in the services provided by ecosystems are the very areas showing the slowest progress in achieving the MDGs. Therefore, in sub-Saharan Africa, Central and South Asia and parts of Latin America, the burden of poverty, hunger and disease coincides with acute deterioration of natural services such as the supply of fresh water, the formation of soils able to support crops and the availability of natural resources such as fish, fuelwood and medicines derived from plants.

Concern for the natural environment is often portrayed as a luxury of the rich, an issue of little consequence to the world's poor, who inevitably care more about feeding their children than about the disappearance of endangered species. Yet, as Brown recognised in the passage quoted above, it is the poor who are most vulnerable to ecosystem deterioration.

There is thus a clear link between environmental policies and the first of the MDG 2015 targets: to halve the proportion of the world's population living in poverty. Of the 1.1 billion people living on less than \$1 a day, around 70% live in rural areas where they depend heavily on subsistence agriculture, grazing and hunting; activities that require healthy ecosystems.

One problem is that conventional measures of wealth often overlook this dependence. In a study quoted by the MA, for example, it was found that 22% of household income for communities in

forested areas came from sources typically excluded from national statistics, such as harvesting wild food, fuel wood, fodder, medicinal plants and timber. So while the conversion of a forest to more "productive" uses such as agriculture may show up as a net benefit to the national economy, it can have a devastating impact on the income of poor families.

Similarly, the MDG target of reducing hunger hinges on improving ecosystem management. Crop and livestock production are recognised in the MA analysis as ecosystem services. Globally they are among the few to show improvement – though at the expense of others such as the watershed and climate functions of forests that could eventually limit our ability to feed a growing population.

And, once again, the regions suffering most acutely from ecosystem degradation are those facing the gravest hunger crises. Sub-Saharan Africa is the only region in the world to have shown an overall decline in food production, made worse by the vicious cycle of poverty and the deterioration of soils in the drylands. Development policies which fail to address this link stand little chance of long-term success.

The issue of food production also illustrates the danger of focusing narrowly on policies designed to meet a specific MDG objective while failing to recognise the negative impacts which can arise from the destruction of ecosystems. The expansion of crop and livestock production into the Brazilian Amazon and savannas, for example, may lead to a short-term increase in the total availability of food. However, this expansion may also result in future problems of soil erosion, loss of pollination services and instability of the regional climate, which could in turn cause increased long-term hunger.

The MDG objectives relating to disease, child mortality and maternal health have less obvious links with the state of ecosystems, but they are nonetheless well illustrated in the MA. One of the diseases singled out in the targets, malaria, has been closely associated with the disturbance of tropical ecosystems through deforestation; it is also linked to climate change. A rise in temperatures in Papua New Guinea, for example, is expected to spread malaria-carrying mosquitoes to highland areas where human populations have less resistance to the disease.

The health of mothers and babies also has clear links to lack of nutrition and inadequate supplies of fresh water, issues that are both strongly affected by the deterioration of ecosystems. Degraded environments which produce large areas of standing water, for example, can be breeding grounds for a range of diseases.

Even those MDG objectives which at first appear to be influenced by purely social factors can also have important links to environmental choices. An interesting observation in the MA is the impact of deforestation and unsustainable use of freshwater sources on gender equality and education. A mother who has to spend much of her day – often accompanied by her daughters – walking to collect scarce firewood or carrying water from a remote well has little time to devote to family responsibilities. These tasks can also be a major factor in keeping girls away from school.

Equally, in rural societies, it is often the women who have the primary responsibility for growing staple crops like rice, wheat and maize. Therefore, it is the women who will bear the brunt of environmental degradation that threatens this essential household activity.

Therefore, for many of the Millennium Declaration objectives, long-term success or failure may be strongly influenced by the extent to which development policies take into account the responsible management of ecosystems. A major complaint within the MA is the low priority recipient countries give to environmental factors in the preparation of the poverty reduction strategies they submit to lending institutions or bilateral donors. With recognition of these links from leading players such as the British chancellor, it will be interesting to see whether they are given a more prominent role in future overseas development programmes.

However it would be wrong to see this issue as one that affects only the developing world and the aid programmes designed to enhance the well-being of its populations. Another of the key messages of the MA is that consumption and wealth-creation in richer societies can have "negative trade-offs" in the availability of ecosystem services to the world's poor, thus jeopardising the MDGs.

One example is the massive over-exploitation of the world's marine fish stocks. This has led to anomalies such as the

negotiation of coastal fishing rights off West Africa for European super-trawlers, depriving local subsistence fishing communities of valuable sources of protein.

Perhaps the primary example, however, is climate change. As Brown observed, failure by the industrialised world to take serious steps to reduce greenhouse gas emissions may jeopardise progress towards meeting the MDGs. It is the drylands of Africa, the low-lying delta of Bangladesh and the glacier-fed mountain croplands of South America which stand to lose most from accelerated global warming.

Therefore, achieving the MDGs is not just a matter of "greening" development policies. It requires the developed world to look very closely at the impact of its own behaviour on the entire planet.

The UK presidency of the G8 this year would have been the ideal platform from which to firmly anchor these links as part of a new approach to the debate over greenhouse gas emissions. Armed with the MA analysis, supporters of radical steps to curb fossil fuel combustion could make a strong case for this being as much a part of the development agenda as increased overseas aid or fairer trade rules.

Yet in the run-up to the Gleneagles summit in July, the priorities of Africa and climate change set by the United Kingdom's Prime Minister Tony Blair were largely portrayed as separate issues. Spectacular progress made in areas such as debt cancellation, development funds and Aids treatment stood in stark contrast to the loosely-worded compromises on global warming.

In a sense, that the G8 heads of government may have felt less pressure to act decisively on climate change than on other issues on their agenda is not surprising. In the sensational channelling of worldwide public opinion through events such as the Live 8 concerts, global warming and its implications received scarcely a mention.

A major challenge remains, therefore, for those urging closer coordination between environmental and development policies. Until pop stars and their fans can be mobilised to shame politicians into radical emission cuts or protection of tropical forests, the gains from Gleneagles may yet be "overwhelmed" – to use Brown's own phrase – by degradation of the natural systems on which we all depend.

"Poverty has many dimensions, and they combine to create and sustain powerlessness, lack of voice, and a lack of freedom of choice and action."

Deepa Narayan, 2000. *Voices of the Poor*

"Poverty anywhere is a danger to prosperity everywhere"

The Philadelphia Declaration, 1944

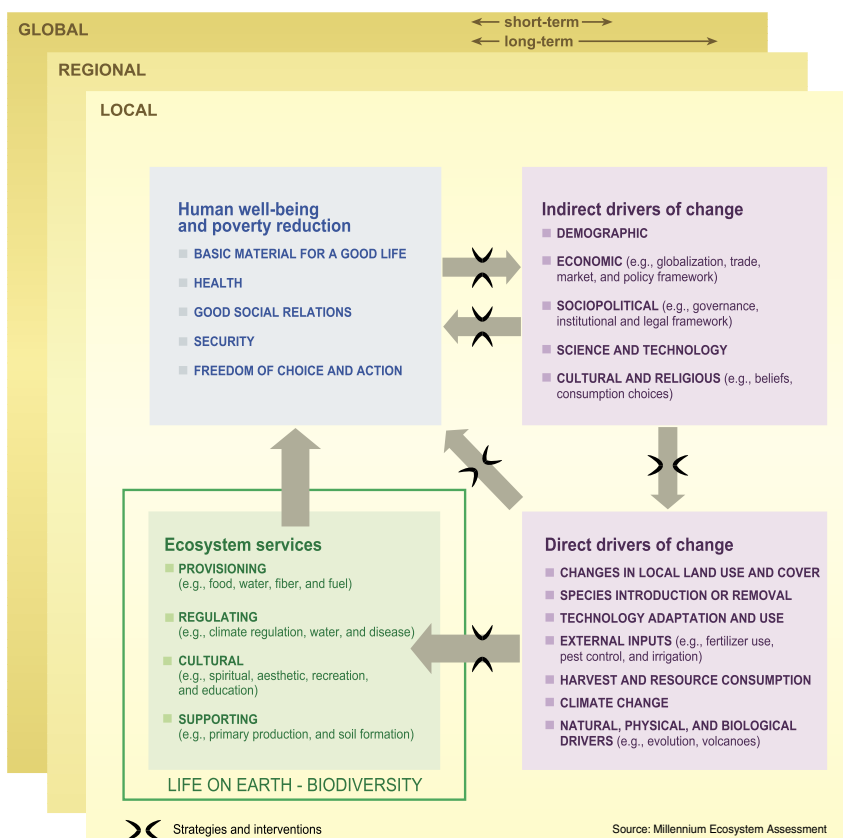
The end of poverty

By **Jeffrey Sachs**, director of The Earth Institute at Columbia University and head of the UN Millennium Project

It is still midmorning in Malawi when we arrive at a small village, Nthandire, about an hour outside of Lilongwe, the capital. We have come over dirt roads, passing women and children walking barefoot with water jugs, wood for fuel and other bundles. This midmorning temperature is sweltering. In this subsistence maize-growing region of a poor, landlocked country in southern Africa, families cling to life on an unforgiving terrain, this year has been a lot more difficult than usual because the rains have failed. The crops are withering in the fields that we pass.

If the village were filled with able-bodied men, who could have built rainwater-collecting unites on rooftops and in the fields, the situation would not be so dire. But as we arrive in the village, we see no able-bodied young men at all. In fact, older women and dozens of children greet us, but there is not a young man or woman in sight. Where, we ask, are the workers? Out in the fields? The aid worker who has led us to the village shakes his head sadly and says no. Nearly all are dead, the village has been devastated by Aids.

The presence of death in Nthandire has been overwhelming in recent years. The grandmothers whom we meet are guardians for their orphaned grandchildren.



The conceptual framework for the MA posits that people are integral parts of ecosystems and that a dynamic interaction exists between them and other parts of ecosystems, with the changing human condition driving, both directly and indirectly, changes in ecosystems and thereby causing changes in human well-being. Drivers that indirectly affect biodiversity, such as population, technology, and lifestyle, can lead to changes in drivers directly affecting biodiversity, such as the catch of fish or the application of fertilizers. These result in changes to ecosystems and the services they provide, thereby affecting human well-being. These interactions can take place at more than one scale and can cross scales. For example, an international demand for timber may lead to a regional loss of forest cover, which increases flood magnitude along a local stretch of a river. Similarly, the interactions can take place across different time scales. Different strategies and interventions can be applied at many points in this framework to enhance human well-being and conserve ecosystems.

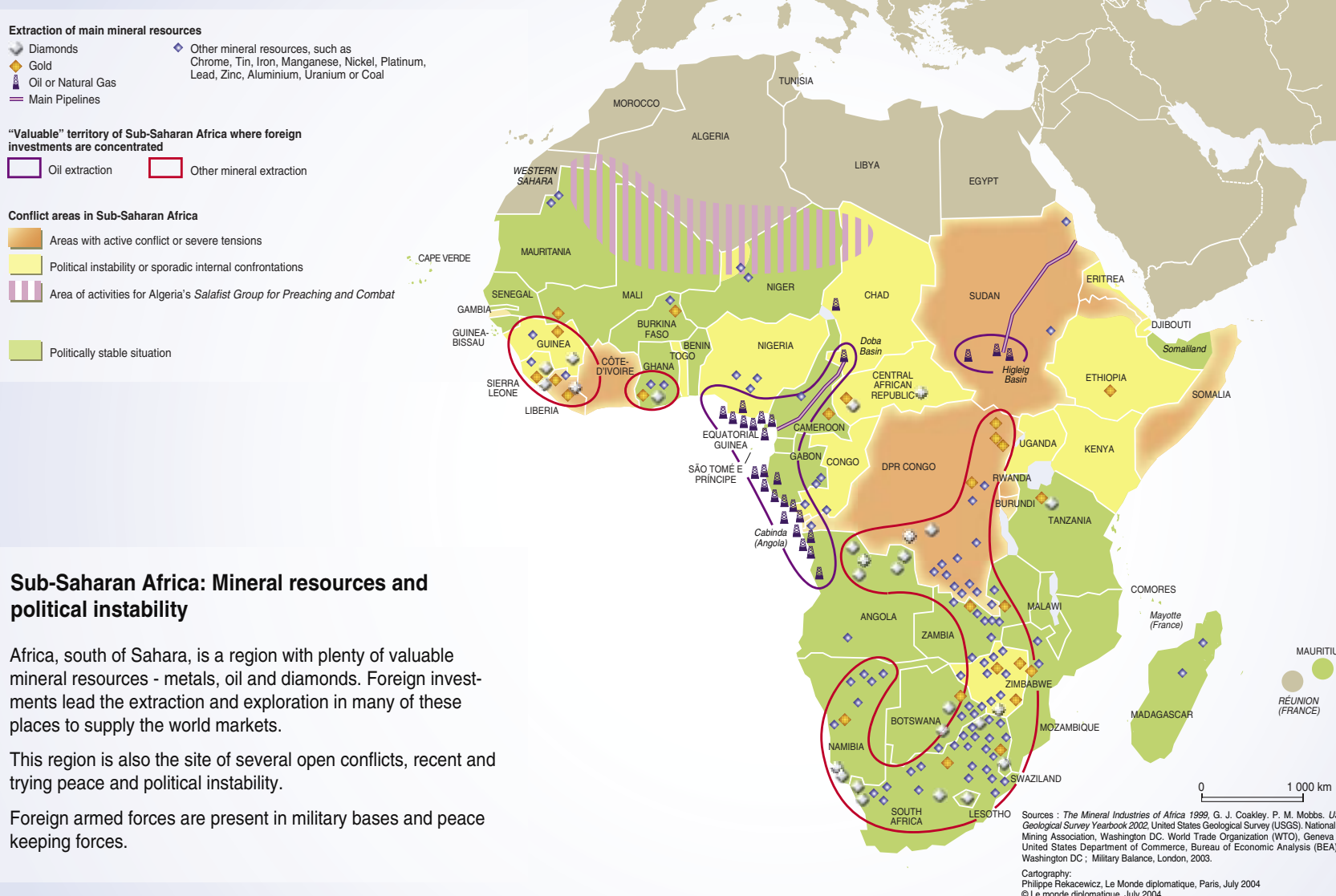
The Millennium Ecosystem Assessment (MA) is a four-year assessment designed by a partnership of UN agencies, international scientific organizations and development agencies, with private sector and civil society input, in response to Mr. Kofi Annan's call for global support of the Millennium Development Goals (MDGs). More than 1,300 scientists in 95 countries were involved.

Focus on the Millennium Development Goals

In September 2000, at the first meeting of the General Assembly of the United Nations, heads of state or government from 189 countries signed a solemn declaration setting eight goals of global importance. Under the declaration the international community agreed to work together to achieve the following goals by the year 2015:

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS, malaria and other diseases
7. Ensure environmental sustainability
8. Develop a global partnership for development

It is worth noting that, in reaching a consensus on these goals for the new millennium, the international community agreed, for the first time ever, on a "global package" that effectively summed up and reframed a number of prior agreements. In addition, the goals are clearly stated and based on concrete results that can be monitored and checked.



Why ecosystem services matter

By **Erin Bohensky**, co-editor of the *Gariiep basin component of the Southern African Millennium Ecosystem Assessment (SAfMA)*, 2004

Ecosystem services – the array of benefits provided by nature – are the lifeblood of human societies, economies and identities around the world. For many rural populations, ecosystem services form an essential part of daily activities and longstanding traditions. City dwellers may claim less direct dependence on ecosystem services, but they derive a variety of benefits from them, including “goods” such as food, water, fibre and pharmaceutical products, and “services” such as soil fertility and climate regulation that help to maintain a healthy, inhabitable environment. Ecosystems also provide cultural services through which people relate to, appreciate and enjoy nature. It is therefore in the best interest of societies as a whole to strive to maintain them. However, though their value is tremendous, ecosystem services are being seriously degraded, as recently demonstrated by the findings of the Millennium Ecosystem Assessment (MA)¹, a four-year initiative to provide decision-makers with relevant scientific information about the relationships between ecosystem change and various aspects of human well-being². If current trends continue, these services are expected to deteriorate even further and are likely to compromise the achievement of the Millennium Development Goals.

Understanding the links between ecosystem change and human well-being requires analysis not only at the global scale, but at finer scales – such as a river basin or village – where many key decisions about how to use and manage ecosystems are made. The Southern African Millennium Ecosystem Assessment (SAfMA)³ investigated these links in southern Africa. SAfMA adopted the unique multi-scale approach used in the MA, with assessments taking place at the scale of the whole region, in two large river basins and at several local community sites. Assessing ecosystem services at multiple scales provided an understanding of how different processes affect the availability of these services at each scale. For example, the availability of water in southern Africa depends on regional climate. However, in a given river basin, the availability of water may depend on factors including land use and national policy. In a village, factors such as local topography and adaptive practices may be at play. In addition, ecosystem processes do not conform to political boundaries; most southern African river basins are shared between two or more countries and wildlife migration routes frequently cross international borders. Thus, by focusing on regions and ecosystems rather than political units such as nations, provinces or districts, we obtain a richer and more comprehensive picture of the processes at work. SAfMA also employed the integrated approach used in the MA to explore the trade-offs between

different services across time and space. Clear-cutting a forest today, for example, reduces the likelihood of benefiting from services that an intact forest can provide in the future, while the diversion of water to irrigate crops upstream may limit the availability of water for users and ecosystems downstream.

In terms of human well-being, southern Africa has some of the world’s poorest conditions when measured with standard indicators. Though the reasons for this are multi-faceted, poor human well-being is often linked to the degradation of or lack of access to ecosystem services. Some services are unable to ensure human well-being because of biophysical constraints – water is relatively scarce in the arid and semi-arid zones south of the Zambezi River, for example. However, many problems are due largely to governance issues such as ineffective or inappropriate policies. The SAfMA analysis revealed that policies that were implemented to secure benefits from ecosystem services at one spatial scale sometimes had negative impacts at another. Large irrigation projects in the Gariiep basin intended to benefit South Africa’s commercial agriculture sector often displaced local communities and compromised their ability to maintain their livelihoods. This caused the displaced populations to put significant pressure on the environment in the areas to which they were relocated. Similarly, policies based on narrow sectoral object-

ives rather than on an integrated ecosystem approach often had unintended consequences. Massive dams stabilized the flow regime of the Gariiep River, but the altered river conditions allowed a pest black fly species to proliferate, negatively affecting livestock productivity and, ultimately, imposing significant costs on the very farmers the irrigation projects were meant to serve.

It appears that some of the most promising ecosystem service management solutions are integrated strategies in which synergies between the maintenance of ecological integrity and the achievement of development objectives are present. The South African government’s Working for Water Programme, with the twin goals of poverty alleviation through job creation and eradication of invasive alien plants, is a notable example. However, the assessment highlighted the difficulty of implementing such initiatives in the absence of strong governance. It works both ways: the sustainable delivery of ecosystem services to people generally requires sound governance structures, while governance may be challenged when they deteriorate, due to increasing conflict over a declining resource base and a loss of options. The ability to choose among a variety of options when using such services as a source of one’s livelihood was shown to be fundamentally important. In fact, it is choice that decreases dependence on any one service and enables a more proac-

tive, strategic approach to ecosystem management.

What does this mean for development and the Millennium Development Goals? SAfMA observed that the achievement of four of the Millennium Development Goals - reducing hunger, reducing child mortality, combating diseases and ensuring environmental sustainability - will face some serious challenges in the region if development plans do not explicitly address ecosystem services. Achieving the goals will require more than a passing mention of these services; it will demand a true appreciation of the links described above. Ecosystem services matter to everyone. The boundaries by which we live and govern our societies are invisible in terms of many of the physical, social and economic consequences of their degradation.

1. www.millenniumassessment.org
2. The MA regards human well-being as having multiple components: basic material income, health and nutrition, good social relations, environmental security and, fundamentally, freedom and choice.
3. Biggs, R., E. Bohensky, C. Fabricius, T. Lynnam, A. Misselhorn, C. Musvoto, M. Mutale, B. Reyers, R. J. Scholes, S. Shikongo, and A.S. van Jaarsveld. 2004. Nature supporting people: the Southern African Millennium Ecosystem Assessment. Council for Scientific and Industrial Research (CSIR), Pretoria. Available at www.millenniumassessment.org/en/subglobal.safma.aspx

The margin of survival is extraordinarily narrow; sometimes it closes entirely: One woman we meet in front of her mud hut has 15 orphaned grandchildren. Her small farm plot, a little more than an acre in all, would be too small to feed her family even if the rains had been plentiful. The soil nutrients have been depleted so significantly in this part of Malawi that crop yields reach only about a half-ton per acre, about one-third of normal. This year, because of the drought, she will get almost nothing: She reaches into her apron and pulls out a handful of semi-rotten, bug-infested millet, which will be the basis for the gruel she will prepare for the meal that evening. It will be the one meal the children have that day.

I ask her about the health of the children. She points to a child of about 4 and says that the girl contracted malaria the week before. The woman had carried her grandchild on her back for the six miles to the local hospital. When we got there, there was no quinine, the antimalarial medicine, available that day. With the child in high fever, the two were sent home and told to return the next day. In a small miracle, when they returned after another 6-mile trek, the quinine had come in, and the child responded to treatment and survived. It was close a call though. More than a million African children, and perhaps as many as 3 million, succumb to malaria each year.

As we proceed through the village, I stoop down to ask on one of the young girls her name and age. She looks about 7 or 8 but is actually 12, stunted form years of undernutrition. When I ask her what her dreams are for her own life, she says that she wants to be a teacher and that she is prepared to study and work hard to achieve that. I know that her chances of surviving to go on to secondary school and a teachers college are slim under the circumstances.

The plight of Malawi has been rightly described by Carrol Bellamy, head of UNICEF, as the perfect storm of human deprivation, one that brings together climatic disaster, impoverishment, the

Aids pandemic and the long-standing burdens of malaria, schistosomiasis and other diseases. In the face of this horrific maelstrom, the world community has so far displayed a fair bit of hand-wringing and even some high-minded rhetoric, but precious little action. It is no good to lecture the dying that they should have done better with their lot in life. Rather it is our task to help them onto the ladder of development, to give them at least a foothold on the bottom rung, from which they can then proceed to climb on their own.

This is a story about ending poverty in our time. It is not a forecast. I am not predicting what will happen, only explaining

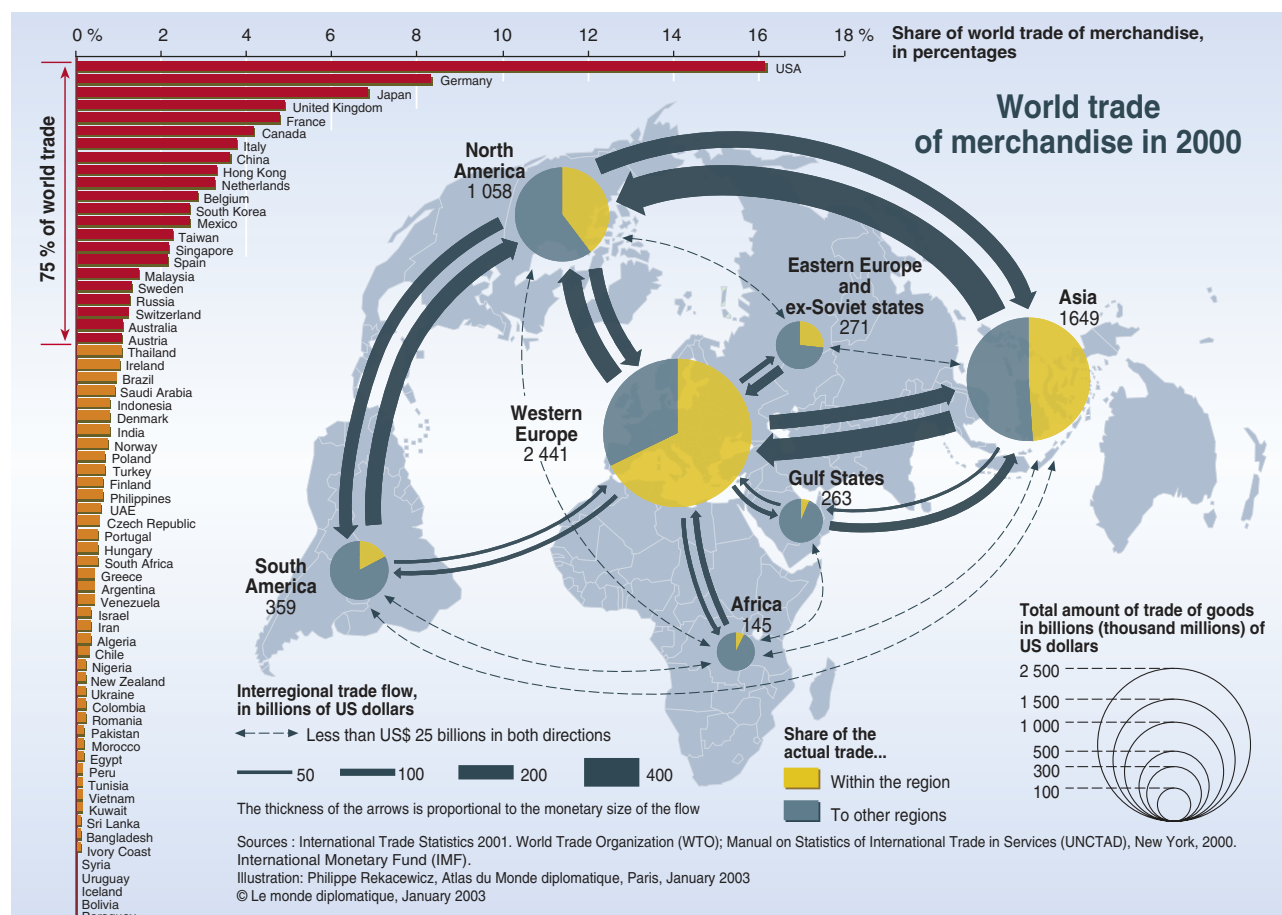
what can happen. Currently, more than 8 million people around the world die each year because they are too poor to stay alive. Every morning our newspapers could report, “more than 20,000 people perished yesterday of extreme poverty. How? The poor die in hospital wards that lack drugs, in villages that lack antimalarial bed nets, in houses that lack safe drinking water. They die namelessly without public comment. Sadly such stories get seldom written.

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Better protection of natural assets and consequently a bigger chance of achieving the MDGs will require coordinated efforts across all sections of government, businesses and international agencies. And commitments concern everyone, North and South

alike. Can trade be a tool for development? And what about aid and debt? In addition, many global environmental problems – climate change, loss of biodiversity, depletion of global fisheries – can be solved only through partnerships between rich and poor

The future of the international trading system



By **Alexandra Strickner and Sophia Murphy**, Institute for Agriculture and Trade Policy – Geneva Office

The Millennium Development Goals establish a global partnership to improve the lives of the world's poor. This includes an open, rule-based, predictable, non-discriminatory trading and financial system as an essential goal. Can trade be a tool for development? In many cases current trade rules do not contribute to sustainable development. In agriculture, most relevant to developing countries, trade is heavily distorted by artificially cheap world prices. Developing countries have few tools to protect themselves from these distortions. Furthermore the current system of trade rules is far from being a predictable, consistent system. Among the main sources of inconsistency are the many bilateral and regional agreements setting different trade rules

for different countries. The number of these agreements has dramatically increased since the start of the World Trade Organisation. The major trading partners of the developed world – the United States and the European Union among others - negotiate bilateral trade agreements almost every week, while at the same time pretending to negotiate pro-development multilateral trade rules at the WTO as part of the Doha Development Round. Even for the current round of negotiations at the WTO – in particular in agriculture – but also other areas of negotiations such as services and industrial products - the proposed rules are mainly designed to further open markets, despite the damage this approach has wrought over the last 10 years. What is necessary is more detailed analysis and debate on which rules are needed to improve the lives of people in poor countries.

Global trade in agricultural produce is a mess. The mix of national policies and multilateral rules has contributed to plunging commodity prices. Farmers around the world – particularly family farmers - have been forced off their land because they can no longer make a living. Trade policy refugees from rural areas flood cities without enough jobs or housing. Every international institution, from the UN and its agencies to the WTO itself, blames the agricultural trade practices of rich countries for devastating rural communities in developing countries. Yet the same policies have damaged rural communities in developed countries too. Food security – people's ability to feed themselves and their families with adequate and culturally appropriate food – has suffered everywhere.

The WTO is the focus of international efforts to solve this problem. No one thinks it can be the only solution, but efforts to reform agriculture in developed countries are firmly rooted there. The debate at the WTO has centred on three aspects of agricultural policy: domestic support, tariffs and export subsidies. Experts declare all three to be damaging to global agriculture and trade rules place restrictions them. But current WTO talks to tighten the rules are in deadlock. The proposals now on the table reflect the domestic politics of WTO members, especially developed countries, and the export interests of multinational agrifood firms which trade in commodities and processed food. WTO negotiators have ignored the economic and social needs of developing countries and poor people. Even if governments at the WTO were miraculously to eliminate all the trade-distorting elements of agricultural policy, world markets would not magically start to improve the welfare of developing countries. WTO efforts fail to target the biggest factor distorting markets, namely dumping, the export of products at prices below their production cost. Worse, the present WTO agricultural agreement, and proposed changes, fail to incorporate binding commitments to comply with fundamental goals such as upholding the human right to food and establishing a resilient rural sector as a basis for economic development. The WTO

Agreement on Agriculture has failed rural communities around the world. It also has enhanced environmental degradation by promoting a more industrialised model of agriculture characterised by monoculture, intensive use of herbicides and pesticides, large units for breeding livestock, and heavy dependence on oil needed to ship and transport goods. The successor of the current Agreement on Agriculture, now under negotiation, is set to perpetuate this failure.

A serious attempt to achieve the MDGs would require a change in the overall direction of policies on agriculture, food and trade. International trade rules must be based on an understanding of the root causes and problems in agriculture and trade. International trade rules must include a ban on dumping and new criteria for subsidies, curtailing all subsidies supporting excess production for export. Inventory management needs to be introduced for key crops that are deliberately traded with the sole aim of increasing the price of commodities. Rules are also required to regulate market concentration and establish the right of countries to protect their agriculture from dumped imports or import surges that would harm their own agricultural production.

To achieve this the negotiation process must become more democratic, it being almost impossible to reach a good agreement through bad process. WTO negotiations go on allowing only a handful of countries to reach an agreement, leaving the full governing body only a short time to consent to a done deal. The Doha Round is typical of this approach.

For the sake of millions of people we cannot allow another bad agreement. It is high time for an objective assessment of whether WTO rules have benefited people, or merely boosted cross-border trade statistics. It is time to frame policies that discipline all sources of market distortion and to measure success against the imperative of meeting internationally agreed development benchmarks. Only such an agreement will help achieve the MDGs and reduce poverty.

Facts and figures

- Africa loses \$US 2 billion a year due to subsidies and protectionism in rich countries.
- The Africa Region's share in world exports dropped from 4.6% in 1980 to 1.8% in 2000.
- In 22 of the world's poorest countries – almost all of which are in Africa – trade accounts for more than half of national income, a larger share than in rich countries.
- The EU is sub-Saharan Africa's single largest trading partner, receiving about 31% of Africa's exports and supplying 40% of its imports

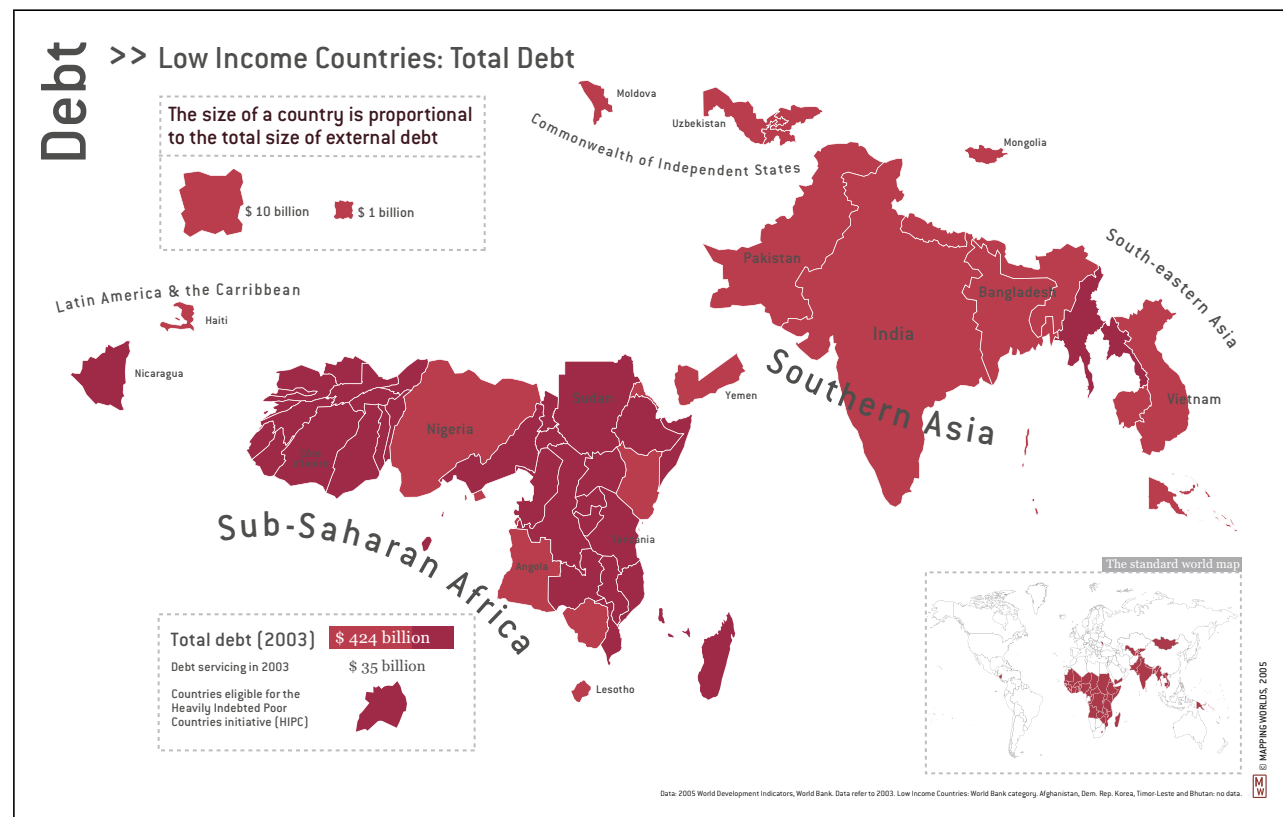
Source: ActionAid International on trade justice



Africa – Up in smoke? The second report from the Working Group on Climate Change and Development

The world's wealthiest countries have emitted more than their fair share of greenhouse gases. Resultant floods, droughts and other climate change impacts continue to fall disproportionately on the world's poorest people and countries, many of which are in Africa.

This Report finds that concerns about the effects of climate change on rural African societies are more than justified. Climate change is happening, and it is affecting livelihoods that depend on the natural environment, which, in Africa, means nearly everyone. However, even without adequate support, far from being passive victims, people recognise even small changes in climate, and are taking steps to respond to them.



This map displays a quite diverse situation in the world, with countries like Pakistan, Nicaragua and Côte d'Ivoire having substantial debt in comparison to their neighbouring countries. India and Nigeria have a quite large debt, but these are also very populated countries with advancing economies. The map was developed by Mapping Worlds, as part of a series on the Millennium Development Goals. Interactive versions are presented in a Dutch web project. Check the Mapping Worlds website for maps on the other goals and for the new World Population Series: <http://www.mappingworlds.nl>

Goal 8: Develop a global partnership for development • Develop further an open trading and financial system that is rule-based, predictable and non-discriminatory. Includes a commitment to good governance, development and poverty reduction – nationally and internationally • Address the least developed countries' special needs. This includes tariff- and quota-free access for their exports; enhanced debt relief for heavily indebted poor countries; cancellation of official bilateral debt; and more generous official development assistance for countries committed to poverty reduction • Address the

“The world as a whole spends \$4.7bn on Aids each year – the US spends almost twice this (\$8bn) annually on cosmetics. Europe spends more than twice this (\$11bn) on ice cream.”

People and Planet, 2004

“Primary responsibility for unsustainable patterns of production and consumption, such as the over-harvesting of global fisheries and production of green house gases, must lie with the countries that cause the problems. Those are the high-income and some of the rapidly growing middle-income countries.”

UN Millennium Project

Climate change – why should we care?

By **Churchill Otieno**, journalist of the East-African

Paul Desanker is Professor of Geography at Pennsylvania State University and a lead author of the Intergovernmental Panel of Climate Change (IPCC) Third Assessment Report (African section).

Scientists say the climate is changing and human behaviour is responsible. In particular increased industrial activity is releasing harmful gases into the atmosphere. They say the implications for food, disease and life in general are enormous. Churchill Otieno discussed some of the issues with Professor Paul Desanker, a leading researcher on climate change.

Q: What is climate change and why should the world care?

A: When we talk of climate change we are really talking of changes brought about over the industrial period – the last 60 to 100 years – during which time we have seen increased use of energy sources that emit harmful gases into the atmosphere, which have a warming effect and hence shifting climate patterns.

Most serious, especially for Africa, is the shift in the rain patterns over the year. Traditionally we are used to a certain pattern of life; long rains, short rains, dry season and so on, so all we do like planting is synchronised to the seasons. The fact that climate change has resulted in this shift means we end up with crop failure – rainy seasons no longer coincide with crop planting, areas that never had drought begin to experience it or we suddenly have lots of rain like the el Niño.

Q: But the science community seems divided as to whether climate change is happening at all.

A: By now the majority view is that climate change is happening, it is for real. Only very few would be doubtful. The only thing we are unsure about is by how much and where will the change happen. Some areas of the world will get warmer, others cooler. Phenomena like el Niño will get more severe.

Q: What does this mean for Africa?

A: Africa is trying to develop and most of this development is linked to rain fed agriculture

as opposed to irrigation. Most of the rural communities rely on rainfall patterns for their crops. Whole economies are driven by agriculture. This also has implications for health since most diseases are associated with poor or contaminated water; parasites thrive when it floods resulting in more cholera and malaria. Mosquitoes do not survive below a certain temperature but with the warming effect they are able to survive in some highlands.

Low lying coastal areas, where most cities in the world are, are particularly vulnerable to flooding and other ramifications during major storms. But while these are things no one can do anything about, most developed countries have much better coping mechanisms in terms of early warning systems and the ability to recover after the havoc. Africa has none of this.

Studies have shown, for instance, that the glaciers atop Mount Kilimanjaro and Mount Kenya have greatly reduced. Some even see them melting out as soon as another 20 years. Yet it is well known these glaciers are the source of streams and rivers and are also important for rain.

Q: What ammunition has Africa to respond?

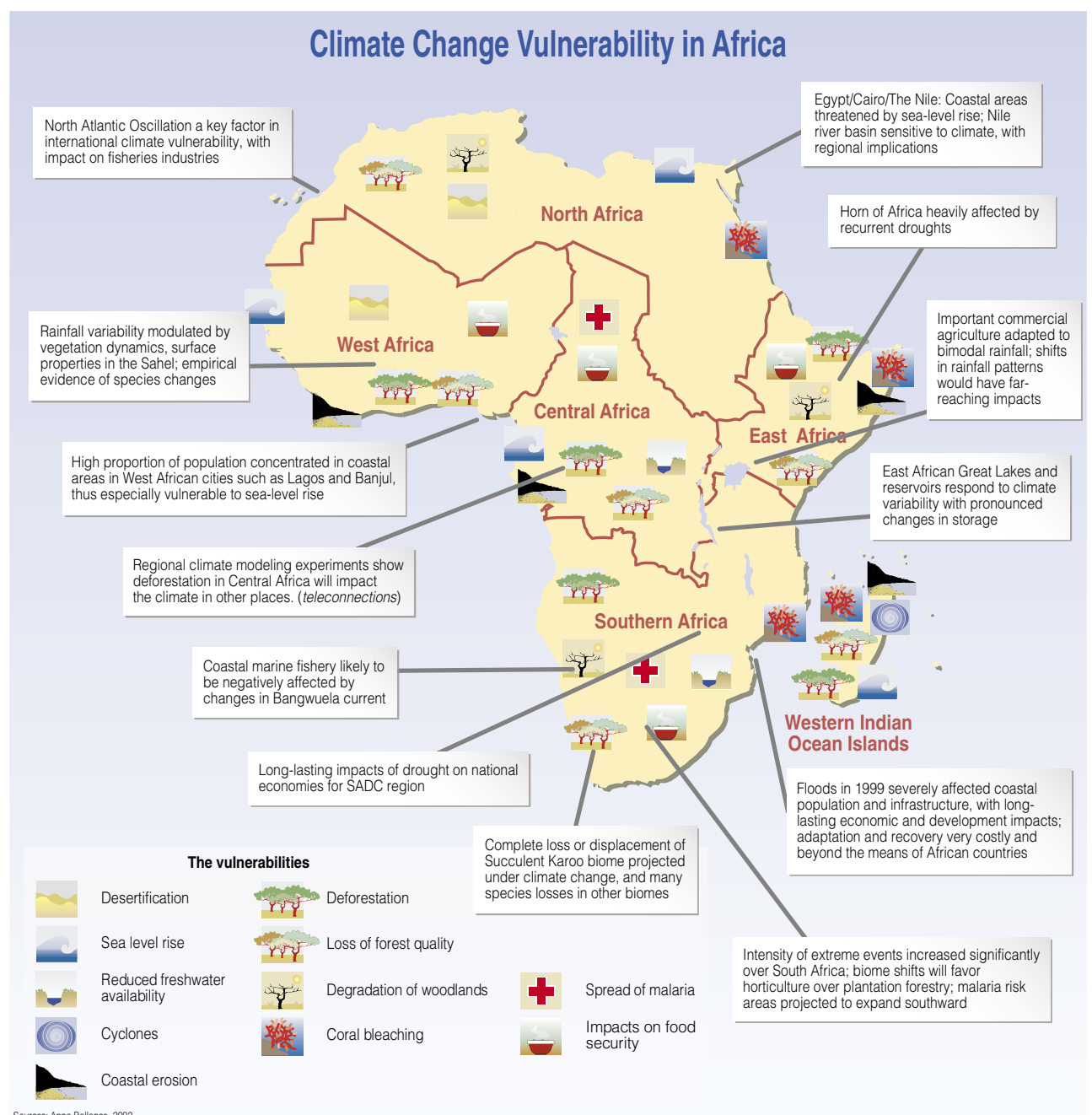
A: There is very little Africa can do to change events.

Q: But do we have to cope with climate change?

A: Not the whole lot. There is some local knowledge, like the rural communities eke a living in very hard conditions, but these conditions are changing, for instance the nomads like the Maasai in days gone by would move away from harsh weather but this is not possible anymore because land use has changed.

What is needed is much greater awareness of what the issues around climate change are. You cannot respond to what you do not know. Also, no one country can go it alone. Technology has also improved to help us cope; fairly accurate seasonal forecasts to help farmers plan better – but its not an exact science.

Africa's contribution to emissions of harmful gases is minimal, less than 10%. Even if we were able to reduce this to zero we would



still be in danger because much of the emissions come from the industrialised world, like the United States. But if Africa were to industrialise we would be in deeper problems because this unfortunately comes with more harm to the environment.

The US is leading in pumping these harmful gases into the atmosphere, yet it has refused to ratify the Kyoto protocol to help stabilise these gases.

Q: Are they holding the world to ransom?

A: They are not holding up the Kyoto Protocol anymore because with Russia having ratified, it came into force in February, this year. Since the US emits the largest amount of harmful gases it makes little sense for everybody to act and not them. The protocol demands that developed countries reduce their emissions by 5%, which is obviously minimal, but all are agreed it would be an important first step.

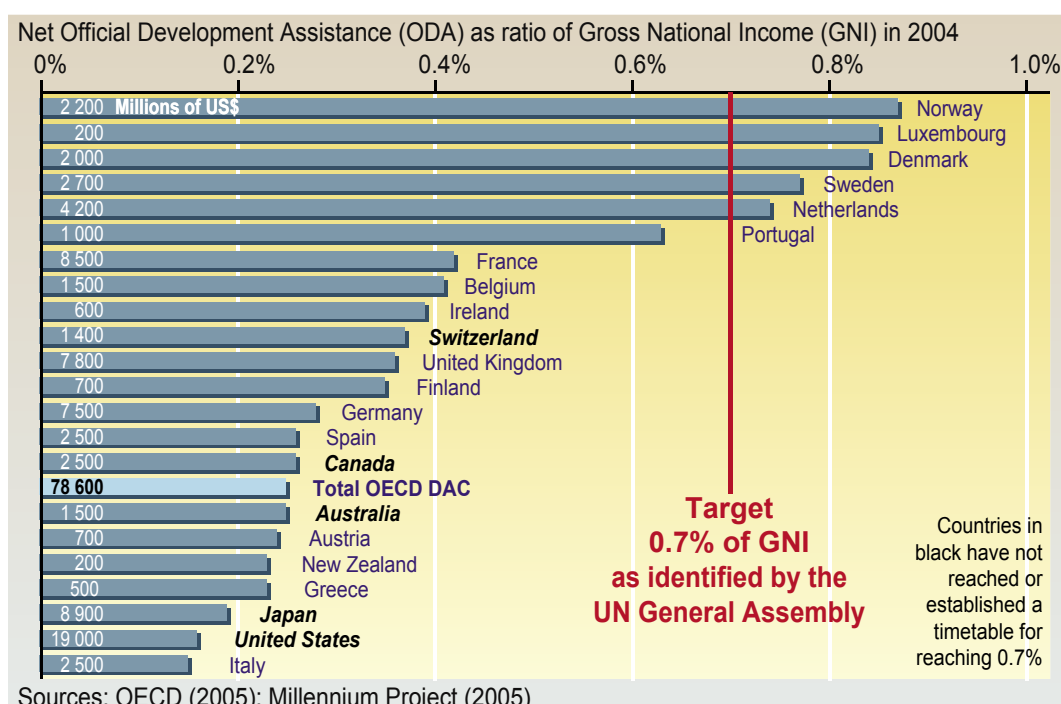
All the same, a lot depends on what the US does. American officials have argued that there are more effective ways of reducing emissions, for instance the use of less fossil fuels. This involves developing technology for cleaner fuels, which is possible given the speed with which technology advances, but also unlikely.

In the final analysis, every country has a right to take whatever position so we really cannot force the US, but the world should encourage them.

“World Bank research has shown that agricultural subsidies in rich countries of about \$300-350 billion a year suppress world prices, undermining developing country exports. This is more than the total economic output for all of Africa. The subsidies are roughly six times total development aid.”



Goal 8



International aid

Increased aid is not the solution to global inequality. Aid alone will not eradicate poverty. Nevertheless significant increases in Official Development Assistance (ODA) are essential to the process of achieving international development targets.

In the 1970s the OECD agreed to a minimum ODA target for donor countries of 0.7% of gross national product. But few actually honoured their commitment. Furthermore, over the last 30 years, aid as a percentage of GDP has decreased for the 22 members of the rich world's "donor club", or Development Assistance Committee, dropping from 0.31% in 1970 to 0.24% in 2002. Only five countries – Denmark, Luxembourg, the Netherlands, Norway, and Sweden – achieved the target in 2002.

With most donor countries falling short of their promises, there have been repeated calls for a renewed effort. The big question since the Monterrey Consensus in 2002 has been whether the rich world will finally meet its long-standing 0.7% target and enable the poorest countries to break out of the poverty trap, thereby achieving the Millennium Development Goals. Until recently, only seven countries had published a timetable for reaching 0.7% of GNP by the year 2015: Belgium, Finland, France, Germany, Ireland, Spain and the United Kingdom. If we add these countries to the five with longstanding success honouring their commitments, their number amounts to 12 – just over half the 22 DAC donor countries. A step in the right direction. If all 22 donors increased their official development assistance to 0.7% of GDP, the value of funds would triple to reach \$165bn (UNDP 2003).

special needs of landlocked and small island developing States • Deal comprehensively with developing countries' debt problems through national and international measures to make debt sustainable in the long term • In cooperation with the developing countries, develop decent and productive work for youth • In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries • In cooperation with the private sector, make available the benefits of new technologies—especially information and communications technologies.

In the course of human history urban development has accelerated worldwide. Between 1975 and 2000 the planet's urban population increased from 1.5 billion people to more than 2.8 billion, or about 45% of the total population. By 2020 it is estimated that the figure will have risen to 60%. But not all urban dwellers benefit

from city life. In 2001 some 924 million people, or roughly 31.6% of all city dwellers lived in slums. Over the next 30 years as many as 2 billion people will be living in slums, challenging the target of achieving significant improvement in the lives of at least 100 million slum dwellers.

Cities in the Andes: threats and hopes

By **Elsa Galarza and Rosario Gómez**, Centro de Investigación, Universidad del Pacífico

The Andes region of South America encompasses Bolivia, Colombia, Ecuador, Peru and Venezuela. Among the region's unique features are its varied climate and its considerable environmental and biological diversity.

The region is facing unprecedented urban growth. In 2003 the total population was reported as 119 million inhabitants, with 1.8% annual population growth for 1994-2003. Colombia, the most densely populated country in the region, accounted for 37% of the total population.

With the population doubling between 1970 and 2001, the number of city dwellers increased nearly threefold over the same period, growing from 32 million to 85 million inhabitants (1). In 2003 the urban population accounted for 76% of the total regional population, up from 71.6% in 1994 (2). The United Nations Development Programme (UNDP) estimates that city dwellers will account for 79% of the total population by 2015.

There are two types of urban development. "Decentralised" urban development is characterised by the presence of several large cities in a given country that offer a variety of services (healthcare and education, for instance) and opportunities for employment. Services and the availability of jobs are the main incentives for individuals to migrate to urban areas. This type of development is encountered in Colombia, with several large cities such as Medellín, Cali, Cartagena and Barranquilla, as well as the capital Bogotá.

"Centralised" urban development characterises countries that have only one major urban area, such as in Peru, where 29% of the country's population is concentrated in Lima. This type of development places increased demands on public services, housing and infrastructures and generates increased pressure on the environment (a lack of or inadequate sewage treatment reduces water quality; increased solid waste without the appropriate disposal systems affects soil and air quality).

The rural poor who migrate to urban areas often live in shanty towns, generally built on vacant land from light construction materials such as wood. The underlying ground (sandy hills, for instance) is often unstable and structures are often built with no technical guidance. The resulting situation generates additional pressure on the environment.

As in other developing areas, poverty is a crucial issue. Venezuela has the highest proportion of people too poor to afford even food (23%), followed by Ecuador and Colombia (20% each). This type of extreme poverty is also a source of environmental pressure.

A sustainable urban area is one that can provide its population with a stable, profitable economy, social cohesion and a healthy environment. However according to this definition, sustainability is difficult to achieve, due to factors such as population size and growth rates, income level, the spatial dimension of environmental issues and the role of local stakeholders. Cities in the Andes region face a number of environmental issues.

But three are particularly important: water availability and quality, air pollution and solid waste disposal.

One third of the world's renewable water resources are located in Latin America and the Caribbean. Ideally they should meet the needs of 90% of the total population in the area. Nevertheless, 38 million urban dwellers do not have access to adequate drinking water supplies. Recently cities in the region have improved access to water. On average 88% of the population of the Andes region has access to this resource, and 79% has access to drainage systems. However, access to water is critical in the shanty towns on the fringes of these urban areas, which are largely inhabited by the poor. In such areas, the scarcity of water has an enormous impact on children, exposing them to many diseases such as diarrhoea, parasitic fever or hepatitis. The Andes region has high rates of child mortality, with extreme levels reported for Bolivia and Ecuador, where 20% of children under the age of five die from gastro-intestinal illnesses.

Water quality is also a major issue. Between 70% and 80% of waste water is channelled back into the water system without any treatment. Despite decreasing availability and quality, little effort has been made to provide adequate water treatment. Waste water treatment rates are only 30% in Bolivia, 11% in Colombia, 5% in Ecuador, 14% in Peru and 10% in Venezuela.

Air quality is also very poor in many countries in the region, exceeding World Health Organization thresholds for pollutants dangerous to human health. The continuing deterioration of air quality has resulted in increases in respiratory illness, allergies and other ailments. This has led to increased spending on healthcare and a drop in the productivity of workers.

There are two types of air pollution: point-source (industry) and mobile-source (motor vehicles). The major problem affecting the region in terms of air pollution is transport systems that allow the use of outdated, low-capacity vehicles. Maintenance is at best inadequate, all too often non-existent, and fuel quality is poor. Some countries have nevertheless tried to remedy this situation. For example the city of Bogotá has launched Transmilenio, a massive public bus transportation system, with articulated buses each carrying 160 passengers. It has also implemented a number of other policies including the conversion of cars from traditional fuels to natural gas, motor vehicle certification and cycling programmes.

Two additional problems faced by cities in the Andes region are the generation and disposal of solid waste. In the last 30 years the amount of solid waste generated by Latin American cities has doubled. Furthermore the composition of the waste produced has changed, with a decrease in organic matter and an increase in non-biodegradable materials which may also contain toxic substances.

The coverage provided by solid waste collection services is low, with inadequate equipment and fees that do not reflect the true value of the service. In Ecuador 53% of the population has access to waste collection services; in Peru the figure is 60%. Often when collection services are not available in some areas of the cities,

solid waste is dumped on riverbanks or burned. At other times, the final disposal sites are the very places where poor people live. Local people sort and sell paper, glass, plastic and other waste materials to scratch a living in an underground economy that represents the only chance for survival for some families.

In the Andes region, sustainable urban development is a major challenge. The key environmental issues affecting the region are complex and go far beyond the environment itself. Despite these difficult conditions, some creative initiatives have emerged that promote the integrated management of all the various components of an environmentally-sustainable urban area. The idea is to ensure that policy decisions generate synergies across a range of sectors. For example the City of Lima has developed an anti-drug programme for street children aged 12 to 17 convicted of petty theft. The goal of the

programme is to increase the children's self-esteem and thus prevent future drug abuse and crime.

One group of 120 children received landscaping training. They were put in charge of maintaining the parks and landscaped areas they had previously used to hide from the police or to use drugs. They received a salary and a uniform. Most of the children who participated in the programme stopped stealing, remained drug-free, and gained a sense of pride in the work they had accomplished while contributing to improving the urban environment.

Building urban areas that can sustain long-term growth demands an efficient institutional framework, comprehensive regulation and enforcement, and active participation by local stakeholders. The number of cities in the region that manage participatory budgets has increased. Local stakeholders play an active role in decision-

making, setting priorities and allocating financial resources, in the fight to solve the issues plaguing the region's cities.

In the Andes region, an average of 18% of the urban population is living in extreme poverty. These people are the region's most vulnerable; they are more likely to live in high-risk areas and contract environment-related diseases, with greater exposure to natural disasters such as floods. In this sense, poverty, the environment and economic growth are closely interrelated. The key to solving these problems is to set up incentives to promote the kind of programme development and investment that will generate long-term economic, social and environmental benefits.

1. Andes Community General Secretariat, Sub-regional Statistical Information System, Decision 115.
2. Based on Andes Community population data at www.comunidadandina.org





Malindi leads the way with community activism

By Cecilia Kinuthia-Njenga, Human Settlements Officer, UN-Habitat

Just mention the expression “shanty town” and the first thing that springs to mind is filth. While this may be true of slums around the globe, it is not the case in Kisumu Ndogo and Maweni in Malindi, Kenya. These two shanty towns, much as Malindi itself, are free from the litter and solid waste plaguing most unplanned settlements and towns in Kenya today.

Malindi is a popular tourist destination 125 kilometres north of Mombasa on the Indian Ocean. Over the years the urban environment deteriorated so much that residents became alarmed, prompting them to form the Malindi Green Town Movement (MGTM) to introduce sustainable, integrated urban environmental planning and management.

The project targeted an area of 670 sq km with a population of 140,000. One third of the area is part of the Indian Ocean coastal ecosystem. The intended beneficiaries of the project were the poor of Malindi - mainly women and young people. Community ownership of the project was a key success factor. Today a visitor walking through Kisumu Ndogo and Maweni will see garbage bags outside every door. Members of the community collect and bag garbage from their homes and the surrounding area. The bags are then collected by youth groups and stored at a temporary site in the community. The municipal council takes the garbage to designated dumps. The project has provided community members with income and boosted the capacity of the Malindi town council to involve key stakeholders.

Prior to this initiative the community had had no experience with solid waste management. Residents dumped their waste directly into the ocean, gradually turning Shella Beach, the oldest part of Malindi and the most attractive part of the bay, into a health hazard and an eyesore. Because it is located in a basin, with sand dunes on the beach side and hills to the west, south and north, the town flooded whenever it rained. To make matters worse, there was no conventional drainage or sewer system. Most residents depended on water from wells, some of which were dangerously close to pit latrines. Household wastewater

often overflowed into the streets and the ocean. The constant flooding left the barren, dusty streets riddled with potholes. Litter such as plastic bags and coconut shells was scattered throughout the town, where cattle could also be seen grazing. There was a filthy produce market with makeshift stalls and even a dumpsite right in the middle of a housing estate.

Virtually no town planning had ever been carried out. The lack of a proper zoning plan led to the spread of slums. There were no playgrounds, public gardens or other amenities. Disease, especially malaria, was a particular threat to infants from low-income homes. The town council lacked the adequate resources and by-laws for effective planning, waste management and environmental protection, undermining its credibility. Moreover the community did not have the necessary negotiating and lobbying skills to compel the council to provide services. Ideally environmental conservation in Kenya is managed by the federal government in partnership with municipal councils and citizens. However citizens bear the brunt of mismanagement and lack of effective policies.

One of the reasons behind the problems plaguing Malindi and many other Kenyan towns is the absence of a sound legal framework for environmental issues. Often, there is little the community can do against individuals or institutions that contribute to the environmental degradation of public spaces.

Outraged by the situation, a group of residents formed the Malindi Green Town Movement (MGTM) in 1994. According to MGTM Chairman Godfrey Karume, “We were appalled by the plastic paper [sic] menace, garbage dumping along the beach and in residential areas, dirty streets, poverty in the communities and the allocation of public spaces to private developers.”

Garbage collection, a service lacking in many towns in Kenya, is now provided by local youths, most of whom were previously unemployed. Statistics from MGTM show that the youths collect an average of 50 tonnes of solid waste every week. They generate income by charging between 100 and 150 shillings (\$1.30 to \$2) a month, serving a population of 80,000. Maweni resident Esther Katunda states, “Since we discovered that

garbage could be turned into income, we have not turned our backs on it; we collect it and transform it into a livelihood.”

Working with the council, the community has defined a set of environmental by-laws, which are in the process of being passed for use in Malindi. MGTM and the town council signed a memorandum of understanding setting forth the rights, responsibilities and obligations of each party regarding solid waste management. Women’s and youth groups, and other community-based organisations have obtained vehicles from the council and repaired them for refuse collection.

Village committees were set up to organise the new fee-based waste collection system, with 19 solid-waste storage points built at central locations. Youth groups now compost biodegradable material and operate a garden producing food and seedlings and selling surplus compost to local farmers. The movement has developed a two-wheeled bike to collect waste and is involved in activities such as cutting grass and clearing brush around homes, sealing open manholes, spraying insecticide to kill mosquitoes, and chlorinating public wells to improve water quality. The crows that once blighted the town have been trapped and their eggs destroyed. The Watamu dump, in the middle of a residential estate, has been relocated and the site rehabilitated and turned into a park.

Plastic bags – an environmental threat all over Kenya – are conspicuously absent in Malindi, thanks to the zeal of women’s and youth groups in Kisumu Ndogo and Maweni. They collect the bags as raw materials for a cottage industry producing baskets, hats, table mats, floor mats and other products. Local schools have been recruited to help, with the one that collects the most winning a trophy for environmental protection. Women’s groups involved in the cottage industry pay a shilling per kilo of plastic. They will soon be selling plastic to a firm that manufactures containers and other items.

Malindi has been transformed. The town has regained its former beauty and is once more attractive to tourists. Due to the high level of awareness and increased public involvement in environmental issues, residents are determined to maintain the improved conditions. Shella Beach is now home to beach-football pitches, boat-building yards, public gardens, and sunbathers.



The communities have been empowered to work together through the village committees to solve environmental problems. For example, the government was recently forced to stop a hotel developer when Malindi residents voiced their concerns over the potential dumping of untreated wastewater directly into the ocean. Similarly the community blew the whistle on a foreigner who was illegally exporting live coral to Europe for use in aquariums. The project has boosted the level of community activism and residents now regularly speak out at town meetings.

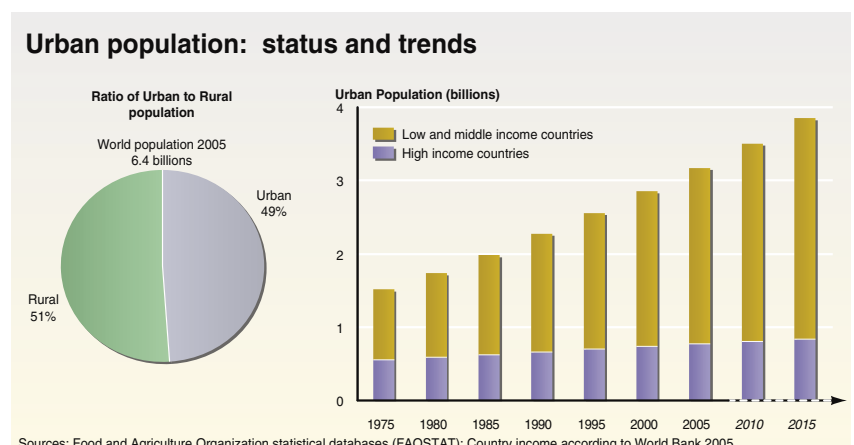
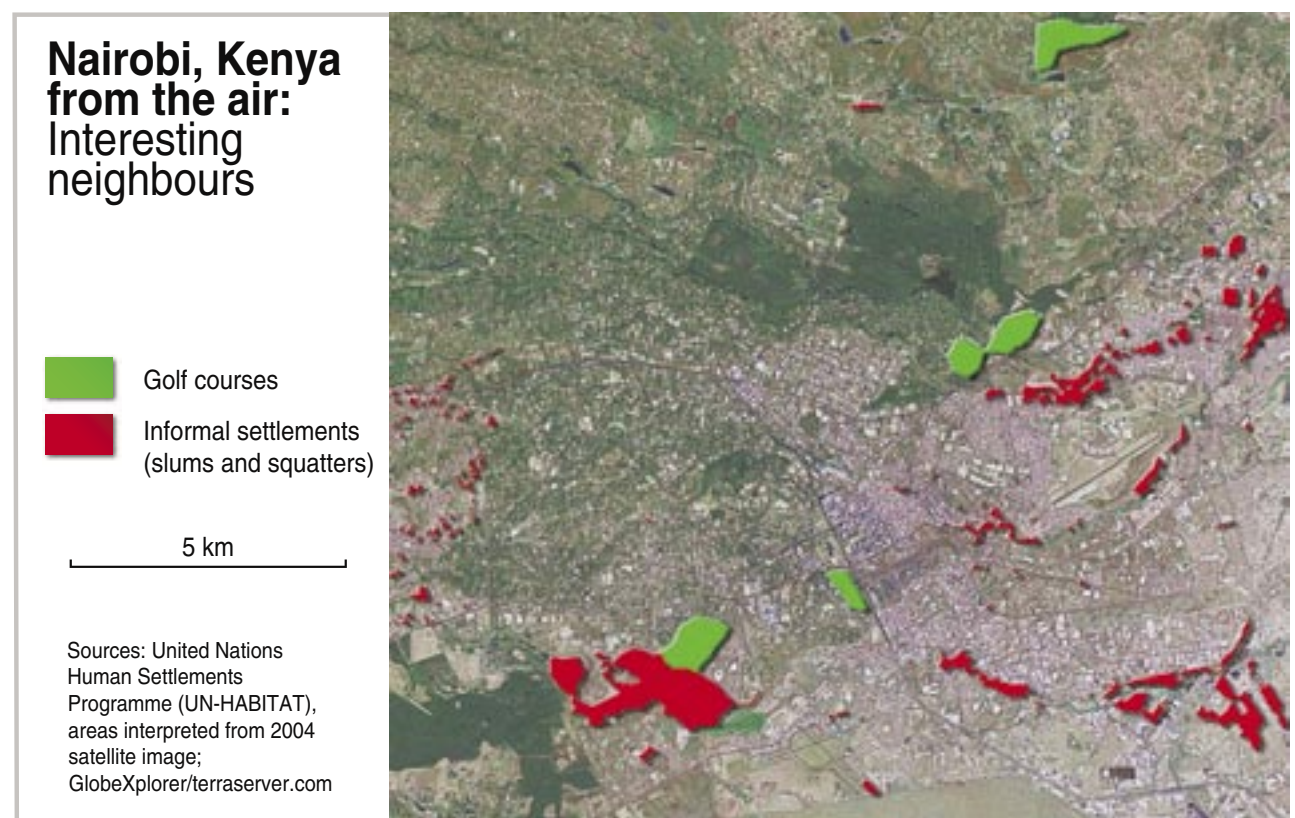
The structures created through this project have given community members a forum where they may express their ideas and find solutions. Citizens have taken responsibility for local problems and a number of locally-funded initiatives have been implemented with the support of readily-available human resources in the community.

At a time when cities and towns all over Kenya are grappling with mismanagement, poor service delivery and environmental degradation, Malindi has invested in a grassroots solution based on good governance empowering women and encouraging community participation. The project’s community-based environmental conservation and recycling activities supplement efforts made by the local council.

Malindi has received national and international recognition for its efforts and has won a number of awards, including the UN-Habitat/Ford Foundation Mashariki Innovations in Local Governance Awards Programme (MILGAP) prize in 2004.

Key lessons learned from the Malindi Town Movement

- The public is ready and willing to support well-managed programmes.
- People want to be associated with success.
- People are willing to contribute to dealing with common problems as long as they are actively involved and programmes are managed in a transparent manner.
- Money is not the best catalyst for change; it is merely a tool. When necessary, press coverage should be given.
- Records must be maintained at all times for project activities and, where necessary, project reports must be written and filed.
- MGTM uses banners, leaflets, newsletters, T-shirts, buttons, barazas (assemblies), songs, poems, dances and public announcements. Members belonging to other organisations publicise activities ahead of time.
- The credibility of an organisation is vital.
- The answer to cleaning up urban areas is community mobilisation and recycling.
- We can overcome challenges and achieve positive results through a high level of commitment.



Nairobi has undergone dramatic growth since 1979 and is now home to well over 3 million people making it the largest African city between Johannesburg and Cairo. It sprawls to the new suburbs and slums north, east and west. It is interesting to compare the area covered by golf courses and informal settlements and their respective locations. Slums – home to about 60% of Nairobi’s population – occupy almost the same amount of space as golf courses. Kibera – one of the oldest and largest slums in Kenya and Africa, with between 500,000 and 800,000 occupants – stands next to a golf course roughly the same size. For decades neither seems to have impinged on the other’s existence. The golf course has irrigated greens, whereas the neighbouring slum dwellers are underprivileged consumers.

Water is life, we are told, for people and the planet. Water is essential to human well-being, a vital input to economic development and a basic requirement for the healthy functioning of all the world's ecosystems. Clean water is essential for human health and survival, and also critical to other aspects of sustainable development

such as environmental protection and food security. Target 10 of MDG 7 proposes to halve the number of people without sustainable access to safe drinking water and basic sanitation. This target is also crucial for meeting most of the goals such as eradicating poverty, improving material health and combating major diseases.

India: soft drinks, hard cases

By Vandana Shiva and translated by Donald Hounam

The Indian government forced Coca-Cola out of the country in 1977. The company's return, in October 1993, coincided with the arrival of its arch-rival Pepsi. The United States multinationals now own 90 factories in India: Coca-Cola 52 and Pepsi 38. They describe these as bottling plants; actually they are pumping stations, each of which extracts up to 1.5m litres of water a day from the ground. It takes nine litres of clean water to manufacture a litre of Coke.

The processes used in manufacturing these soft drinks are inherently damaging. The extraction of groundwater deprives poor people of their fundamental right of access to clean water. The factories spew out toxic waste that threatens health and the environment. And the products themselves are harmful — the Indian parliament has set up a joint committee to inquire into the presence of pesticide residues.

In March 2000 Coca-Cola opened a plant at Plachimada, a village in the Palakkad district of the southern state of Kerala, intended to produce 1.2m bottles of Coca-Cola, Fanta, Sprite, Limca, Thums Up, Kinley Soda and Maaza every day. The conditional licence granted by the local panchayat (village council) authorised the use of motorised pumps, but the company drilled more than six wells and illegally installed high-powered electric pumps to extract millions of litres of pure water. The level of the water table fell from 45 to 150 metres below the surface.

Coca-Cola then polluted what little water it had not stolen from the community. It started by dumping waste outside its premises. During the rainy season, this spread into paddy fields, canals and wells, causing a serious health hazard. The company abandoned this practice and began pumping dirty water into dry boreholes that had been drilled on-site for the disposal of solid waste. This contaminated the aquifers.

As the water supply deteriorated, the local *adivasi* women had to travel about 5km to fetch drinkable water. A journalist at the daily newspaper Mathrubhumi, Virender Kumar, pointed out that during the time this took them, soft drinks would come out of the plant by the truck-load². The women organised a dharna (sit-in) outside the factory gates to protest against the depletion of the groundwater.

Because of Coca-Cola's activities, 260 wells — sunk by the authorities to supply drinking water and meet irrigation needs — have run dry. This part of Kerala is known as the rice bowl but agricultural yields have plummeted. Worse, Coca-Cola has been distributing the toxic waste from its factory to the villagers as free fertiliser. Analysis has shown that this sludge is rich in cadmium and lead, both carcinogenic.

Tribal and farming representatives have protested about the serious damage to harvests caused by contamination of aquifers and springs, and by indiscriminate drilling. They have particularly called for measures to protect traditional sources of drinking water, preserve ponds and water tanks, and maintain navigable waterways and canals.

When Coca-Cola refused to account for its practices, the panchayat withdrew its operating licence. It has been alleged that the company responded by offering the council's president, Anil Krishnan, a 300m rupee bribe (\$6.8m), which he refused. But the loss of the licence did not cost them the support of the state

government, which awarded Coca-Cola a subsidy of 2m rupees under its regional industrial policy. Pepsi and Coca-Cola have secured similar grants in all the Indian states where they have set up factories, although their products have negligible nutritional value compared with traditional drinks such as *nimbu pani*, *lassi*, *panna* and *sattu*.

Nor does the damage inflicted upon the food chain and the economy stop here. To sweeten its products, the soft drinks industry increasingly uses maize syrup, high in fructose and damaging to health. Since maize is already used in the industrial manufacture of animal feed, this significantly reduces the amount available for human consumption, depriving the poor of a cheap, basic food. The substitution of maize-derived sweeteners for healthier equivalents derived from sugar cane (such as gur and khandsari) has an adverse effect upon farmers, whose subsistence depends on cane crops.

In 2003 the district medical officer advised the people of Plachimada that their water was so polluted that it was unfit for consumption. The *adivasi* women were the first to denounce Coca-Cola's hydro-piracy with their sit-in. Their initiative sparked national and international expressions of solidarity. In February 2004, as the campaign gathered strength and with a drought worsening the water crisis, Kerala's chief minister finally ordered the closure of the Coca-Cola plant. The entire Plachimada panchayat joined the rainbow alliance created by the women. Another panchayat, in Perumatty, filed a public-interest suit against the multinational in the Kerala high court.

In December 2003 Justice Balakrishna Nair ordered Coca-Cola to cease illegal extraction of groundwater in Plachimada. The reasons for his judgment are as significant as the decision. He pointed out: "The public trust doctrine primarily rests on the principle that certain resources like air, sea waters and the forests have such a great importance to the people as a whole that it would be wholly unjustified to make them a subject of private ownership. The said resources being a gift of nature, they should be made freely available to everyone, irrespective of their status in life. The doctrine enjoins upon the government to protect the resources

for the enjoyment of the general public rather than to permit their use for private ownership or commercial purpose.

"Our legal system, based on English common law, includes the public-trust doctrine as part of its jurisprudence. The state is the trustee of all natural resources, which are by nature meant for public use and enjoyment. The public at large is the beneficiary of the seashore, running waters, air, forests and ecologically fragile lands. The state as a trustee is under a legal duty to protect natural resources. These resources meant for public use cannot be converted into private ownership.

"Water is a public good; and since the state and its various agencies are under an obligation to protect groundwater against excessive exploitation, their inaction constitutes a violation of the right to life guaranteed under Article 21 of the Indian constitution.

"The Supreme Court of India has consistently maintained that the right to unpolluted air and water are an integral aspect of the right to life as defined by this article. So although there is no law specifically regulating the extraction of groundwater, the panchayat and the state are required to prevent any over-exploitation of underground reserves. Coca-Cola's property rights do not extend to the ground water below the land it owns. Nobody has the right to appropriate the lion's share of this resource and the government has no power to licence a private third party to extract water in such vast quantities."

Accordingly, the court gave Coca-Cola a month to cease water-extraction; and it ordered the panchayat and the state to ensure that this demand was met.

The women have been the heart and soul of the resistance and their initiative has been taken up by lawyers, parliamentarians, scientists and writers. The struggle has spread to other areas where Coca-Cola and Pepsi are pumping out aquifers. Following the opening in 1999 of a Coca-Cola plant at Kaladera, a village near Jaipur, the capital of the state of Rajasthan, the water table level below ground fell from 12 to 37.5 metres. The opening of a factory in the Mehdiganj district, 20km

from the holy city of Varanasi (Benares), caused groundwater to sink by 12 metres and polluted surrounding fields. A Coca-Cola installation at Singhancher, a village in the Ballia district of eastern Uttar Pradesh, has caused long-term pollution to water and land.

Everywhere, protesters are organising. But the public authorities' usual response to demonstrations has been violence. At Jaipur, in October 2004, the well-known Gandhian activist Siddharaj Dodda was arrested for taking part in a peaceful march to demand the closure of the factory.

It is not only the drying-up of the wells; it is also the risk of contamination. When, despite evidence that their products contained pesticides that represent a danger to health³, both companies refused to produce a list of ingredients, the Rajasthan high court banned the sale of drinks manufactured by Coke and Pepsi. The supreme court rejected an appeal and demanded disclosure of the exact contents of the products. So far, the drinks remain banned throughout the state.

A 1999 study by the All India Coordinated Research Project on pesticide residues showed that 60% of food products sold in the country were contaminated with pesticides and that 14% contained residues above permitted levels. Facts like these give the lie to the myth that multinationals are primarily concerned with safety and more trustworthy than the public sector. This prejudice against the public provision of goods and services has helped sell the idea of privatisation, which has undermined the supply of clean water at an affordable price.

On 20 January human chains formed around Coca-Cola and Pepsi factories across India. People's tribunals gave the hydro-pirates notice to quit the country. The Plachimada case proves that people are more powerful than private companies.

Such pillaging of water resources could not happen without the complicity of centralising states. Campaigns have expanded to encompass dam projects and the grandiose plan to divert all the subcontinent's rivers from their courses, which is increasingly opposed⁴. Protest-



ers have denounced the privatisations encouraged by the World Bank, specifically that of the Delhi water supply⁵.

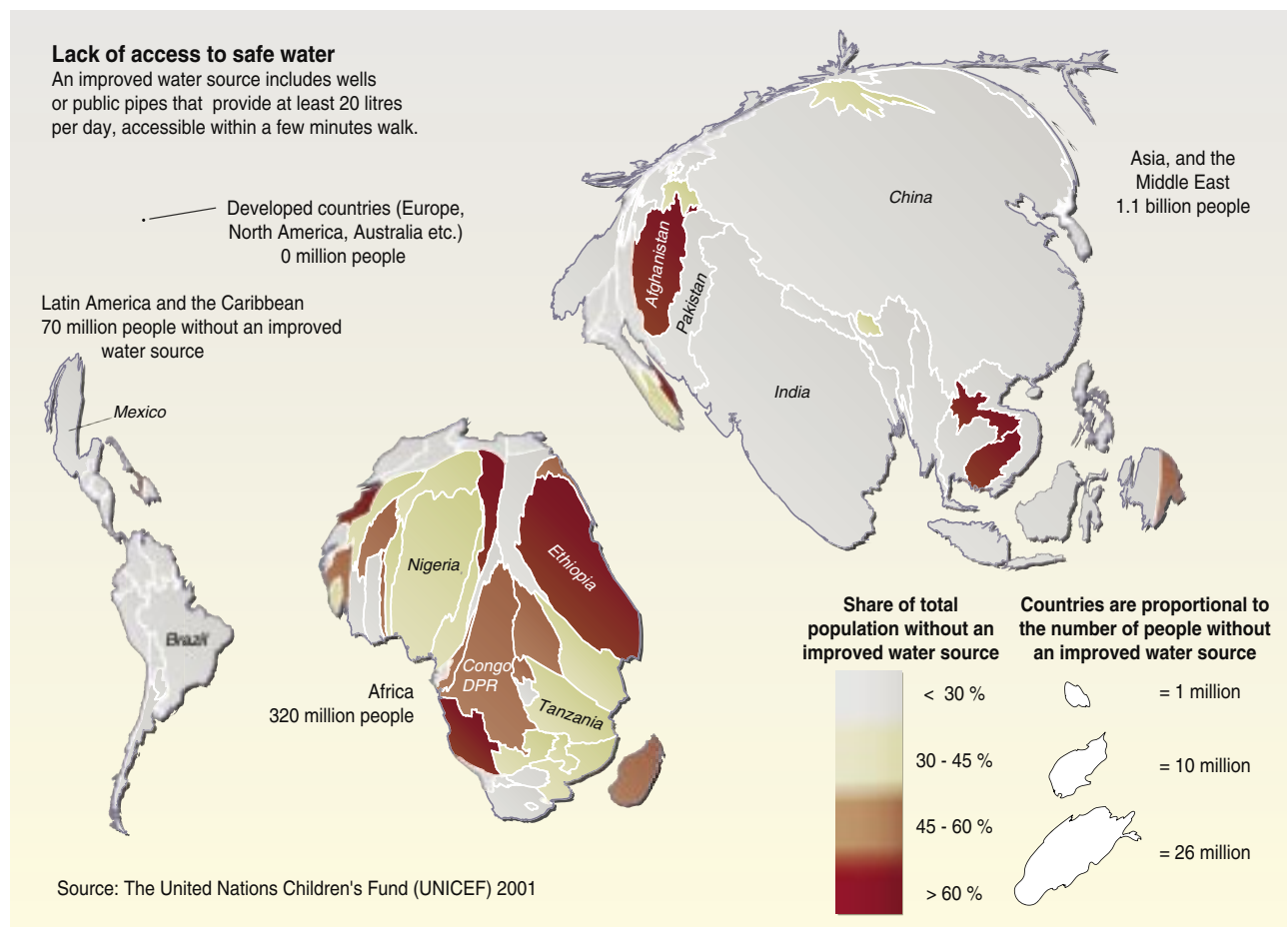
The struggle against the theft of water is not limited to India. Overexploitation of groundwater and major river diversion projects represent a significant threat to the world as a whole. Nature does not distribute water uniformly. If every part of the globe received equal rainfall, with the same frequency and pattern, the same vegetation would spring up everywhere, supporting the same animal species. Our world is built upon diversity; its hydrological cycle is a democratic system for the distribution of water to all living species. Without democratic access to water, there can be no democracy.

1. *Adivasi* denotes indigenous tribes, outside the caste system.
2. Virender Kumar, open letter to the chief minister, Mathrubhumi, Thiruvananthapuram (Kerala), 10 March 2003.
3. Studies showed that the beverages contained pesticides. The government commission concluded that these residues fell within the normal limits permitted in India. Coca-Cola consumed in the US contains no trace of pesticides.
4. See Arundhati Roy, *The Cost of Living*, Modern Library, New York, 1999.
5. Water treatment has been entrusted to Degremont, a subsidiary of France's Suez group. In recent years, the price of water in Delhi has risen 10-fold.

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Dhaka, Bangladesh: Nine year old Rashida Munshi washes herself after she has been working from 06.00 to 19.30 opening used batteries to recover the coil. There are no bathroom facilities. She has to wash in public waters which people also use as toilet. Being a girl she cannot take off her clothes to clean more properly. She is paid by amount. 100 batteries pay 2 Taka and she does about 500 batteries a day. Rashida makes about 280 Taka a month. The money goes to her mother who pays 450 Taka per month rent for their shack. Father doesn't work. He doesn't feel too well. July 1999. © Michel Szulc-Krzyzanowski / The Image Works.



Water-for-food and sanitation solutions

By the **Communications Division of the Stockholm Environment Institute**

Sanitation, health, water, food and ecosystems are closely interrelated. According to the Water and Sanitation Task Force, 42% of the world's population – 2.6 billion people – defecate in the open. A lack of basic sanitation services – defined by the WHO as the connection to a public sewer or septic system or access to a pour-flush latrine, simple pit latrine or ventilated improved pit latrine – undermines the health of men, women and, particularly, children. To meet the Millennium Development Goal (MDG) for sanitation, some 450m additional households will require services by 2015; 60% of these are in urban areas. A recent Stockholm Environment Institute (SEI) study¹ indicates that the MDG urban sanitation target will not be met through conventional water treatment alone, due to prohibitive costs and infrastructure requirements. One alternative for rural and urban areas is “eco-sanitation”, including dry toilets that use urine diversion and faecal sanitization and the composting and recycling of nutrients for agricultural use. “Eco-toilets” are an affordable, feasible option that may be scaled up for use in larger communities. Eco-sanitation systems have already been successful in China in both rural and urban areas, and in Vietnam, South Africa, Mexico and El Salvador, to name a few.

Ecological sanitation can meet a significant proportion of fertiliser needs while helping to improve the capacity of the soil to hold water. In sub-Saharan Africa adopting this approach could replace almost all the commercial fertilisers currently used that are based on fossil fuels and finite resources.

However boosting soil nutrient levels is not the only way of eradicating global hunger. To produce enough food to halve the world's undernourished population by 2015, fresh water consumption will need to increase by 50%. Producing food uses more water than any other human activity. It takes 4,000 litres of fresh water per day to provide food for just one person. This adds up to 1,300 cubic metres per person per year. Some countries, such as India, Kenya and Nigeria, would have to double current fresh water use, even after the benefits of crop-per-drop (increased

yield through more efficient use of water) improvements are factored in.

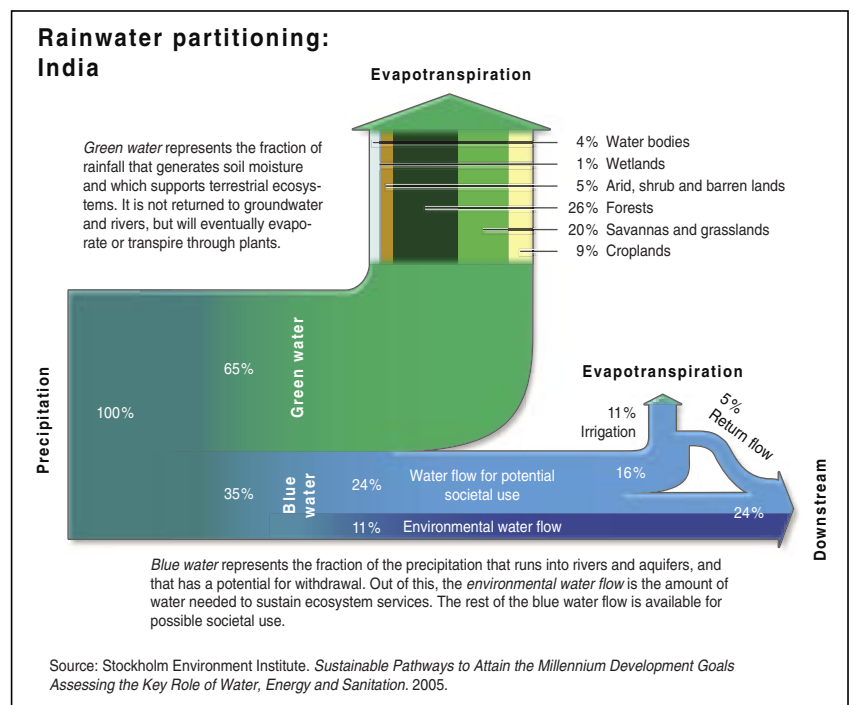
While irrigation will continue to be important, it does present limitations and cannot solve the problem alone. The emphasis must be placed on crop-per-drop improvements targeting rain-fed agriculture. We will need improved land management practices that increase the soil's water content. The necessary techniques are available, though new and not yet widespread.

There is a strong correlation between poverty, hunger and unreliable rainfall. This is a major challenge to researchers and policy makers. The countries most seriously affected by these issues also face the highest risk of water scarcity, huge variations in rainfall and frequent droughts and flooding. The need for more water for food production will result in trade-offs with human use down-

stream and other terrestrial and aquatic ecosystems. Major increases in the use of fresh water for food production in the near future will require joint efforts to balance the needs of humans and nature. Moreover to reduce world hunger by 50% over the next 10 years, 1.2 m sq km of land will need to be converted to rain-fed agriculture from other uses.

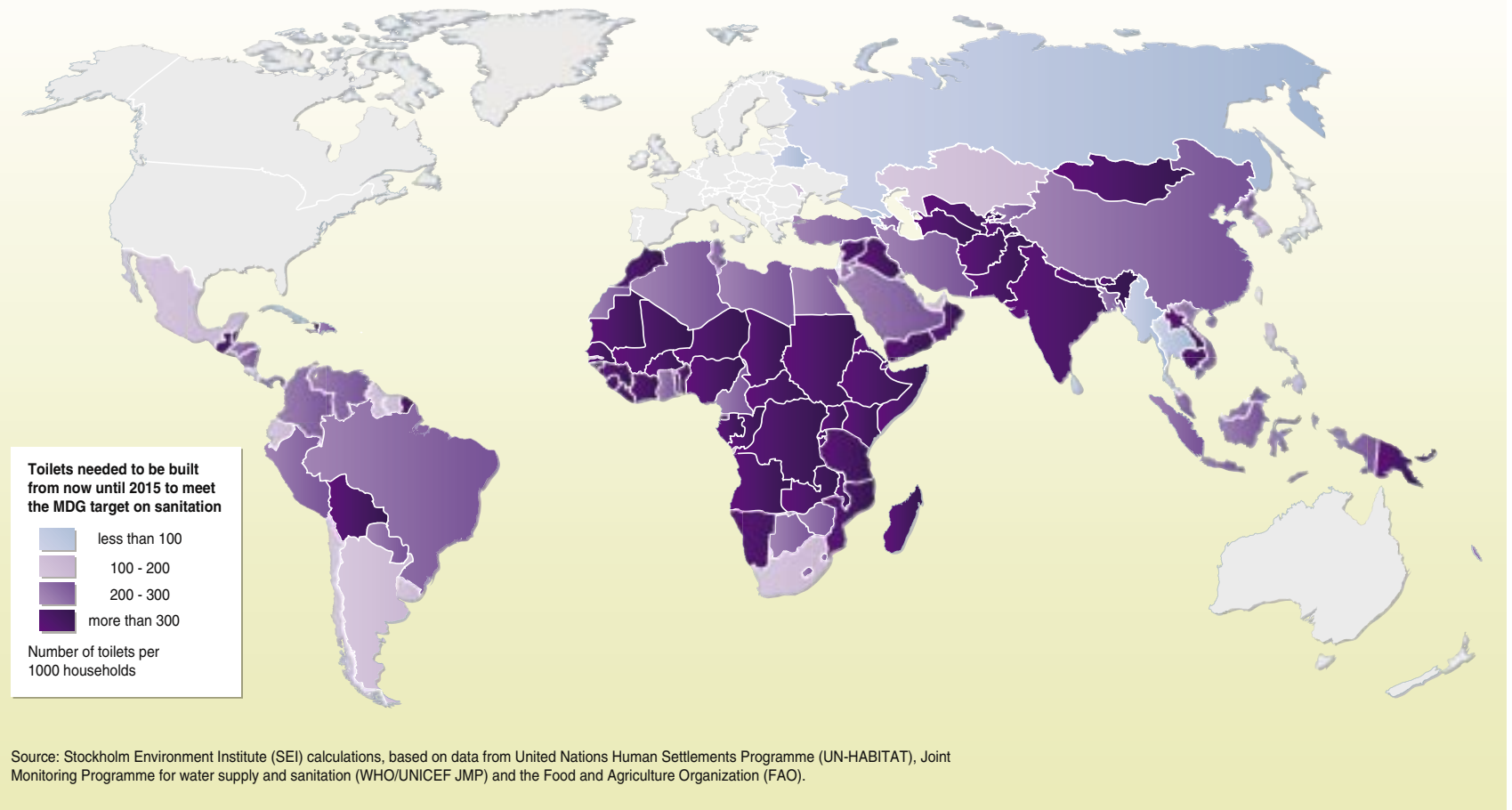
With clear links between the issues of water, sanitation, health, poverty and hunger, there is an urgent need to find intelligent integrated strategies for managing fresh water, land use and sanitation.

1. See www.sei.se for downloadable version of the report “Sustainable Pathways to Attain the Millennium Development Goals: Assessing the Key Role of Water, Energy and Sanitation”, Stockholm Environment Institute (2005).



India is facing a food supply challenge with more than one billion inhabitants, and out of them 35% below the poverty line. This analysis of the rainwater partitioning shows that there is room for India to use more water than the current status, to increase food production, and ultimately reduce poverty (MDG1) – while still retaining healthy aquatic ecosystems (11% of the rainwater needed for MDG7). A similar analysis conducted for Kenya shows, for instance, much more narrow margins.

Number of toilets needed to meet the sanitation target by 2015: To halve the proportion of people without sustainable access to sanitation



Turning urban waste water to wealth

By **Liqa Raschid-Sally, Senior Researcher at the International Water Management Institute**



Goal 7

Poverty is often synonymous with a poor water supply, a lack of sanitation services, environmental degradation and poor health. Improving the water supply raises the issue of how to deal with waste water, 70% of which is channelled back into systems largely untreated. In many places untreated waste water is discharged into the nearest stream. Cities in the developing world have few resources to invest in waste water management. The results can be seen in waterways such as the Musi River in Hyderabad, India, the tributaries of the Red River in Hanoi, Vietnam, and irrigation canals in Pakistan and Central Asia, which are virtual open sewers.

Many poor farmers depend on waste water for their livelihoods, it often being the only water available. Occasionally farmers actually prefer such water for irrigation, as the nutrients it contains allow them to save on fertiliser. In Haroonabad, Pakistan, farm-

ers on an irrigation-canal system sold their fresh water rights, bought waste water from the municipality and channelled it through the existing irrigation system to their plots. They saved fresh water and were more productive than farmers using conventional irrigation (gross profit margins of \$840 per hectare compared with \$614 per hectare). This was largely due to the year-round availability of waste water, which allowed for multiple growing seasons, as well as the additional nutrients it contained. In Ghana, farmers in urban and peri-urban areas use polluted water to irrigate vegetable plots and earn annual incomes ranging from \$600 to \$5,000 per hectare, lifting them above the poverty line. In India, along the banks of the Musi River, waste water is considered “black gold” to the 51,000 direct and indirect users who depend on it for their livelihoods.

However, there is a downside to this practice. The use of waste water for irrigation poses a threat to human health and the environment. The major threat to farmers and their families is from intestinal

parasites – most often worms. It may also contain highly poisonous chemical toxins from industrial sources, including heavy metals, active hormones and antibiotics. The risks associated with these substances may, in the long run, pose a greater threat to public health than the risks associated with excreted pathogens¹. However, from the farmers' perspective, earnings from agriculture provide access to health care, nutrition and education. In the absence of any alternative, they are willing to live with the risk. But do they really have a choice?

There is a further dimension to the issue. The long-term use of waste water may also damage the soil under some conditions leading to soil clogging and salinisation, with eventual loss of productivity and damage to crops.

The environment may also be a source of solutions, however. Down the Musi River, water quality has improved because runoff from irrigated fields is cleaner than the waste water initially used to irrigate. The land can assimilate more waste than

streams and ponds and, if designed properly, the system can be made sustainable at a lower cost. This is a clear improvement on the current disposal practice of dumping untreated waste water directly into streams.

These experiences suggest that we need to explore land use as a potential “sink” for waste water. A balance must be struck between the economic survival of families, and potential health risks to farmers and consumers and environmental degradation. This will require working in collaboration with policy makers, health experts, engineers and land-use planners.

1. Scott, CA; Faruqui, N. I.; Raschid-Sally, L. 2004. “Wastewater use in irrigated agriculture: Management challenges in developing countries” in Scott CA, Faruqui NI, Raschid-Sally L. (eds.) *Wastewater Use in Irrigated Agriculture: Confronting the Livelihood and Environmental Realities*, Commonwealth Agricultural Bureau International, Orient-Longman, and International Development Research Centre, Ottawa, Canada.

Integrating sustainable development principles into the policies and programmes implemented by individual countries is crucial, but how is it to be done? Environmental challenges are often visible only in a long-term perspective, while political planning is often short term, pandering to electoral pressures. Moreover environment

ministries are often seen as less powerful than other ministries, with little contact with economic players. So, apart from talk about "mainstreaming the environment into policies" there is little practical guidance for conducting meaningful analysis. Currently few countries have attempted to deal with the environment in a strategic way.

Can Environmental Assessment reduce poverty?

By **Ineke Istenhauer**, Netherlands Commission for Environmental Impact Assessment

In 2002 Ghana published a Poverty Reduction Strategy (PRS), as a framework for national economic policy and all development assistance to Ghana. But little attention was paid to the environmental impact of policies, such as improving transport, intensifying farming and developing the private sector. This may ultimately harm or even stop economic growth. Moreover the strategy did not explore the potential contribution of natural resources to the economy. The government therefore decided to carry out a Strategic Environmental Assessment (SEA) to adjust the strategy as required. The SEA was applied at national and district level, with options that favour both the poor and the environment. They may be used to update the strategy and enhance the sustainability of more than 100 district development plans.

The prime aim of the SEA was to bring parties together and build up mutual understanding on poverty reduction and the environment, a process that started with the make-up of the SEA team itself, combining environmental and economic planning expertise.

The team doing the assessment had six members: three from the Environmental Protection Agency and three from the National Development Planning Commission. They enjoyed the support of a local and an international consultant and the advisory services of the Netherlands Commission for Environmental Impact Assessment. A steering committee provided regular inputs. The team did all the actual

groundwork, to ensure the process and results were completely "Ghana-owned". Hiring a foreign consultant would have been easier, but far less effective in terms of scope for training-on-the-job and commitment to using the outcomes.

The relevant ministries came onboard right from the start, with the organisation of a national workshop. It set out to explain how an SEA enables the environment to be integrated in framing policy and planning. The findings of a preliminary pilot assessment showed how a more detailed assessment could provide an opportunity for all sectors to pool their energies and discuss common issues – especially those that give rise to conflict or can mutually reinforce each other to achieve sustainable poverty reduction. A number of conflicting policies were identified. For example the Ministry of Food and Agriculture's policy of rehabilitating existing irrigation facilities conflicted with the Ministry of Health's malaria control policy. Similarly the Ministry of Lands and Forestry's establishment of plantations and the Ministry of Works and Housing policy of acquisition of land for housing may compound land availability problems.

The workshop produced a consensus on the key recommendation that the SEA should proceed, involving district assemblies, due to their responsibility for framing District Development Plans, the main way of implementing the PRS. Ultimately all 27 ministries and 108 out of 110 districts participated.

At national level ministry staff, supported by the expert team, reviewed all policies, plans and programmes in the

strategy. Each review sought to modify and improve policies to make them facilitate, rather than hinder, environmental objectives. In the meantime guidelines, manuals and training material were produced on how to apply the SEA to all ministry staff.

On the basis of this exercise the expert team suggested measures to refine policies in line with environmental risks. The assessment clearly demonstrated the link between over-exploitation of natural resources including soil, water and forest cover and environmental hazards such as bushfires and drought, and the resulting hardship faced by subsistence farmers. The team consequently recommended developing specific programmes and policy measures to help subsistence farmers improve soil quality and reduce exposure to hazards. It also suggested alternatives to the most hazardous policies, with greater potential for assisting the poor and protecting the environment. The relevant ministries discussed these options, leading to practical recommendations endorsed by the expert team. For example the overall objectives of the medium-term macro-economic framework should include increased government expenditure on natural resource conservation, sustainable development initiatives and enhancement of degraded environment to support agricultural production. Small-scale business development proposals that should provide incentives for community-based initiatives to manage natural resources, such as agro-forestry, wetland conservation and eco-tourism.

At district level, District Development Plans were reviewed and improved. District staff assessed the plans directly, after

prior training on assessing the sustainability of programmes and budgets.

The SEA has resulted in broad awareness and recognition of the importance of integrating environmental issues in plans and policies at national and district level. It even convinced ministries which once thought the environment did not concern them. It also led to clear recommendations for a more sustainable PRS for 2006-8. The expert team is currently fully involved in framing the new strategy as members of "cross-sectoral planning groups". There is good reason to hope results will play a key role in the new PRS.

At district level the SEA led to a better grasp of how district plans can be made more sustainable and some districts have adjusted plans and budgets to incorporate environmental activities.

The manuals, guidelines, reports, checklists and training material produced in the course of the assessment have helped to raise environmental awareness. This is a prerequisite for real changes in activities on the ground and the relevant ministry and district budgets, ultimately decisive for poverty and the environment.

Non-governmental organisations have played an active role and the public sector is starting to take the environment seriously.

It is too early to say whether the SEA has really contributed to reducing poverty in Ghana, but there are signs of some promising spin-offs. Some ministries have used SEA methods for internal planning purposes. The environment has thus been integrated in planning. But the SEA

has also made for more transparent and participative planning, thanks to dialogue with other ministries. Some ministries have included new budget lines for environmental activities, or strengthened or upgraded in-house environmental units. Having their own budgets and units, rather than relying on the Ministry of Environment, will show how the environment can contribute to poverty reduction.

There is clearly room for further improvement. For example, most of the assessments were based on qualitative expert judgement. Additional justification and supporting evidence would probably have made the conclusions more objective and convincing as a basis for decision-making. The same is true of the cost of implementing recommendations, which the SEA overlooked.

District and sector pilot assessments will be undertaken in a follow-up phase. They will be an opportunity to develop more concrete policies in favour of the poor and the environment and to gain a clearer idea of the budgetary consequences of recommendations. Pilot studies will also be used for capacity building, through learning by doing.

Another priority is to develop and implement a system to monitor SEA impacts. This is important to determine whether the new PRS performs better than the existing strategy. It could also check whether programmes, projects and district development plans, resulting from the strategy, pay more attention to the environment than current plans. This will ultimately lead to tangible improvements in the conditions vital to successful poverty reduction.

"Fighting poverty, promoting sustainable development and eliminating environmental degradation is far too important a job to be left to bureaucrats, diplomats and civil servants."

Bono

"It is evident that many wars are fought over resources, which are now becoming increasingly scarce. If we conserved our resources better, fighting over them would not then occur."

Wangari Maathai

Donor commitments


The way development cooperation is being provided is changing to increase effectiveness and support progress towards the Millennium Development Goals. Many donors are shifting their support to comprehensive strategic planning frameworks such as poverty reduction strategies and sector-wide development plans. These are framed and led by the developing country partners and implemented through national and local bodies. The changes encourage better coordination and pooling of resources among donors. They lower the administrative burden on aid recipients and maximise the potential benefits of development initiatives. However they also require new approaches when it comes to ensuring long term environmental, social and economic sustainability.

In February 2005 the High Level Forum on Joint Progress toward Enhanced Aid Effectiveness took place, with donors harmonising their approach to environmental impact assessment, including the relevant health and social issues at project level. However what works for a project has only limited value when designing tools for strategic programmes. Donors and partner countries consequently made a joint commitment to "develop and apply common approaches for strategic environmental assessment at the sector and national levels."

The OECD/DAC Good Practice Guidance on Strategic Environmental Assessment (SEA) aims to support this process. It promotes the practical use of SEA in the context of development co-operation. It focuses on harmonised approaches that recognise the importance of sticking to developing countries' own priorities and other key principles underpinning development cooperation efforts. The guidance will be finalised in spring 2006.



Goal 7



POVERTY MAPPING
GEOGRAPHY OF POVERTY
GEOGRAFIA DE LA POBREZA
GEOGRAPHIE DE LA PAUVRETE

Mapping Poverty and Environment

for a better understanding of food security, livelihoods and vulnerability

Poverty maps are spatial representations of poverty assessments. The assessment information comes from a variety of sources and can be presented at various levels from global to local. Indicators of income poverty, such as GDP per capita or daily subsistence levels, or of well-being - life expectancy, child mortality, or literacy, are most frequently used in poverty maps, and are derived from national census data or household surveys. Sometimes various indicators are combined to give an index of poverty or human development, like the Human Development Index, a composite of life expectancy, literacy and income.

Poverty is a multi-faceted problem and its levels tend to vary considerably over space. There is often limited information on the relationships between poverty reduction and ecosystem change, on the trade-offs and synergies of different poverty interventions, and the relation with ecosystem conditions.

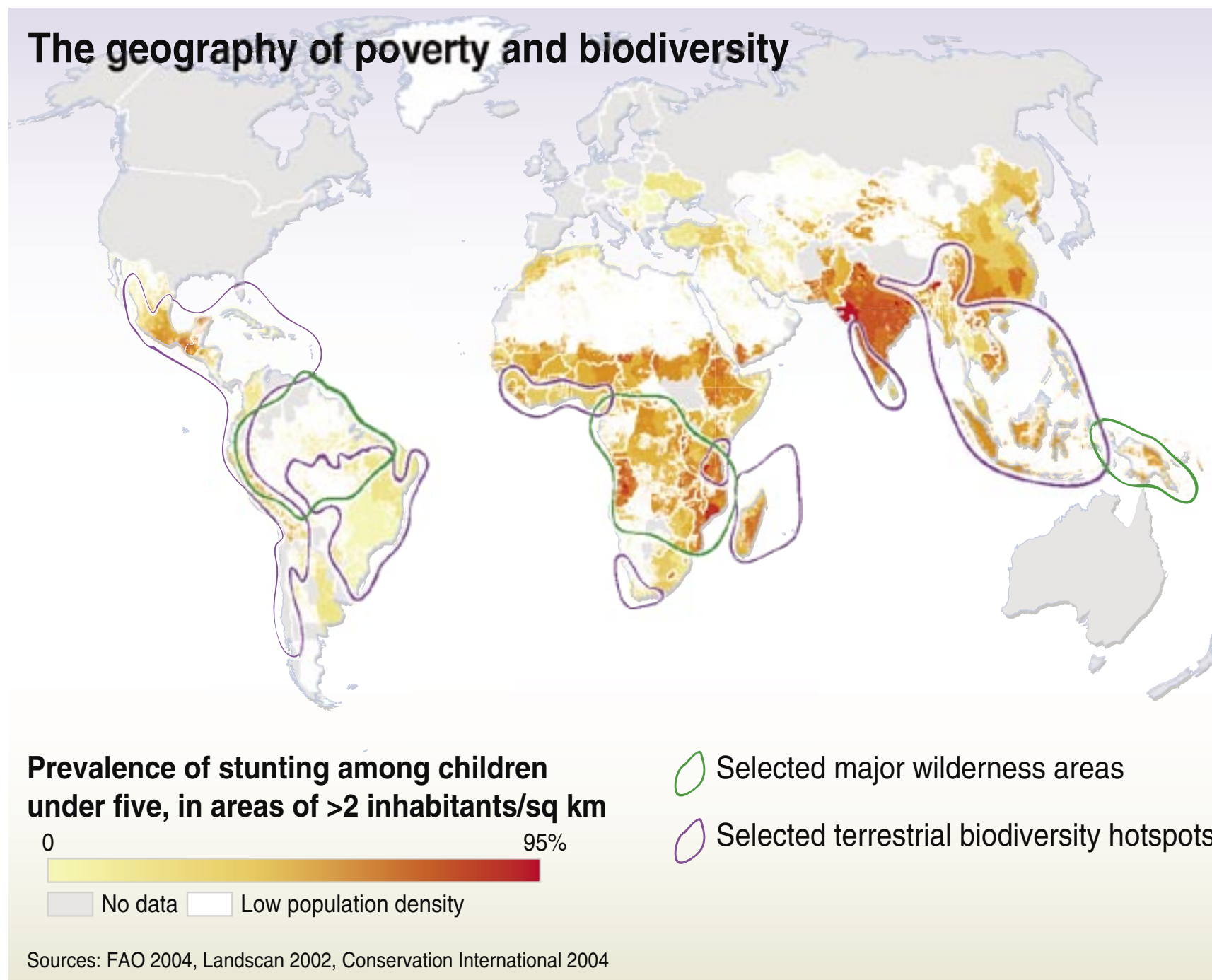
Poverty maps are being used and have impact in developing countries

- Improved and validated geographic targeting
- Made resource allocation more accountable, transparent, and equitable
- Ignited national and local-level debate
- Encouraged broader participation
- Facilitated coordination between institutions
- Improved credibility of institutions
- Supporting strategic decision-making

The povertymap.net web-site features examples of poverty maps from all over the world, as well as a library of publication on mapping poverty, food insecurity and vulnerability.

<http://povertymap.net>

“We should live here on Earth as though we were intending to stay for good.”



Human development has stood against conservation in many places. The creation of national parks or protection of certain species have robbed local peoples on sources of food and income. Sustainable management principles can, if implemented properly, provide food, shelter, income and water for the local population. This can be implemented in many ways, such as through communal resource management or the creation of new means of income in tourism and as park stewards. The global situation, depicted in the map, shows that some of the world's most important riches in biodiversity and wilderness are located in places with high population density and high incidence of poverty (stunting in children as a poverty indicator).

Environment key to poverty reduction in Tanzania

By **Blandina Cheche and David Howlett**,
Poverty Environment Officers, Vice
President's Office

Three years after adopting the Poverty Reduction Strategy (PRS) approach, Tanzania will be taking another step, embarking on the second phase with a nationwide framework putting poverty reduction high on the country's development agenda.

The National Strategy for Growth and Reduction of Poverty (NSGRP) or Mku-kuta as it is known in its Swahili acronym builds on the Poverty Reduction Strategy Paper (PRSP) of 2000, which was linked to debt relief under the Heavily Indebted Poor Countries Initiative (HIPC). The Mku-kuta represents a new, more comprehensive approach to poverty reduction. Although it is built on its predecessor, it differs in a number of key areas. In particular it pays greater attention to cross-the-board issues such as environmental sustainability that contribute to both poverty reduction and growth.

This follows the realisation by the government of Tanzania, national stakeholders and development partners that the first PRSP failed to properly address the environment and other important major issues, essential to achieving sustainable poverty reduction and growth.

A key feature of the review leading to the NSGRP was national ownership and the implementation of extensive consultation with a wide range of stakeholders on content and focus. The strategy also makes ex-

PLICIT mention of sustainable development as a basic principle. Allowance for the environment complies with the requirements of target 9 under MDG 7.

A number of factors explain the need to integrate the environment in the NSGRP. The majority of the population depends on the environment and natural resources for its livelihood, with use of the environment and natural resources accounting for 66% of gross domestic product. Conversely poor environmental conditions are a major cause of ill health. A proper supply of water is needed, for drinking, irrigation and hydroelectric power. Much as elsewhere, the poor in Tanzania are at the greatest risk from environmental disasters, and the country has suffered from the increasing frequency of droughts and floods. With respect to governance, access, rights and control over the environment and natural resources are key factors in the development of sustainable livelihoods. Lastly the abundance and, more commonly, scarcity of natural resources has previously triggered conflicts in the mining and water sectors.

To integrate the environment into the poverty reduction process, a programme was developed at the Poverty Eradication Division in the Vice President's office with the support of the UNDP, DFID, Danida and now UNEP. The programme has three parts.

The first priority is knowledge and a better understanding of the links between poverty and the environment. Work has included studies of connections between

poverty and environmental policies, and the first public review to establish levels, trends and distribution of environmental expenditure and revenue. The potential of a Strategic Environment Assessment for poverty reduction in Tanzania has also been considered.

Second, environmental data is being integrated in poverty reduction and local planning to determine the impacts of policies and plans on related issues. In particular a preliminary set of poverty-environment indicators has been added to the poverty monitoring system. Linked to the NSGRP a major study is underway to further refine this indicator set and link it to routine data collection and reporting on the MDGs. To obtain a national baseline for the environment and livelihoods, key questions were included in the 2003 agricultural survey. They will also be added to the environment module of the Tanzania Social Economic Database.

Finally capacity must be built at national and local level to better address poverty and environmental issues in future interventions. A new environmental management system has been developed to protect the environment and livelihoods. The government has set up an environment working group with broad membership, the aim being to promote integration of environmental factors into development policies, with plans to achieve sustainable use of the environment and natural resources for poverty reduction.

The programme on poverty and the environment and the focus on cross-

the-board issues is directly responsible for the inclusion of the environment in the NSGRP. As part of the consultation process, civil society organisations and an environment working group submitted proposals on the environment and natural resources. Among others they explained how enhancing the environment, natural resources and conservation can contribute to achieving the new strategy's goals and targets. This is an essential step as it focuses thinking on how the environment contributes to the NSGRP clusters and outcomes.

It is worth noting that 15 of the NSGRP's 108 targets are directly related to the environment and natural resources, and that interventions on the environment are expected to contribute to other targets.

Efforts have focused on work that will help achieve the goals and targets under each of these clusters of broad outcomes. For example one cluster aims to promote sustainable, comprehensive growth, targeting 6-8% growth in GDP growth by 2010. To achieve this the NSGRP will be working on the sustainable management of catchments to ensure water and energy services are provided for the economy and to support livelihoods. Under the fourth goal – raising income among men and women in rural areas – the NSGRP will seek to increase jobs related to the use of natural resources, with a greater share of benefits from wildlife, forests and fisheries for local communities. Under the second cluster the NSGRP has a specific environmentally related goal of giving all men, women and children

access to clean affordable safe water, sanitation, decent shelter and a safe and sustainable environment, thereby reducing vulnerability to environmental risks. The cluster includes a target for reducing pollution levels and vulnerability to drought and flooding, with subsidiary strategies on pollution control and prevention, sanitation and solid waste management, desertification and drylands. Similar interventions are expected to contribute to the second goal of reducing infant, child and maternal mortality, morbidity and malnutrition.

Importantly action on the environment is expected to help achieve governance and accountability goals. For example attention will focus on access to and control over natural resources and reducing related corruption, for instance for illegal logging.

Although Tanzania has taken significant steps to make the environment a key element in future policy, there are still challenges to implementing the measures defined by the NSGRP and developing operational guidance at a local levels. The main challenges are integrating the environment in policy, regional and local planning, and budgets; making it an essential component of growth and development policies, notably public health; increasing community-based programmes for managing natural resources that impact on livelihoods and growth; reducing vulnerability to environmental risks; and collating data for poverty and environment indicators and reporting on MDG 7.

The environment is closely linked to health issues and human well-being. Excessive and wasteful consumption, social inequality and inefficient use of resources perpetuate a vicious circle of pollution and resource degradation that fuels poverty and destroys livelihoods. These conditions severely harm adults and children,

particularly those living in ecologically vulnerable areas. Up to 20% of the disease burden in developing countries may be due to environmental risk factors (as with malaria and parasitic infections).

Environmental change and infectious diseases

By **Bruce A. Wilcox and Duane J. Gubler**, *Asia-Pacific Institute of Tropical Medicine and Infectious Diseases University of Hawaii*

Over the last 30 years the reversal in the declining death rate due to infectious diseases has alarmed international health experts. Dramatic successes in eradicating small pox, controlling polio and tuberculosis, and eliminating vector-borne diseases such as yellow fever, dengue and malaria from many regions convinced most experts the era of infectious diseases would soon be over. Unfortunately this optimistic prognosis was premature as a number of diseases have dramatically re-emerged. Tuberculosis, cholera, dengue, plague and malaria have increased in incidence or geographic range, as have new drug-resistant strains of bacteria. In addition newly recognised diseases, such as Aids or Sars, have emerged.

The present global emergence of infectious diseases is clearly associated with the social and demographic changes of the past 50 years, particularly urbanisation and globalisation, with the attendant spread of pathogens (agents causing disease) via infected humans, hosts, vectors or commodities. The change in the environment caused by human activities is also apparent in the transformation of much of our landscape and conversion of regional systems once dominated by natural ecosystems. Factors include expansion into urban or peri-urban habitat, deforestation, and the spread of intensive farming. The environment's role in the emergence of diseases is apparent in the connections between the direct consequences of human changes to urban and rural landscapes and ecosystems, and the secondary effects on disease emergence factors. Developing irrigated agriculture, for example, can create breeding grounds for mosquitoes, a vector for malaria. Likewise the inadequate storm drainage and sewerage systems often associated with rapid urbanisation not only increase the breeding habitat for disease vectors but facilitate the spread of water-borne pathogens causing cholera and leptospirosis.

Overwhelming evidence points to human demographic changes as the major direct

and indirect factor contributing to the increase in infectious disease, with somewhat different dynamics and mechanisms at work in urban and rural environments. In the first case the increasing number of people crowded into dense settlements has dramatically increased opportunities for food, water, rodent and vector-borne pathogens to "colonise" and persist in human populations. Each pathogen has unique transmission and adaptive characteristics that determine a minimum population for survival (the threshold for measles is about 250,000 people). Whether the threshold is 100,000 or a million the number of large urban settlements and the average settlement size has been growing fast in recent decades. The number of cities of one million or larger was 76 in 1950, 522 in 1975, 1,122 in 2000, and is set to exceed 1,600 by 2015. This 20-fold increase translates to a roughly similar increase in global infectious disease vulnerability due to this one factor alone.

This type of growth has indirect social and environmental consequences that contribute to multiplying the actual increase in population. Poverty, poor living conditions, including lack of sanitation and infrastructure for waste-water and solid waste management, increases opportunities for vector-borne diseases and others passing from animals to humans. The geographic spread and expansion into peri-urban areas of the mosquito *Aedes albopictus*, exquisitely adapted for breeding in discarded plastic containers and used automobile tires, is a good example of how a potential vector of viral diseases has taken advantage of environmental change. Lack of sanitation and waste water treatment, and industrial-scale intensification of animal production systems the world over, contribute to exotic species, and the proliferation and spread of water and food-borne pathogens. Increasingly frequent outbreaks of infections are caused by these and other organisms, many of which may eat alongside or prey on wild mammals and birds as natural parasites. The contamination of surface waters and spread of pathogens is further promoted by the alteration of catchments and watersheds accompanying urbanisation, and intensive farming around cities. Channelling streams, removing vegetation on the banks, and filling in wetland – all

of which accompany unplanned urbanisation – eliminate the natural retention and nutrient recycling systems, as well as barriers to surface run-off contaminated with intestinal pathogens. Nutrient pollution leading to oxygen depletion in estuaries, lakes, streams and even stretches of ocean, such as the Gulf of Mexico, helps such pathogens survive too.

In rural areas population and consumption play a less direct role in contributing to disease emergence, particularly as rural emigration is fuelling the demographic explosion in cities. It is more that urban areas are driving a sustained increase in the timber trade, agriculture, stock raising and mining, resulting in turn in deforestation and changes in land use that are transforming rural landscapes and natural areas in ways that often facilitate the emergence of disease. Deforestation or even "patchy" reforestation leads to ecological changes such as increased edge habitat and local extinction of predators that favour some disease vectors and reservoir species. Encroachment of individuals and settlements on natural ecosystems brings humans into contact with known and novel

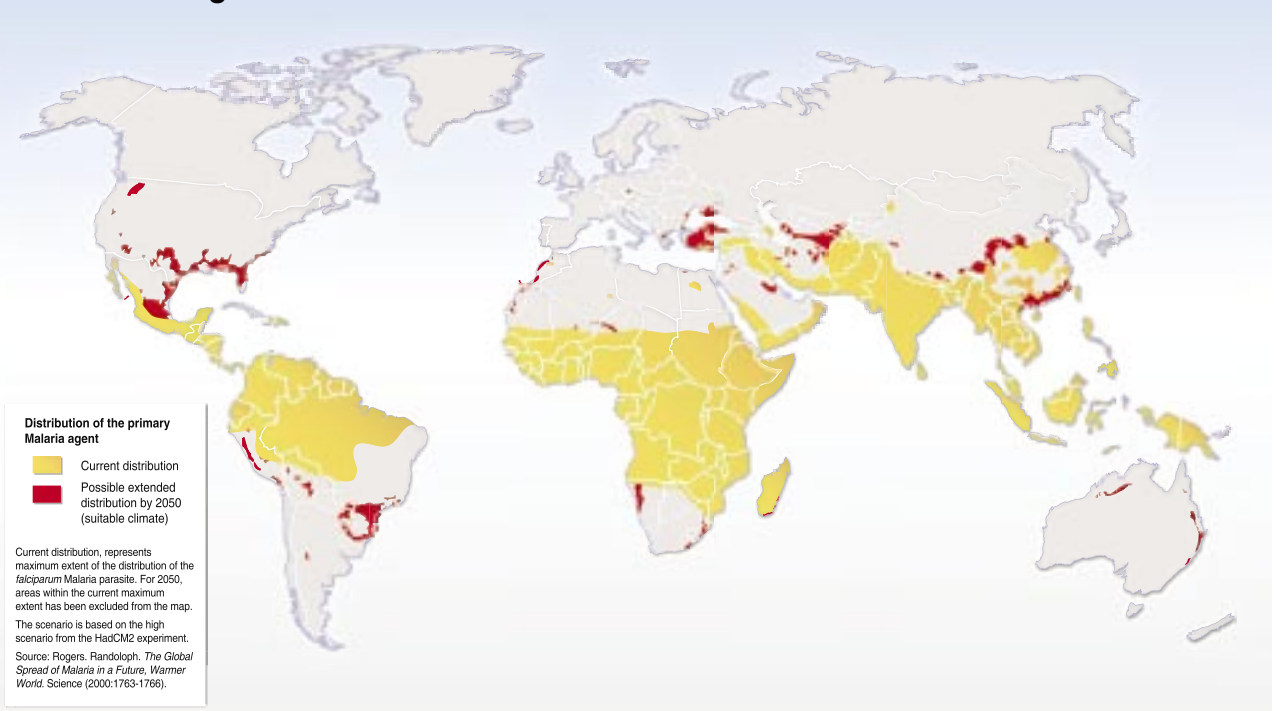
pathogens. The spread and intensification of farming results in the development of irrigation systems, ideal breeding sites for mosquitoes and a habitat for opportunistic insects and rodents that may be vectors or reservoirs for disease. Dams provide a favourable habitat for other vectors.

Climate change represents a potential environmental factor affecting disease emergence. Shifts in the geographic ranges of hosts and vector, the effect of increasing temperature on reproductive, development and mortality rates on hosts, vectors, and pathogens, and the effects of increased climate variability on flooding and droughts all have the potential to affect disease incidence and emergence positively or negatively. At present there is insufficient evidence to indicate what the net effect will be once climate changes begin to have a major affect on ecosystems. However, a dominant theme emerging from research on the ecology of infectious disease is that accelerated and abrupt environmental change, whether natural or caused by humans, may provide conditions conducive to pathogen emergence: pathogen

adaptation, host switching, and active or passive or dispersal.

The resurgence of infectious diseases worldwide reflects our quick-fix mentality, with poor development planning, a lack of political determination and institutional inertia. It is not the inevitable result of development, environmental change, or even incremental population growth. On the contrary much can be done to reverse the current trend. As well as rebuilding the public health infrastructure for infectious diseases, there is substantial evidence and a growing number of examples of how regional planning and development, including urbanisation, agricultural expansion, and the management and conservation of forests and other ecosystems can minimise and even reduce outbreaks of infectious disease as well as environmental damage. Basically we need an integrated approach to pathogen control. This approach will involve meshing social and economic development programmes, environmental and natural resource management, with intervention based on the reinigorated field of disease ecology and methods involving community participation.

Climate Change and Malaria



The burden of sub-Saharan Africa: Aids, poverty and natural resource degradation

By **Melissa Thaxton**, *policy analyst for the Population Reference Bureau*

Over the last few decades, the isolated villages of Tanzania's northern coast have been transformed into a highly competitive market economy based on the marine fish trade. Many young men have been lured to the region by the prospect of seasonal employment.

The arrival of a highly mobile male population – ill-informed about condom use and HIV-Aids generally – in a region, where poverty is chronic and women experience very low status, has generated a culture of high-risk sexual behaviour and soaring HIV prevalence rates. Indeed Aids is now an important part of poverty, natural resource degradation, and ill health in these communities.

This vicious circle is hardly confined to coastal Tanzania. In sub-Saharan Africa, where HIV-Aids is most prevalent, the links between Aids, poverty, gender roles and natural resource degradation are just beginning to be understood. The integrated nature of these issues will require creative solutions that combine

sustainable and appropriate community-level interventions, with district- and national-level policies and practices based on good governance principles.

Women in northern coastal Tanzania – who have always had primary responsibility for rearing children and securing adequate household resources – have been particularly hard hit both by a declining economy and a degraded environment. Fish catches and agricultural productivity are dropping, and their husbands are spending more on alcohol and sex, driving many of these women to seek cash income.

But such opportunities have been dwindling. Increased shoreline and near-shore ocean water temperatures have killed off large portions of the area's seaweed farms. Disease and marauding wildlife have decimated cashew and fruit crops. Women in Tanzania also have severely limited access to education, employment, credit and transportation. As a result they are increasingly turning to sex work, running a high risk of HIV infection.

Because Aids often affects people in their prime working ages – between 25

and 45 – the poverty that the epidemic precipitates can severely degrade natural resources and agricultural productivity. These impacts can be particularly severe in regions and communities where livelihoods depend a great deal on forests, agriculture or fishing.

As men and women with Aids die or become too ill to work, their family members are often forced to find new income sources – which can ultimately lead to more intense and less sustainable use and extraction of resources. In eastern and southern Africa such practices often include the unsustainable harvesting and sale of forest products such as wild foods and medicinal plants. Woodcutting is on the increase to produce charcoal for sale, especially when families face severe food shortages. In coastal areas widowed women and their children, desperate to make a living from declining shallow water fish stocks, are increasingly using small-mesh fishing nets fuelling the vicious circle of resource depletion.

In Malawi poaching has increased over the past two decades in forested areas near communities where HIV-Aids rates are particularly high. Local forest managers

and community members responsible for law-enforcement connect the two developments. Poaching has apparently provided a lucrative source of income for Aids sufferers or their families.

Increased demand for coffins because of high death rates from Aids has contributed to unsustainable harvesting of some forests in southern Africa. Along the Limpopo watershed – which crosses the boundaries of Mozambique, Zimbabwe and South Africa – surveys show increased timber extraction from community and national forests to make coffins. Firewood is also being cut to cook food and provide warmth at a seemingly endless succession of funerals. Finally such events keep working adults away from their jobs, lowering productivity and increasing poverty.

Governance plays a crucial role in the long-term fight against environmental degradation, particularly when it is brought on by poverty and ill health. Governments must start by engaging participatory decision-making processes at all levels. They must then deliver good quality public services, especially health (including voluntary counselling and test-

ing) and education (including access to information about nutrition and Aids).

In many developing countries reasonable, profitable use of forests and coastal resources will require increasing local organisational and enterprise-management capacity to stem corruption and favour transparent, collaborative participation by local communities. A number of specific actions may be required. The level of environmental advocacy can be increased and robust policies adopted to promote gender equality. Laws must be framed and enforced guaranteeing women's right to land and property inheritance. District and local authorities need greater capacity to set priorities and manage budgets, particularly for Aids activities. Lastly it is urgent to improve access to and control of natural resources by communities and other local organizations.

Sources: The Population, Equity, Aids, and Coastal Ecosystems Project (PEACE) implemented by the University of Rhode Island/Coastal Resources Centre, Tanzania Coastal Resource Management Project (TCMP), Population Reference Bureau (PRB), and IUCN; and the Wildlife and Environmental Society of Malawi.



Armenian artwork depicting the Millennium Development Goals (UNDP Armenia)

Maximising returns on development investment

By **Diarmid Campbell-Lendrum**, Heli secretariat, World Health Organisation; **Hamed Bakir**, WHO Regional Centre for Environmental Health Activities, Amman, Jordan; and **Pierre Quiblier**, Heli secretariat, UNEP

Even while his country was still recovering from the impact of the devastating tsunami that hit southeast Asia late last year, Maumoon Abdul Gayoom, President of the Maldives, urged the international public health community to think ahead about less apparent but equally critical long term threats to health and well-being.

Opening the World Health Assembly in May 2005, President Gayoom noted that while natural disasters and global pandemics such as Aids grab headlines, local forms of environmental pollution, as well as global environmental changes, can also have profound impacts on health. In the case of Small Island States like the Maldives, trends such as climate change, can threaten the “very survival of the nation”.

“Rising temperatures could kill the coral which forms the basis of our habitat. We would indeed suffer economic ruin if corals die, but it would also starve the nation of essential supplies of fish which forms part of the staple. Moreover, global warming would also alter the epidemiological pattern, with an increase in vector-borne diseases and the emergence of more virulent forms of tropical diseases. And perhaps what is worse, as the seas rise, the water aquifers and the soil are likely to be poisoned by excess salination,” he told an Assembly focused on tackling the most urgent threats to health.

“The links between the environment and health show that addressing the challenges in both areas calls for a global partnership, where everyone becomes part of the solution and none a problem... at the end of the day, prevention is still

better than cure. And let that be our goal in promoting environmental health,” he added.

There are some grounds for hope; partnerships are beginning to be formed that view environment and health as integrally linked, and consider the threats posed by emerging issues, such as global environmental change, in an integrated manner. The recent Millennium Ecosystem Assessment, carried out by the UN and specialised agencies from climate stabilisation to food production, underpin all aspects of human health and well-being. The report stresses that the Earth’s natural resources are being strained to capacity and the harmful consequences of this degradation to human health are already being felt. Impacts could grow significantly worse over the next 50 years.

The assessment’s health synthesis report notes, for example, that at least five out of the top 10 infectious disease killers globally, from malaria to dengue to diarrhoea, are closely related to environmental factors, such as water availability and climate conditions. While such relationships are well established at a local level, the report also shows how global changes, such as the widespread degradation of freshwater supplies, and the fact that global temperatures are increasing at their fastest rates for at least the last 10,000 years can impact on local effects. It documents interconnections too, pointing out how actions to improve certain aspects of human well-being can have a wide range of important consequences, including for health. For example, it is becoming clear that certain consumption habits probably helped diseases such as Sars to cross over to human populations. Similarly agricultural practices that create new ecological interactions, have increased the risk of avian influenza becoming a global pandemic, with potentially devastating consequences.

Demonstrating a threat does not provide a solution in itself. As many health risks

arise from complex, competing needs, they cannot always be solved by simple fixes. For example, irrigation schemes can increase agricultural production and local incomes, but can also provide habitats for mosquitoes and snails, enhancing transmission of diseases such as malaria and bilharzia (schistosomiasis). These kinds of situation require integrated decision-making, taking full account of the services that the environment provides to all aspects of well-being, from health, to security and personal wealth.

The need for such cross-sectoral solutions is also increasingly recognised at an international level. The final report of the United Nations Millennium Project, “Investing in Development,” outlines a practical plan for allowing the poorest countries to achieve the Millennium Development Goals by 2015. Underlining the vital link between the environment and defeating poverty, it notes that interventions that are implemented outside the health sector, such as improving the quantity and quality of water, or environmental conditions, provide the double benefit of addressing the MDGs on child mortality and environmental sustainability.

There are now some examples of an integrated approach to health, environment and development: the Canadian International Development Research Centre is promoting an Ecohealth approach; and a range of impact assessment procedures are being used in large-scale, donor-driven developments. But they are few and far between. Intersectoral actions are sometimes said to be “Blessed by everyone, and funded by no-one”. The two most effective ways of convincing a sceptical decision-maker are, first, to demonstrate that integration makes sound economic sense, and second, to quote case studies in which a cross-sectoral partnership has actually worked on the ground, providing more convincing recommendations.

Recent work within the joint UNEP/WHO Health and Environment Linkages Initiative has shown that such partnerships can work, and that efficient integrated management of ecosystem services can show a big return on investment. One country assessment under this initiative is addressing water demand management in Jordan. It is one of the world’s most water-stressed countries, and the water it does have comes from underground aquifers with finite reserves. At the same time water-efficiency in farming is low, and approximately 30% of the domestic supply is lost through leakages. Although the entire population is connected to a high quality piped water supply, many poorer households use very little water each day. The net result is wastage of a precious resource, with far-reaching implications. Along with the direct economic cost of lost water, rapid water extraction requires imported energy for pumping and brings forward the date at which aquifers will dry up. An initial assessment has shown that households with low levels of domestic water consumption also tend to have higher diarrhoea rates (a complete analysis of this relationship is still under way).

The WHO Centre for Environmental Health Activities in Amman formed a national team of academic researchers along with representatives of the national Ministries of Health, Water, and Environment to examine the costs and benefits of a series of government proposals for investment in water efficiency. The assessment identified a wide range of benefits, but assigned money value to only a few of these: economic gains from reduced water loss, health gains from fewer cases of diarrhoea, and environmental benefits in terms of reduced costs of water-pumping. A series of conservative assumptions were also made: a high discount rate on the investment (decreasing the apparent value of future benefits), and ignoring the probability that both water and energy costs may well increase in the future.

Even this “complete cost, incomplete benefit” analysis suggests that water efficiency measures are a good deal. Each dollar invested towards reaching the most ambitious water efficiency target should bring a return of \$1.71 to \$1.84 from the economic, environmental and health benefits examined, with the precise value depending on the degree to which it is assumed that increasing domestic water supply has a direct causal effect on reducing diarrhoea rates. A more complete account of benefits would make the investments look even more attractive; but this group reckoned they could already conclude that investing in water efficiency was money well spent.

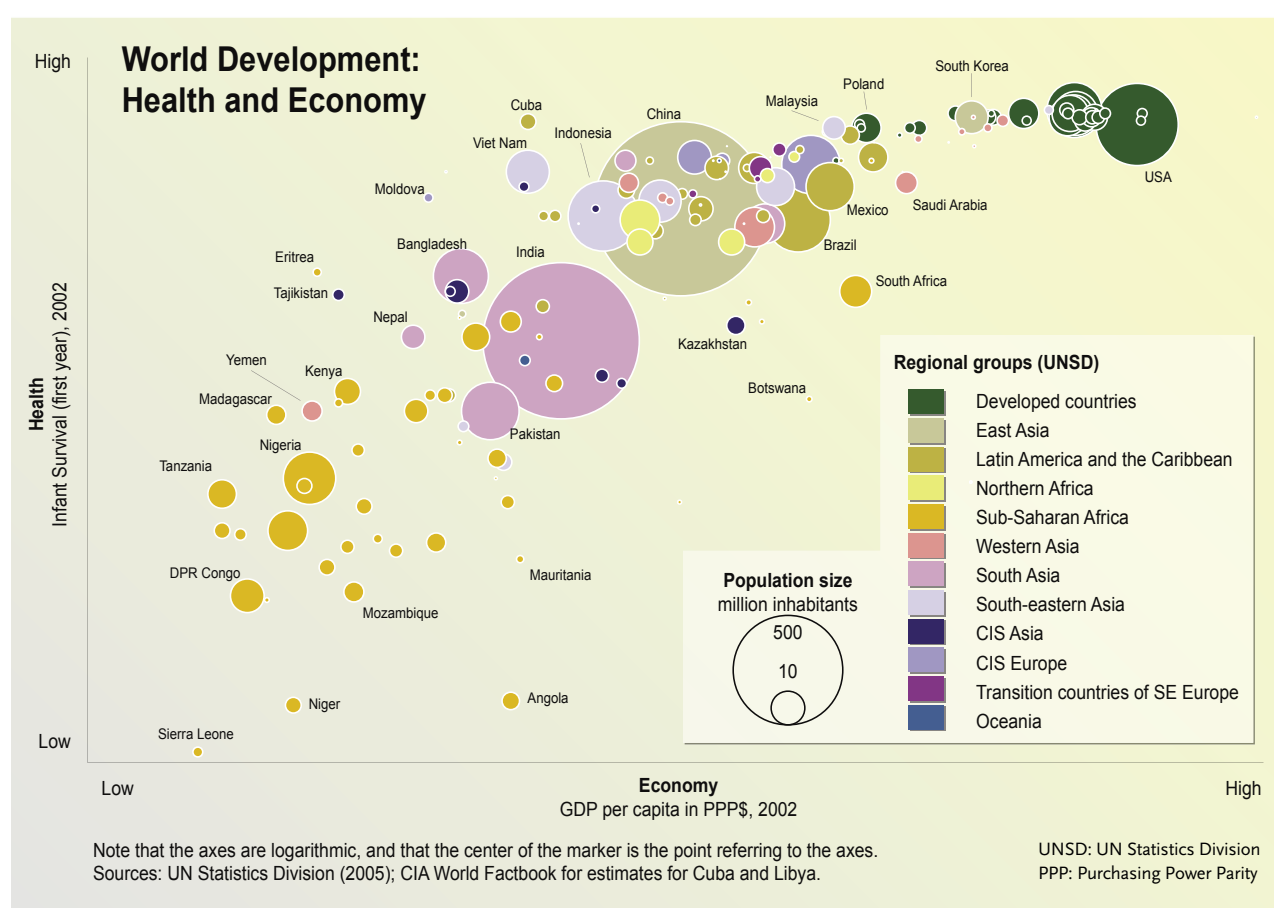
The intersectoral group recommended that the Government adopt the most ambitious of its options for improving water efficiency, and that it should consider accelerating implementation to maximise the return on its investment. They also went beyond the economic assessment, proposing that measures be introduced to ensure that water savings are directed to the poorest populations, in order to reap the greatest benefits.

Working across sectors is notoriously difficult, and requires flexibility and understanding from all concerned. But the fact that all of the major government agencies, along with other actors, were involved from the beginning of the process, increased the scope and quality of the assessment. The fact too that they shared data, and were able to agree a set of consensus recommendations, strengthens the case for coherent and cost-effective government action. In the Jordanian experience, all the partners involved are now convinced that it is only by addressing health and environment issues together that the real value of each can be fully appreciated. Through their efforts and results they demonstrate that, in the long run, investing time and understanding to build partnerships can also pay dividends.

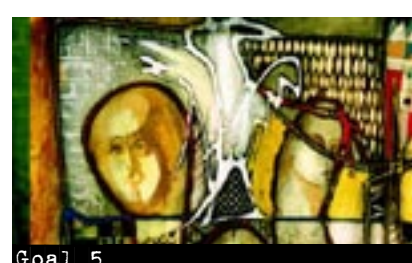
Facts and figures

- Everyday HIV/Aids kills 6,000 people and another 8,200 people are infected with this deadly virus¹.
- In just two years between 2001 and 2003 the global number of children orphaned due to Aids has risen from 11.5 million to 15 million – the vast majority in Africa².
- Tuberculosis is the leading Aids-related killer and in some parts of Africa, 75 percent of people with HIV also have Tuberculosis³.
- Each year, approximately 300 to 500 million people are infected with malaria. Approximately three million people die as a result³.
- In Africa, malaria is the leading cause of death for children under five years, causing at least 20 per cent of all deaths. Children recovering from malaria infections may be left with significant mental and physical disability³.
- Malaria was the fifth most common cause of death due to communicable diseases in 1999 after respiratory infections, HIV and Aids, diarrhoea and tuberculosis. It kills between 1.1 and 2.7 million people each year, of whom about 1 million are children under 5 years in sub-Saharan Africa³.
- More than 50 percent of Africans suffer from water-related diseases such as cholera and infant diarrhoea¹.

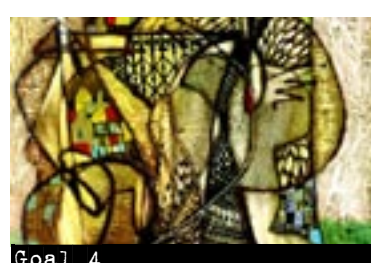
1. UN Millennium Project, 2005.
2. Orphans: Children On The Brink, 2004.
3. DFID Factsheet on Malaria, 2004.



By looking more closely at the regions we can see that the situation in the world is quite diverse. This chart portrays the status of development with two important parameters, health and economy. Regions, like Sub-Saharan Africa or the Commonwealth of Independent States (former Soviet Republics) are quite spread out widely in the diagram, in both dimensions. Worth noting is the countries far from the imaginary line towards the top right corner. Cuba and Vietnam, for instance, have high values for infant mortality, but the relatively closed economies land them in the middle on economy. Botswana, on the other hand, have a rather good economical situation, but is lacking in health (due to HIV/Aids among other things) compared to other countries with the same GDP per capita.



Goal 5



Goal 4

Goal 5: Improve maternal health • Reduce by three quarters the maternal mortality ratio.

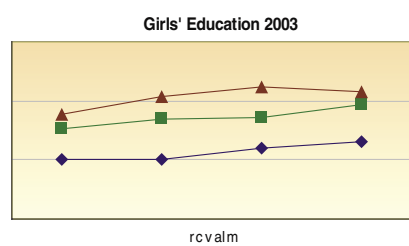
Goal 4: Reduce child mortality • Reduce by two thirds the mortality rate among children under five.

The third MDG seeks to promote gender equality and empower women. It aims to “eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education not later than 2015.” Implicit to this target is the belief that poverty cannot be effectively addressed without successful achievement of the education

goal. Further it highlights the importance of women’s education for the project’s success. Can any of the goals be reached without progress towards gender equality and the empowerment of women? Today, in the middle of 2005, progress in education shows the world still has a long way to go to implement the MDG goal on gender equality.

So much yet to learn about girls’ education

By **Eileen Kane**, who established the first Department of Anthropology in Ireland and chaired the Irish Aid advisory program. Recently she has worked almost exclusively on issues related to girls’ education for organisations such as the World Bank, UNICEF, USAID and various NGOs



Oh, yes, another diagram on girls’ education. Not very clear, is it? I suppose that top line is boys’ enrolment in school and the bottom is girls’. Or maybe that bottom line is sub-Saharan Africa? Or is it girls’ enrolment in sub-Saharan Africa? One thing is for sure, whatever it is, the bottom line is probably girls. Or Africa. Poor rural girls in Africa, maybe. Yes. Then that middle line would have to be...

Actually, this is an imaginary diagram, designed to provoke thought among development practitioners – policymakers, managers, educators and researchers. Yes, it is on girls’ education, but a different aspect – “How Much Evidence Do We Have About Girls’ Education – Benefits, Challenges and Strategies?”. The top line suggests how much we know about benefits. The middle one reflects our understanding of the obstacles. And the bottom line reveals how little we know about the most important aspect: what we should do to address the obstacles and gain the benefits, particularly in Africa, where the biggest challenges lie.

So while the diagram is hypothetical, the conclusion, is real’ – we have a lot of compelling evidence about benefits and obstacles, but not nearly enough about what really works in various contexts and why, so that we can reach more girls effectively.

Why educate girls? Girls’ education increases economic growth; reduces child mortality and malnutrition; brings improved health to women and those they care for; delays the age of first marriage; lowers fertility rates; increases women’s domestic leverage; improves functioning in the wage labour force; and enhances family economic strategies.

There are broader outcomes, as well: if developing countries improve their economies but maintain current rates of population growth, the consequences for

increased environmental degradation will be enormous. Since women usually manage food, water, fuel, intensive agriculture and birth spacing, a woman with at least six years of education (the minimum to maintain literacy) will be a critical actor in population control, farm productivity, livelihood diversity, resource conservation and use of effective technologies. Indeed, the World Bank has concluded that improving female participation in education leads to one of the highest returns in environmental protection. Another beneficiary is good governance: girls’ education leads to greater political participation of women, and recent research shows that governments are less corrupt when women are more active in politics or the labour force. For example, controlling for other factors, corruption falls as the proportion of parliamentary seats held by women increases; as does the quality of various social protections².

Even when various studies define these effects differently, findings on the measurable benefits of girls’ education hold true³. The causes are clear. For example, improving girls’ education is the cause of economic growth, not the result. Also, each of the effects mentioned here could be achieved in other ways, but only girls’ education achieves them all⁴. In fact, evidence of the development benefits of female education is “so persuasive” according to an earlier World Bank study, that “new, econometric studies of the impacts ... on development are probably worthwhile only in extraordinary circumstances”⁵.

In 2000, 189 countries adopted eight Millennium Development Goals, including these:

- “Achieve universal primary education: ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of ordinary schooling.”

- “Promote gender equality and empower women: eliminate gender disparity in primary and secondary education preferably by 2005 and in all levels of education no later than 2015.”

If the MDGs for education were met, the number of births per woman would be reduced by 0.6. Child mortality would also be reduced: not only does one more year of female education have the impact of reducing child mortality by 18.1 per thousand, but increasing the ratio of female to male educational attainment by 10% would reduce the under-five mortality

rate by 14.2 per thousand. If the goals were met, this translates into saving the lives of 35,000 children a year in Mali alone⁶.

Yet today 60% of the children not in primary school are girls. Will the goals be met? At the current rate of progress, all the international agencies agree the answer is no. In terms of reaching universal primary completion by 2015, for example, which by definition includes completion by girls, 70% of the seventy-three low-income countries for which data are available are “off track” or “seriously off track” according to World Bank analysis. Within sub-Saharan Africa, the figure is closer to 85%. In fact, if the current rates of progress for completion are anything to go by, universal primary completion cannot be reached until well beyond 2050⁷. Part of the reason is girls: they and other disadvantaged children will be the last to be included and the hardest to reach.

Recently, researchers have looked at the effects of girls’ education from yet another angle, asking what happens if countries do not improve girls’ participation in education. The stark statement that “gender inequality in education is bad for economic growth”⁸ highlights the issue. Research shows that the national economic and social costs of not educating girls and not achieving gender parity in education are high; and higher, in fact, for Africa than for any other region. Some of the negative consequences will be evident by 2005, and will increase thereafter. In addition four of the other MDGs – improvements in child mortality, maternal health, reduction of disease including HIV/Aids, and environmental stability will not be met or will be severely hindered without progress in girls’ education.

Fortunately, the other side of the coin is that countries that are “seriously off track” in terms of reaching universal primary education, or have declining gender parities have most to benefit, in terms of economic growth, by getting their girls in school and expanding girls’ education faster, particularly at primary level where investment will bring higher rates of return⁹.

The evidence is persuasive; the obstacles, not outlined here, are well known, so what is the problem? It is not simply money or lack of commitment. We just have very little good information on what actually works to get girls into school and educate them. In fact when Kane and Yoder¹⁰ looked at more than 2,500 studies relating to girls’ education, only 250

dealt with strategies, and of these, only 32 contained enough information to draw conclusions of any kind. Nine years later, we are not much better off.

Resources are scarce and mistakes are going to be costly, so let us look at some of the things that work.

Girls and other disadvantaged groups are particularly vulnerable to the effects of generic problems of poverty, low GDP, HIV/Aids, poor education resource mobilisation and management, and poor quality of education. These cannot be compensated for by focusing only on the education sector and on girls. Improving employment and labour policies, out-of-home childcare, labour saving technologies, transport, and HIV/Aids communication and support programs are all critical.

Most successful approaches consist of a flexible package of interventions that respond to a constant analytical process of “thinking through” challenges and change. Projects that have used this approach to iterative design have produced dramatic rises in girls’ enrolment and persistence

Some strategies are “gender-neutral”, but have greater benefits for girls than boys: examples include expanding the supply of places, reducing distance, improving quality, lowering the age of enrolment, automatic promotion, open admissions, reducing costs, providing early childhood development programs, and making school scheduling flexible. Research shows that interventions that take special account of girls have often been shown to help boys, too.

Research shows that girls respond particularly well to improvements in quality, such as alternative programmes outside the formal school system; first language/local language instruction in the early years of schooling; local/female teachers, with positive relationships shown between the presence of female teachers and girls’ participation at primary level; and single sex schools for improved achievement and for meeting cultural concerns.

Projects that reduce household costs of school attendance by abolishing fees, providing scholarships and stipends, assisting with transport costs and materials, and recognising opportunity costs have had well-documented positive impacts on access and retention in a range of countries. This may be one of the major

policy areas where benefits can be seen in the short term.

Distance affects both sexes, as research in much of Central and Western Africa shows, but various studies also show that household demand for girls’ education is generally more sensitive to problems of distance than is boys’.

Most community “participation” is in fact financial. Real participation, ranging from identifying issues and potential approaches, to the rarest forms, e.g., participation in management, teacher supervision and curriculum development, has helped not only to create relevant local action but also to contribute to more responsive national planning.

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Facts and figures

- Above 80 percent of farmers in Africa are women¹.
- More than 40 percent of women in Africa do not have access to basic education¹.
- Educated mothers immunize their children 50 percent more often than mothers who are not educated¹.
- Aids spreads twice as quickly among uneducated girls than among girls that have even some schooling¹.
- The children of a woman with five years of primary school education have a survival rate 40 percent higher than children of women with no education¹.
- Women play a major role in food production in many parts of those areas, particularly in Africa. In Sudan, women make up 30% of the labor force in food production, 48% in Burkina-Faso and 80% in Congo².
- In many parts of the world, women do not have the same land ownership rights as men do. For example, fewer than 1 in 10 female farmers in India, Nepal, and Thailand own land².
- Women of all developing countries spend between 2 and 9 hours each day collecting fuel and fodder².
- Women hold less than 13 per cent of the world’s parliamentary seats, and less than 9 percent of seats in the least developed countries³.

1. UN Millennium project, 2005. Fast Facts: The Faces of Poverty.
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A woman in Nyakomba, Zimbabwe, has cut a tree to have wood for making a fire in her kitchen to cook food for her family. There is no alternative source of energy so deforestation is the result. Each day the woman has to walk more far in order to find trees. 27 AUGUST 2001 – © Michel Szulc-Krzyzanowski / The Image Works

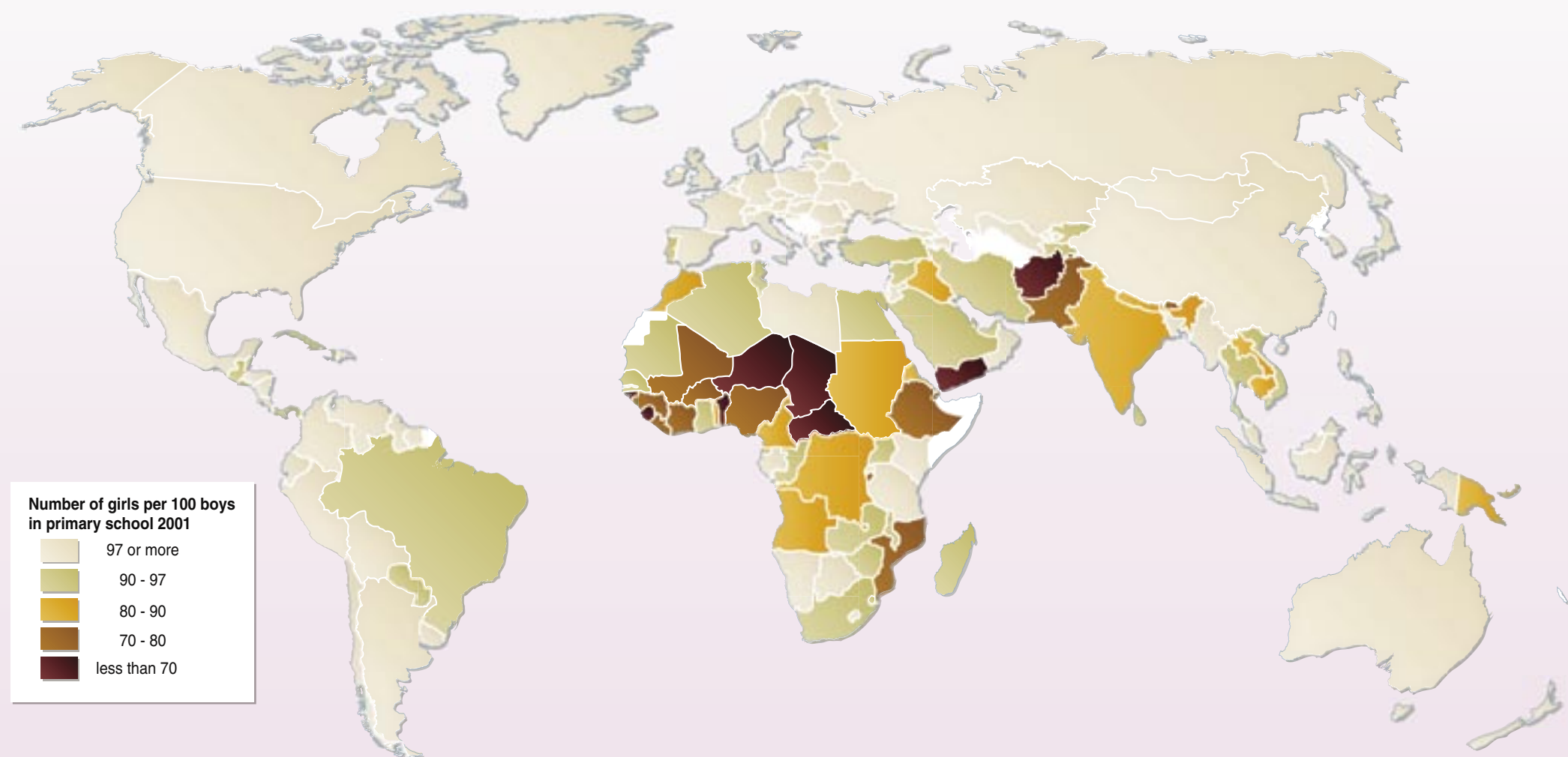
“Advancing gender equality, through reversing the various social and economic handicaps that make women voiceless and powerless, may also be one of the best ways of saving the environment ... The voice of women is critically important for the world’s future – not just for women’s future.”

Amartya Sen, 1998

“The women of Green Belt Movement have learnt about the causes and the symptoms of environmental degradation. They have begun to appreciate that they, rather than their government, ought to be custodians of the environment.”

Wangari Maathai, 1994

Gender equality and empowerment of women: Eliminate differences in education



Note: The indicator is "Ratio of girls gross enrolment ratios to boys gross enrolment ratios" (indicator 9.) Countries with no figure for 2001 have been approximated with the next latest available year.
Source: UN Millennium Development Goal Indicators Database (UNESCO). <http://unstats.un.org/unsd/mi/> (Accessed August 2005)

No hope without gender equality

By **Irene Dankelman**, Coordinator of the Sustainable Development Programme of the University of Nijmegen, and Senior Advisor Sustainable Development of Women’s Environment and Development Organisation in New York, USA

The daily lives of millions of women and men clearly demonstrate that gender equality, environmental sustainability and poverty eradication are closely linked. This has major implications for policies and actions. Gender is a determining factor in poverty-environment linkages. Gender inequalities, environmental deterioration and deepening poverty are mutually self-reinforcing. Conversely, improvements in any one of these areas can leverage improvements in the other two, thus enhancing livelihoods, protecting health, and reducing vulnerability.

Since the dawn of history, women have contributed essentially to the conservation, use and management of natural resources. Around the world they play distinct roles from men: managing land and biodiversity, collecting water, fuel and fodder, as well as other natural resources. In so doing they contribute time, energy and skills, not to mention their personal vision, to family and community development. Their extensive experiences make them an invaluable source of knowledge and expertise on environmental management.

Indigenous women draw on a complex knowledge base. They are familiar with ecosystems, geographic features, climate, weather, and tides. They understand the ecological succession, habitats and life

cycles of resource species. They have detailed knowledge of all kinds of plants and animals, their habitat requirements, means of reproduction, nutritive values, as well as knowledge of various types of tinder and fuel, foods, and medicinal herbs. They have also acquired all manner of survival skills, as well as general first aid, midwifery and childcare. Theirs too is cultural knowledge and understanding – including important plants and animals – rules relating to resources use, sharing and acquiring knowledge in culturally appropriate ways².

As Ruth Lilongula from the Solomon Islands said: “Biodiversity is the very core of our existence within our communities. You cannot say how many dollars this is worth because it is our culture and our survival. In this context biodiversity is invaluable ... We value our surroundings as our identity, as who we are, and our inheritance that is given to us ... Our environment is many things, a classroom, a pharmacy and a supermarket”³.

On the other hand, when the environment is degraded women and girls suffer first. A study in the Sindhuli district of Nepal, undertaken in 1993-94 by ActionAid, clearly demonstrates this point. Environmental degradation has compounded economic stress within households and on scarce resources. This means that pressure, not only on women, but also on children, to do more work and at an earlier age is increasing. Girls do the hardest work, have the least to say and the fewest education options. “My parents want to make their son a BA [graduate]. But order me to get fodder and

fuelwood every day” (girls song, Nepal). To promote girls’ school enrolment in fragile ecosystems, environmental quality is a precondition⁴.

Similar linkages are apparent in access to safe drinking water and gender equality. Women are the main collectors and users of water for household uses worldwide. The availability of clean water consequently reduces water collection burdens, in particular the care burden for mothers. The incidence of water-borne diseases is reduced. Commonly entitlement to water is linked to land, but land tenure laws and legal systems show major gender disparities in ownership and rights, distorting women’s access to environmental assets in many parts of the world. There is also an increased incidence of physical and sexual assault when women have to walk long distances to remote areas for water and sanitation, particularly in situations of conflict and war. Access to water and sanitation closer to home, would limit women’s vulnerability.

Global environmental change jeopardises environmentally based livelihood strategies. Climate change is predicted to accentuate the gaps between the world’s rich and poor, as people living in poverty are more vulnerable. The effects of climate change are very likely to effect poor people disproportionately and to be gender-differentiated. Perspectives, responses and impacts surrounding disaster events vary for men and women. They have different sets of responsibilities, vulnerabilities, unequal capabilities and opportunities for adjustment. Women and men experience environmental change differently. The

effects of the tsunami of 26 December 2004 showed that clearly.

However, as in many other environmental and sustainable development negotiations and agreements, gender aspects are also still poorly represented in the climate change negotiations.

Women have organised themselves to protect the environment and promote environmental justice: in their communities, in national organisations, in international networks, working on issues such as biodiversity, land rights, access to water and sanitation, sustainable energy and climate change. All over the world they are major agents for environmental action, prompting others to work on the basis of the linkages of environmental sustainability, gender equality and poverty reduction.

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Goal 3



Goal 2

Eradicating extreme poverty and hunger, which currently affects 1.1 billion people, is an ambitious goal. These people have to live on less than \$1 a day and their numbers are highest in Asia, whereas they represent the largest share, almost half, of the total population in Africa. Poverty kills more than 8 million people every year. So what must be done to achieve this goal? It is well known that poor

people rely disproportionately on the environment to meet their daily needs. Sound environmental management helps to secure the ability of poor people to meet these needs. Extreme poverty, degradation of natural resources and global environmental change combine in a deadly downward spiral capable of undermining all development efforts.

Pro-poor growth or Boom and Bust?

By **Paul Steele**, consultant for Department for International Development, UK (DFID)

Many low-income countries, particularly in Africa, need to boost economic growth by as much as 7% to achieve the MDGs. Natural resources play an important role in economic growth in low income and rural areas. They are often the main wealth available. Natural resources such as forests, fisheries, wildlife tourism and groundwater already contribute to the economic growth and exports of many developing countries.

Forests provide several developing countries with annual export revenue exceeding \$100m, accounting for more than 15% of exports. In several cases forestry is vital to the economy, representing 25% of tax revenue in Cameroon, for instance. Forest-based enterprises employ some 17 million people, with a further 30 million in the informal sector. Almost one third of the world's population – 1.6 billion people – depends on forests for its livelihood. Natural resources are also particularly important for local tax revenues in poor but resource-rich areas. In some developing countries wildlife tourism is an important part of travel industry revenue.

Fisheries yield annual export revenue in excess of \$100m in several poor countries, bringing in more than 20%

of export earnings. More than 33 million people work in fisheries in developing countries – with the vast majority in Asia – and the industry covers more than 20% of government budgets in several west African countries (e.g. Guinea Bissau and Mauritania).

However policies to maximise the economic benefits of forestry, fishery and wildlife tourism are often not designed in a way that also benefits the poor. Growth is pro-poor as long as the poor benefit from growth. This may mean a growth strategy deliberately targeting the poor is needed, so low-income growth is greater than overall growth.

Natural resources provide a safety net that prevents poor people becoming poorer - but this is not the same as durably raising the poor above the poverty line. Indeed it has been argued that in the long run this type of dependence can leave the poor in a particularly dangerous poverty trap.

Natural resources are often remote, and property rights and regulations unclear. Furthermore little is done to uphold the institutional rights of the poor. This situation can easily lead to market failures, with the poor bearing the cost of any problems. They may even lose traditional rights to important life supporting ecosystems. Such conditions are

also an incentive for “boom and bust” strategies, leading to over-exploitation. In some cases the industrial use of natural resources, far from earning revenue, may be heavily subsidised by the state. Subsidies go to state firms running at a loss (typically Ghana's timber industry) and government joint ventures (tuna processing in the Pacific). Such practices may also result in massive tax write-offs (Indonesia's timber industry) or large-scale illegal logging (Cambodia). This undermines the genuine economic benefits of such activities. Examples include Ghana's forests (in 1960-80), the fishing industry in Peru and Chile (1970s), and groundwater in western India today.

Governments must decide whether to promote small and medium scale enterprises which are more likely to benefit the poor, or larger operators which may earn higher returns – but can in some cases impact negatively on the poor. Natural resources are often the focus of conflicting aims. A political solution must be found to reconcile calls for exports, revenue, employment, livelihoods and enterprise development. It is clearly impossible to achieve a whole range of pro-poor benefits all at the same time. In many locations, for example, there are clashes between subsistence fishers and commercial trawlers. West Africa, particularly Mauritania and Guinea Bissau, has long attracted fleets from far

afield, notably the former Soviet Union, the European Union and Asia'.

Wealth from natural resources can, in the medium term, raise people above the poverty line, thanks to exports and state and private sector investment in pro-poor initiatives – informal and formal employment and activities based on natural resources of particular benefit to the poor, giving them technology, capital, and market access.

The commercial exploitation of natural resources may produce growth if industry is not subsidised. For example Cameroon's forests are harvested by large international firms, while Namibia has developed a domestic commercial fishing industry.

Large-scale commercial exploitation can do more to help the poor, if it encourages transparent spending of revenue and links with local business. It can also provide a more positive business environment by issuing resource rights, streamlining regulations, improving access to markets and technical support, all of which helps to promote small and medium scale enterprise based on the use of natural resources. Examples of this trend may be found in timber revenues in Cameroon, certain mining projects in Latin America and the privatisation of accommodation in South Africa's parks.

To avoid a boom and bust approach to the extraction of natural riches – which is bad for poverty reduction and saps the roots of the economy – it is essential to diversify away from natural resource-based growth. At both national and domestic level natural resource profits must be well invested. So there is an apparent paradox that these profits must be used to avoid dependence on them in the future. Timing is crucial to shift from extraction to resource management and diversified income sources before it is too late and the resource collapses.

Coalitions for change are needed to drive pro-poor natural resource growth. There are many examples of such coalitions which have included civil society, private sector and international donors. Botswana is reinvesting its mineral wealth. Brazil is setting up reserves in its forests. In Kerala (India) subsistence fishers have gained more extensive rights. Bangladesh has recently seen pressure to certify shrimp farming and in western India movements have come into existence to demand the recharging of groundwater. Without such initiatives resources that could have helped achieve the MDGs would be wasted.

1. Fisheries Centre, University of British Columbia, 2005, Sea Around Us project, a five-year retrospective 1999-2004.

“The earth was not given to us by our parents, it was loaned to us by our children.”

Kenyan proverb

“Livestock: a hidden insurance for sustainable livelihoods.”

Principal Environment Inspector, Uganda

“Loss of genetic diversity in agriculture – silent, rapid, inexorable – is leading us to a rendezvous with extinction – to the doorstep of hunger on a scale we refuse to imagine”

Cary Fowler and Pat Mooney

Bringing forest livelihoods to the city

It is not surprising that poor families in rural forested areas would draw upon the nearby trees for income from the use or sale of nontimber forest products like wild fruits, construction materials, or medicinals. but the economic value of these forest products can be captured by the urban poor as well, particularly those who have recently migrated to the city.

A study conducted between 1996 and 1999 in the outskirts of Riberalta, a rapidly growing city in northern Bolivia, showed that households gain a significant proportion of their income from the collection and processing of Brazil nuts and palm hearts. These peri-urban neighborhoods are peopled largely by poor families, many of them recent immigrants from rural areas. The study found that households benefited from nontimber forest products in two ways: some family members (men, mainly) go out to the forest for a few months each year to collect Brazil nuts and palm

hearts to sell to processors; other family members (mostly women) work in the processing plants in and around Riberalta where Brazil nuts are graded, shelled, washed, and packaged.

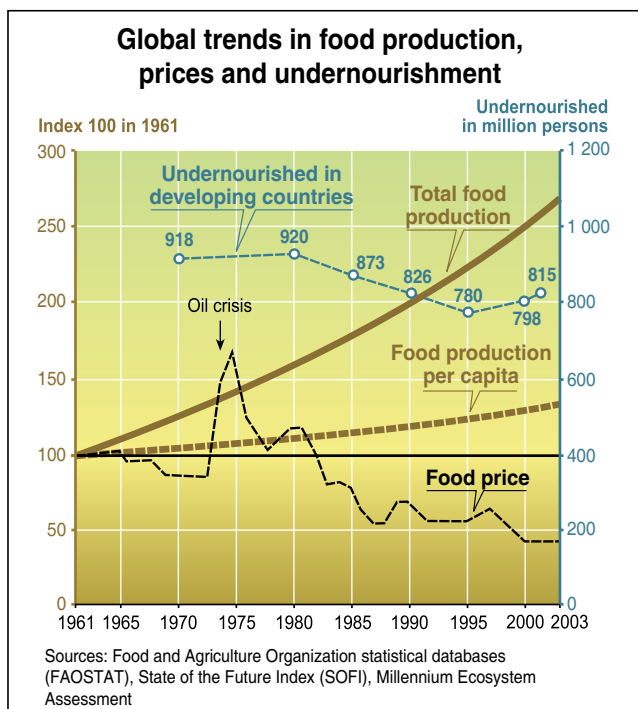
Nearly 60 percent of the surveyed households participated in one form or another in the Brazil nut or palm heart industries. The poorest income group was the most dependent on nontimber forest products income, getting 47 percent of their income from it. Even the better-off families derived more than a quarter of their income from nontimber forest products.

Many recent immigrants were driven to the city in search of employment after the decline of the Bolivian rubber industry in the late 1980s. New arrivals found that their lack of education and formal training, as well as social stigmas, acted as barriers to entry into most sections of the urban labor force. For these

migrants, as well as other marginalized sectors of the population, the Brazil nut industry serves as the largest employer because of its high demand for unskilled labor.

For example, migrants with only primary school education or less relied on nontimber forest products for 60 percent of their income. The dependence of the urban poor on forest-related income highlights the rural-urban continuum that exists in many nations, where environmental income continues to play an important role in the income profile of poor households even when these families leave the countryside.

Source: World Resources 2005: The Wealth of the Poor – Managing Ecosystems to Fight Poverty. Washington, DC: WRI. World Resources Institute (WRI) in collaboration with United Nations Development Programme, United Nations Environment Programme, and World Bank. 2005.



World food production have steadily increased through the last forty years, while food prices have decreased, with the exception for the mid-seventies oil crisis. Food production more than doubled (160%) from 1961 to 2003. At the same time the number of undernourished have increased since 1995, indicating huge differences in access and distribution of food.



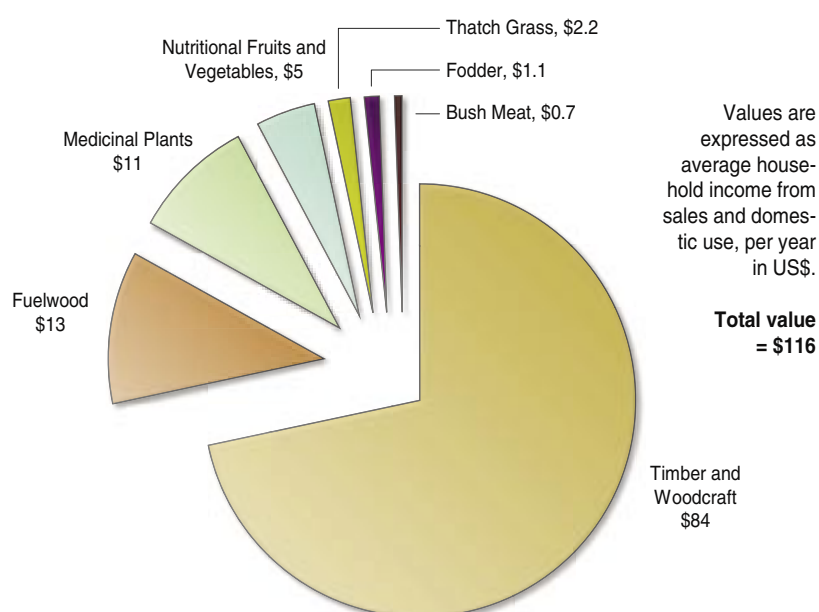
Facts and figures

- Two thirds of the world's hungry people live in Asia, but Southern Africa has the highest proportion of people experiencing hunger¹.
- In the Cote D'Ivoire, three companies – all based in G8 countries – control 95 per cent of cocoa processing and 90 per cent of its cocoa export industry².
- In 1960, Africa was a net exporter of food; today the continent imports one-third of its grain³.
- 32 G8-based companies involved in the extraction of natural resources from the Democratic Republic of Congo were found to be in violation of the OECD Guidelines for Multinational Enterprises by a UN panel of experts in 2002³.
- Unilever's 2003 profits were 33% larger than Mozambique's entire GDP, while Wal-Mart's profits that year exceeded the GDP of Ghana and Mozambique combined³.
- One company, Monsanto, controls 52% of the maize seed in market in South Africa³.

1. Dfid factsheet on Hunger, 2004
 2. UN Millennium project Taskforce on Hunger, 2005
 3. ActionAid International on corporate responsibility

Money grows on trees:

Direct values from biological products through communal resource management (Ngitili) in the Bukombe district of Shinyanga Region, Tanzania



Values are expressed as average household income from sales and domestic use, per year in US\$. The total value of Ngitili services (including added value and non-species based services, such as pottery and water) represents **three quarters** of the total household income (\$1574) in this district.

Source: Monela, et al. 2004. A Study on the Social, Economic and Environmental Impacts of Forest Landscape Restoration in Shinyanga Region, Tanzania.

In an effort to bring back life to the degraded and over-used lands of the poor Shinyanga region of Tanzania, the government has brought back the traditional practice of Ngitili. Vegetation and trees are nurtured in enclosures and managed through the community. The practice initiative has been a success, through education, guidance and empowerment of local institutions. Not only are there benefits from the grown products, depicted in this figure, but also biodiversity has increased as well as livelihood security.

How important is environmental income?

Environmental income – the income generated from ecosystem goods and services – is a major constituent of the household incomes of the rural poor. It includes income from natural systems such as forests, grasslands, lakes, and marine waters. It also includes agricultural income – the output of agro-ecosystems. Researchers often make a distinction between agricultural income and what in this report we term “wild income” – that is, income from less manipulated natural systems like forests and fisheries. There is overlap between the two, as in the use of forest grasses for livestock forage, or forest leaf litter as a soil amendment or crop mulch.

Environmental income can be derived in several distinct ways. Income might accrue to households through direct use of ecosystem services, for instance, by consuming bushmeat and other wild foods, cutting fodder for livestock, using wood products in home construction, or eating produce grown in a home garden. Where markets exist, goods harvested from ecosystems, such as fish, herbs, or fuelwood, can be sold for cash or exchanged for services like school tuition. In addition, communities may charge stumpage fees for providing loggers access to timber, or they may collect taxes or levies from hunters or tourists, or royalties for access to minerals or the use of local species for pharmaceutical research. The income benefits of these public revenues may then be passed on to households in the form of public infrastructure like roads, schools, and clinics, or public services like agricultural extension programs. Ecosystems have several characteristics that make them attractive as a source of income. Environmental resources are renewable, widespread, and they are often found in common property areas where the poor can access them without owning the land. In addition, exploiting natural systems often can be done with little need for investment or expensive equipment, making the cost of entry low—an important consideration for poor families with limited assets.

The importance of environmental income to the poor can be judged at differ-

ent scales. At the global scale, estimates of nature's contribution to livelihoods are impressive. For example, the World Bank estimates that 90 percent of the world's 1.1 billion poor – those living on \$1 per day or less – depend on forests for at least some of their income. Agriculture is likewise essential to poor families. Small-scale agriculture – the kind the poor practice – accounts for more than 90 percent of Africa's agricultural production. In addition, over 600 million of the world's poor keep livestock, a critical cash asset for many. The Food and Agriculture Organization estimates that over 90 percent of the 15 million people working the world's coastal waters are small-scale fishers, most of them poor. That does not count the tens of millions of the poor who fish inland rivers, lakes, ponds, and even rice paddies.

At the national level, environmental income is also important, not only to the poor, but to national economies. Small-scale fisheries, for example, are not only common sources of income for the impoverished but are major contributors to the economies of many nations. In Asia small-scale fisheries contributed 25 percent of the total fisheries production of Malaysia, the Philippines, Thailand, and Taiwan for the decade ending in 1997. In West Africa the importance of small-scale fishing is greater still, constituting three-fourths of the region's total fish catch. In Indonesia, small-scale fishers are responsible for almost 95 percent of the total marine catch. At the same time, export revenues from small-scale agriculture are vital to many poor nations. In Mali, cotton grown by small-holder farmers generates 8 percent of the nation's GDP and 15 percent of all government revenues. Some 30 percent of all Malian households grow cotton on small plots, and it is second only to gold as the nation's most important export.

Source: World Resources 2005: The Wealth of the Poor – Managing Ecosystems to Fight Poverty. Washington, DC: WRI. World Resources Institute (WRI) in collaboration with United Nations Development Programme, United Nations Environment Programme, and World Bank. 2005.

Plenty of food – yet the poor are starving

By Jeevan Vasagar in Tahoua, Niger

In Tahoua market, there is no sign that times are hard. Instead, there are piles of red onions, bundles of glistening spinach, and pumpkins sliced into orange shards. There are plastic bags of rice, pasta and manioc flour, and the sound of butchers' knives whistling as they are sharpened before hacking apart joints of goat and beef.

A few minutes' drive from the market, along muddy streets filled with puddles of rainwater, there is the more familiar face of Niger. Under canvas tents, aid workers coax babies with spidery limbs to take sips of milk, or the smallest dabs of high-protein paste.

Wasted infants are wrapped in gold foil to keep them warm. There is the sound of children wailing, or coughing in machine-gun bursts.

“I cannot afford to buy millet in the market, so I have no food, and there is no milk to give my baby,” says Fatou, a mother cradling her son Alhasan. Though he is 12 months old he weighs just 3.3kg (around 7lbs).

Fatou, a slender, childlike young woman in a blue shawl, ate weeds to survive before her baby was admitted to a treatment centre run by the medical charity MSF.

This is the strange reality of Niger's hunger crisis. There is plenty of food, but children are dying because their parents cannot afford to buy it.

The starvation in Niger is not the inevitable consequence of poverty, or simply the fault of locusts or drought. It is also the result of a belief that the free market can solve the problems of one of the world's poorest countries.

The price of grain has skyrocketed; a 100kg bag of millet, the staple grain, costs around 8,000 to 12,000 West African francs (around £13) last year but now costs more than 22,000 francs (£25). According to Washington-based analysts the Famine Early Warning System Network (Fewsnet), drought and pests have only had a “modest impact” on grain production in Niger.

The last harvest was only 11% below the five-yearly average. Prices have been rising also because traders

in Niger have been exporting grain to wealthier neighbouring countries, including Nigeria and Ghana.

Niger, the second-poorest country in the world, relies heavily on donors such as the EU and France, which favour free-market solutions to African poverty. So the Niger government declined to hand out free food to the starving. Instead, it offered millet at subsidised prices. But the poorest could still not afford to buy.

At Tahoua market the traders are reluctant to talk about the hunger crisis affecting their countrymen as they spread their wares under thatched verandas jutting out from mud buildings. Snatches of the Qur'an from tinny tape players compete with Bollywood songs and the growl of lorries bringing sacks of rice and flour.

One man opens his left palm to display half a dozen tiny scorpions, a living advert for the herbal scorpion antidote he is selling in his other hand.

Omar Mahmoud, 18, who helps sell rice at his father's shop, blames the famine on drought: “I know there is hunger. It is because there wasn't enough rain. The price of millet has gone up because there wasn't enough rain last year.”

Last month around 2,000 protesters marched through the streets of the capital, Niamey, demanding free food. The government refused. The same month, G8 finance ministers agreed to write off the country's \$2bn (£1.3bn) debt.

“The appropriate response would have been to do free food distributions in the worst-affected areas,” said Johanne Sekenes, head of MSF's mission in Niger. “We are not speaking about free distribution to everybody, but to the most affected areas and the most vulnerable people.”

The UN, whose World Food Programme distributes emergency supplies in other hunger-stricken parts of Africa, also declined to distribute free food. The reason given was that interfering with the free market could disrupt Niger's development out of poverty.

“I think an emergency response should have started much earlier,” says Ms Sekenes. “Now we find ourselves in this serious nutritional crisis, with children under five who are suffering.”

Three weeks ago the Niger government, its foreign donor countries and the UN did a volte-face, jointly agreeing to allow the distribution of free food. Aid is now



being flown in from Europe and trucked from neighbouring countries.

A total of 3.6 million people live in the regions of Niger affected by the food crisis. According to the most reliable estimate, some 874,000 people now need free food to survive.

The food aid will arrive as children weakened by hunger face a new battle against disease. It is the rainy season in Niger, and the water helps spread diseases such as malaria and diarrhoea.

In the MSF treatment centre, a three-year-old girl called Aminata is suffering from a grotesque eye condition. Her eyeball is so swollen with fluid that it has popped out of her skull and bulges from her face. The doctors call it a retinal blastoma, the result of an untreated eye infection.

“The thing in her eye started off very small,” said Aminata's mother, Nisbou. “I did not have money for hospital, so I treated it with herbs, traditional medicine.”

The hunger crisis has struck communities which depend on a mix of subsistence farming and herding for their livelihoods. The stories told by the women in the treatment centre show that their plight began when locusts ate their crop and cattle fodder, but spiralled when the prices of food in the market shot out of reach.

In desperate times, adults can get by on the poorest of foods, weeds and the stubble of their crops, but mothers cannot make breastmilk on this diet and infants cannot eat weeds.

Amid the anxiety, there are unexpected moments of gaiety in the feeding centre. Asked her age, Nisbou, who is probably about 20, replied: “I am 100 years old.” She burst out laughing at her own joke, then looked weary again, and tucked her baby's deformed face under a lace shawl.

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Donor commitments

We fundamentally depend on natural ecosystems and services provided by watersheds and aquifers, coastal and marine ecosystems, forests, soils and the atmosphere. These resources and services continue to be threatened as our current patterns of consumption and production undermine the sustainability of the resource base upon which we depend.

Extreme poverty, degradation of natural resources and global environmental change combine in a vicious downward spiral that can undermine all development efforts and heighten potential threats of conflict and insecurity at all levels, including increased vulnerability in small island developing states. Investment in environmental and natural resource sustainability has been proven to yield very high returns in the long term political decision-making circles, however, has continued to give disproportionate priority to investments with short-term returns, without recognizing that such investments may not contribute to breaking out of the cycle of extreme poverty and environmental degradation in the long term.

The failure to operationalize the link between environmental sustainability and the Millennium Development Goals, in particular Goal 1, is evident in current poverty reduction strategies, national development plans and sub-national and sectoral development plans and policies in developing countries. Political pressures lead to the prioritization of investment with short-term and sectoral orientations in situations of extreme poverty. The severely constrained fiscal space in which many developing countries operate can also prevent the integration of environmental sustainability considerations into such plans and strategies.

In addition, investment-related information, particularly on financial and economic costs and benefits, remains extremely limited, thus further constraining environment-related investment.

The aspirations of the international community embodied in the Millennium Declaration and other summits over recent years, and endorsed by heads of State and Government, can only be met through a vastly increased effort. The international community should develop a costed, targeted and financed investment plan, and must revitalize commitment to improved governance and the rule of law.

Source: President's summary of the discussion by ministers and heads of delegations at the 23rd GC/GMEF of UNEP: contribution to the summit meeting of the General Assembly on the implementation of the Millennium Declaration

Is another world possible?

It has been said that the story about the Millennium Declaration and the MDGs is a tale about ending poverty in our time. Not that it will happen, but that it can happen. The aim is ambitious, as it should be and the world has made significant progress towards achieving many of the goals. But advances have been far from

uniform worldwide and for individual goals. There are huge disparities across and within countries. Inside many countries poverty is greatest in rural areas, though urban poverty is also widespread, growing and poorly reflected by conventional indicators. Are the goals merely targets set but never met?

Do global targets matter?

By **Jan Vandemoortele**. At the time of writing, Jan Vandemoortele was Director of the Poverty Group of the United Nations Development Programme. He is now UN Resident Co-ordinator in Pakistan. The views expressed do not necessarily reflect those of UNDP.

The first half of the 25-year period over which the millennium development goals are to be achieved can be summarised in three points: (a) global progress continued, (b) but it was slower than in the 1970s and 1980s, and (c) much of it bypassed the people and countries most in need. At mid-point, the world is not 'on track' for meeting the targets by 2015. Based on the most reliable indicators, the one-sentence summary of the various databases is that global progress should have been twice as fast since 1990.

After some false dawns and missed opportunities, it might be tempting to dismiss the millennium development goals as 'easily set but never met'. That would be a mistake. Global targets do make a difference, mostly by mobilising actors and advocates at all levels – global and local alike.

In 1966, for instance, the objective was set to eliminate smallpox, a target that was achieved in 1977. In the 1990s, an estimated 1 billion people gaining access to improved drinking water sources. The global use of ozone-depleting substances – such as CFC – has been reduced to one-tenth of the 1990 level. These examples show that remarkable progress can be achieved within relatively short periods of time.

Target-driven approaches that have made a difference share seven key elements for success.

First, they express development in an inspiring and measurable way. Fuzzily formulated targets are as unhelpful as they are un-measurable. Targets must be specific; they cannot rely on vague assumptions, faulty indicators or inaccurate data.

Second, they make the targets well known. Targets must address presidents, prime ministers, parliamentarians, preachers, primary school teachers, parents and the public – i.e. they must reach the kitchen table. The public's interest must be awakened and nurtured, its ambition stirred and expectations aroused. The media has

a critical role to play in keeping the eyes of the public on the prize.

Third, they tailor the targets to the national context. Global targets are meant to encourage all countries to strive for accelerated progress but, ultimately, their applicability can only be tested and judged against what is realistically achievable under country-specific circumstances. To be meaningful, target setting must be about adaptation, not about mindless adoption of global targets because targets must strike a judicious balance between ambition and realism. Tailoring is also essential for generating a sense of national ownership of the millennium development goals. A country might meet a target but miss the point due to inadequate ownership. At the same time, tailoring cannot become a euphemism for reneging on the political commitment to tackle human poverty in earnest.

Fourth, they formulate intermediate targets. Long-term goals will not guarantee immediate action because the deadline will not be on the watch of today's political leadership. They must be translated into targets to be achieved by the current

government. Therefore, they must be broken down into actionable propositions and specific reforms for the next 2-3 years; ranging from immunising children to iodising salt, training teachers and building schools, drilling boreholes and planting trees, treating Aids patients and distributing bed nets, enforcing laws against gender discrimination and child labour, abolishing user fees for basic social services, enlarging equitable taxation, restructuring budgetary spending in favour of the poor, and sequencing homegrown economic, financial and trade policies.

Fifth, they constantly monitor progress. Statistics not only document progress but also mobilise people and help design pro-poor policies based on hard evidence – not only on economic theory. Monitoring must use a few easy-to-grasp indicators. It cannot be confined to specialists and experts alone; it must inform political leaders, parliamentarians, journalists, NGO activists and the general public. Monitoring must go beyond averages and aggregates by unbundling progress for women and men; for rural and urban residents; for young and old; for poor and non-poor families; and for districts and provinces.

Sixth, they are championed by strong leadership. Political, religious and community leaders must drive the society towards the agreed target. Celebrities and public-private partnership – such as the Rotary Club against polio and the Carter Center against guinea worm – must constantly nag policymakers – both globally and locally – to stay focused on the target.

Finally, they emphasise that nothing speaks louder than financial commitments. Results do not come for free; targets do carry a price tag. While domestic resources will cover the bulk of the extra investment in human development, rich countries can make a difference by increasing and improving their assistance. But progress on aid, trade and debt relief has been deplorable. The trading regime as envisaged in the Doha development round remains elusive. Pledges to raise the quantity and quality of official development assistance have not been kept, albeit that the decline in foreign aid has been reversed in recent years. Advancement on debt relief has been more about hype than about HIPC – an initiative focused on the heavily indebted poor countries.

The seventh step is deliberately listed last. In practice, however, it often comes first. This sequence is ineffectual because

a partnership between the poor and the rich – be it local or global – that is focused on money will be inherently unequal, and therefore unstable and vulnerable. Experience shows that real change is ultimately an act of free will; it is seldom the result of compliance with conditionalities associated with foreign aid or domestic transfers. Change cannot be hurried for it is often the case that 'haste makes waste'.

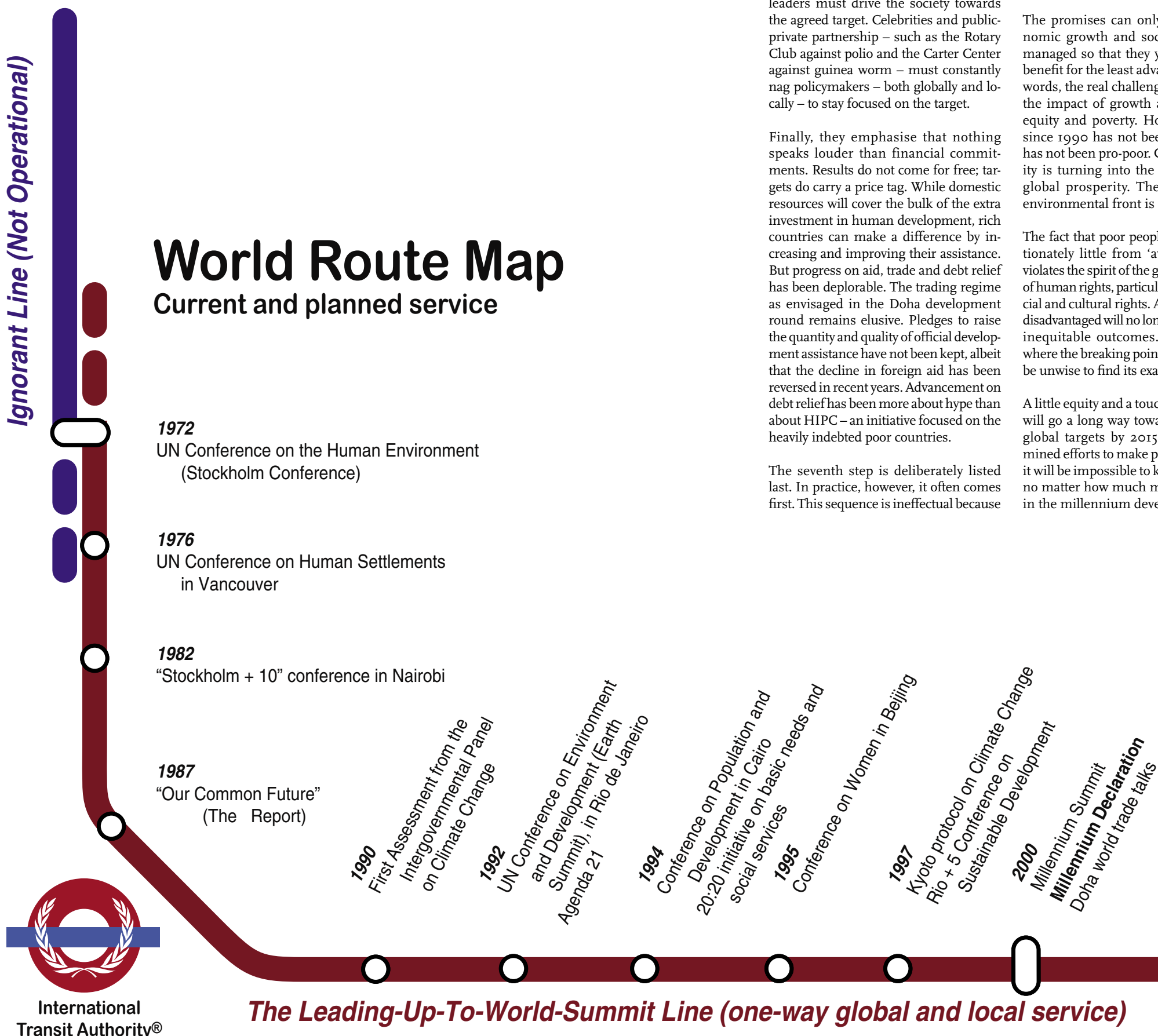
Achieving the global targets will require a radical overhaul of the partnership between poor and rich countries as well as between poor and rich people. Currently, the dimension of 'money changing hands' is dominant. Switching the partnership to the dimension of 'ideas changing minds' will demand that donors and domestic policymakers show an ability to listen and a readiness to unlearn and relearn.

As long as better-off people in developing and developed nations are unable or unwilling to change their theories, perceptions or preconceived notions, the global targets will remain elusive. Repeating standard recipes and defending entrenched views will only prolong the legacy of broken promises. Doing so with great confidence and subsequently complaining about poor implementation will do little to change the final outcome.

The promises can only be kept if economic growth and social progress are managed so that they yield the greatest benefit for the least advantaged. In other words, the real challenge is to maximise the impact of growth and progress on equity and poverty. However, progress since 1990 has not been sufficient and has not been pro-poor. Growing inequality is turning into the Achilles' heel of global prosperity. The picture on the environmental front is no exception.

The fact that poor people benefit proportionately little from 'average' progress violates the spirit of the gradual realisation of human rights, particularly economic, social and cultural rights. At some point, the disadvantaged will no longer accept grossly inequitable outcomes. Nobody knows where the breaking point lies and it would be unwise to find its exact location.

A little equity and a touch of imagination will go a long way towards meeting the global targets by 2015. Without determined efforts to make progress pro-poor, it will be impossible to keep the promise, no matter how much money is invested in the millennium development goals.





One Planet, Many People: Atlas of Our Changing Environment

The atlas provides a comprehensive, visual presentation of scientifically variable information, on changes in the global environment—both the good and the bad—acquired and assessed through state-of-the-art remote sensing technology. It is intended for environmental policy makers, non-governmental organizations, the private sector, academics, teachers and citizens. This colorful and approachable atlas contains photographs, satellite images, maps and narratives that provide insights into the many ways people around the world have changed, and continue to change, the environment. The main purpose of this hard-cover, 332-page, large-format atl

Environment and the Millennium Development Goals: building common ground

“Our environment is many things, a classroom, a pharmacy, and a supermarket.”
Ruth Lilongula from the Solomon Islands

“Environmental sustainability is the foundation on which strategies for achieving all the other MDGs must be built, because environmental degradation is causally linked to problems of poverty, hunger, gender inequality and health.”
UN Millennium Project, 2005.

The Poverty Environment Partnership (PEP) is a network of over 30 international development and environment agencies, which seeks to improve the coordination of work on poverty reduction and environmental management as part of international efforts to achieve the Millennium Development Goals. Current membership of the partnership includes the Asian Development Bank, the World Bank, the World Conservation Union, the International Institute for Environment and Development, the World Resources Institute, the World Wildlife Fund, the European Commission, a large number of donor governments, the Food and Agriculture Organisation, the World Health Organisation, UNDP and UNEP.

PEP members are convinced that the environment is central to achieving all the MDGs and not just MDG 7. They argue that investment in environmental management makes good economic sense for poverty reduction. In preparation for the 2005 World Summit PEP members decided to join forces, resolved to work together to offer compelling evidence and a robust set of strategic options to the 2005 World Summit and follow-up initiatives. This resulted in the PEP Environment for Achieving the MDGs Initiative. Through this initiative the PEP seeks to revitalise political interest in the environmental challenges central to achieving the MDGs.

The initiative targets three main outputs. Two analytical studies are being prepared that will consolidate and communicate the best analytical thinking on MDGs and the environment. One focuses on economic assessment and investment issues, demonstrating priority areas for improved investment towards MDG 7 and the environment components of the other MDGs. The other concentrates on MDG 7, Target 9, more specifically on indicators and assessment tools that offer effective ways of measuring progress towards environmental goals that also provide benefits for poor people.

A summary document will highlight the key messages of the two studies, making the case for investment in the environment. It will highlight the returns for poverty reduction from environmental management, for example related to water supply and sanitation. According to WHO research the costs of meeting the MDG target on water and sanitation amount to \$11bn per annum, whereas the benefits in terms of better health, lower death rates, and improved education and worker productivity are far greater, totalling about \$84bn per annum. Even higher returns can be obtained with more ambitious coverage, due to economies of scale.

Another example concerns energy for households that rely on biomass for cooking and heating. Wood and dung are the principal energy source for many poor people, mainly accessible because women and children spend long hours collecting fuel, then suffer ill-health due to indoor air pollution. Measures to improve the efficiency of biomass fuels or facilitate fuel-switching are consequently a priority. Substituting kerosene for the biomass energy used by 500 million people would cost about \$11bn per annum. Potential health benefits from the reduction of indoor air pollution alone may be sufficient to justify this investment. But there are additional benefits in time saved (collecting fuel) and environmental services (relieving pressure of fuel wood cutting from natural forests, and freeing farmers to apply animal dung to their fields, instead of burning it).

Apart from making the case for investments in environmental management this summary document will also provide the elements of a global response strategy to strengthen environmental contributions to the MDGs:

- Mobilising resources, in part through the aid system and private sector;
- Encouraging a bottom-up approach, principally through local and national institutions;
- Encouraging investment in the pro-poor productivity of environmental assets, and enabling better access by the poor to the benefits;
- Boosting capacity to integrate poverty-environment links in national development processes; and
- Broadening partnerships and coalitions, building on the growing poverty-environment “movement”.

The two analytical studies and the summary document constitute the first major output of the PEP initiative. The second one is a high profile event on 14 September 2005, the first day of the 2005 World Summit and also the day of the launch of this issue of the Poverty and Environment Times. This event will consist of a high-level policy debate in the afternoon and a dinner for Heads of State in the evening. The policy debate will feature Nobel prize winners, top policy makers, representatives of industry and practitioners. It will highlight the importance of the environment in achieving the MDGs. The subsequent dinner should signal growing political support for a scaled-up role for environment in achieving the MDGs, providing a high profile forum for major announcements by governments, PEP partners and coalition members.

Finally the initiative seeks to pursue and build on existing momentum, recognising that the action and involvement of all stakeholders are necessary at different levels. This joint action will help to ensure that MDG-based poverty reduction strategies take environmental dimensions into account.

For more information on the work of the Poverty and Environment Partnership see www.undp.org/pei/aboutpep.html

Getting the targets and indicators right

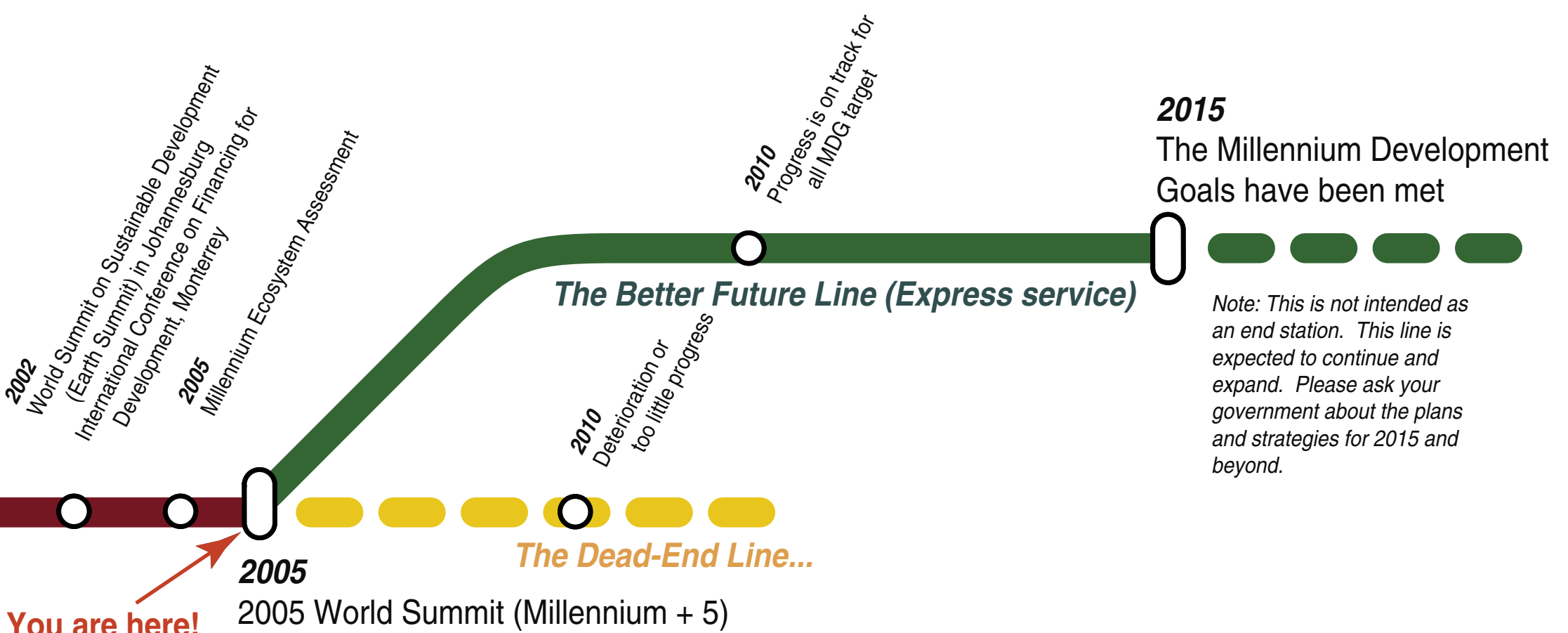
One of the most important innovations of the MDG approach is its ability to make governments more accountable for their performance in improving human well-being. By stating goals and measuring progress in clear, straightforward language, the MDGs make it easy for civil society groups to evaluate progress toward human development goals and to issue a public “report card” on a government’s success or failure. Unfortunately the lack of clear, comprehensive targets and indicators for measuring the capacity of ecosystems to provide sustainable environmental income for the poor means that the “accountability effect” of the MDG approach is not yet applicable to the world’s environmental goals. Until the environmental framework of the MDGs is fixed, short-run progress towards the other goals is at risk of being unsustainable. Realigning the MDG framework to correct its environmental shortcomings begins with an acceptance of ecosystems as the key to environmental income, the

most direct way that nature affects the poor. This realignment should be guided by the recent findings of the Millennium Ecosystem Assessment, a four-year study conducted by more than 1,300 scientists from 95 countries to ascertain the consequences of ecosystem change for human well-being. The scientists determined that in all regions, and particularly in sub-Saharan Africa, the condition and management of ecosystems is a “dominant factor” affecting the chances of success in fighting poverty. They concluded that the degradation of ecosystems is already a “significant barrier” to achieving the MDGs. In fact, many of the regions facing the biggest hurdles in reaching the MDGs coincide with those experiencing significant ecosystem degradation.

From World Resources 2005: The Wealth of the Poor – Managing Ecosystems to Fight Poverty. Washington, DC: WRI. World Resources Institute (WRI) in collaboration with UNDP, UNEP, and the World Bank, 2005.

Table 4: Suggested rewording of MDG 7, Target 9

Targets	Indicators
Target 9 (original wording). Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources	<ul style="list-style-type: none"> • Proportion of land area covered by forests • Ratio of area protected to maintain biological diversity to surface area • Energy use per \$1 GDP • Carbon dioxide emissions (per capita) and consumption of ozone-depleting chlorofluorocarbons • Proportion of population using solid fuels
Target 9a (reworded). Maintain or restore the capacity of ecosystems to provide critical ecosystem services, and integrate the principles of sustainable development into local, national, and international policies and programmes	<ul style="list-style-type: none"> • Extent and condition of communal fisheries (coastal and inland) • Extent and condition of forested areas held in common • Watershed conditions on communally held lands (e.g. vegetative cover; water availability; groundwater trends) • Soil fertility on private farmlands • Land degradation
Target 9b (new). Ensure the poor access to environmental resources and decision-making	<ul style="list-style-type: none"> • Proportion of rural households with access to secure tenure • Proportion of rural households with access to environmental information (e.g. extension services; pollution or environmental health alerts; environmental impact studies on proposed concessions or developments) • Participation in local environmental decision-making



Summit must be red ribbon day for the environment

By **Klaus Toepfer**, Executive Director of UNEP.

The 2005 World Summit aims to deliver a new and strengthened United Nations in areas ranging from security to human rights.

It will also take stock of progress towards the 2015 Millennium Development Goals. These include eradicating poverty, supplying safe and sufficient supplies of drinking water, empowering women, and reversing the spread of infectious disease.

Many important advances are being made in these fields, but it is also clear that these internationally agreed targets are unlikely to be met without a new sense of urgency and greater imagination as to the solutions.

Over recent months the environment has emerged as a crucial pillar, if not a cornerstone, upon which the goals may well stand or fall.

"A more secure world: Our shared responsibility", the report of the Secretary-

General's High Level Panel on Threats, Challenges and Change, reads: "Environmental degradation has enhanced the destructive potential of natural disasters and in some cases hastened their occurrence. More than two billion people were affected in the last decade."

One of the interim reports of the UN Millennium Project, requested by the Secretary-General to inform the September review, states: "A considerable body of scientific data points to environmental degradation – the erosion of genetic diversity, the loss of species, the degradation of ecosystems, and the decline of ecosystem services – as a direct cause of many of the most pressing issues we face today including poverty, declining human health, hunger, undrinkable water, emerging diseases, rural-urban migration and civil strife."

So the environment is not a luxury, not a Gucci accessory bag or a fancy silk tie affordable only when all other issues have been resolved.

It is the oxygen breathing life into all the goals. It is the red ribbon running

around our common aspirations for a healthier, more stable and just world.

It is also critical to the economies of countries and regions, a fact that governments have yet to fully take on board but which they ignore at their economic peril.

When New York city council was faced with supplying safer drinking water for its nine million customers, it also faced an up to \$6 billion water filtration bill.

Instead of paying for machinery, the city plumped for better management of river banks, forests, agriculture and other ecosystems to reduce pollution into the Catskill-Delaware river system.

By working with nature, the city spent only \$1bn to provide safe drinking water to New York and thus saved between \$3bn and \$5bn.

The recently published Millennium Ecosystem Assessment and its spin off reports also highlight similar hard economic arguments.

The work of 1,300 scientists and experts from 95 countries, it has begun to put numbers on the value on individual ecosystems and the services they provide.

It says that an intact wetland in Canada is worth \$6,000 a hectare compared with \$2,000 a hectare for one cleared for intensive agriculture.

Intact tropical mangroves, coastal ecosystems that are nurseries for fish, natural pollution filters and coastal defences, are worth around \$1,000 a hectare. Cleared for shrimp farms, the value falls to around \$200 a hectare.

The assessment also puts a value on peat bogs and marshlands. It estimates that the Muthurajawela Marsh, a coastal bog covering more than 3,000 hectare in Sri Lanka, is worth an estimated \$5m a year as a result of services such as local flood control.

Losses as a result of damage by alien invasive species in the Cape Floral region of South Africa is calculated at around \$2,000 a hectare.

The annual recreational value of coral reefs in the six Marine Management Areas of the Hawaiian islands ranges from \$300,000 to tens of millions of dollars a year.

Studies from Algeria, Italy, Portugal, Syria and Tunisia also point to the value of intact forests.

They estimate that the value of the timber and fuel-wood from a forest is worth less than a third when compared with the value of services ranging from watershed protection and recreation to the absorption of pollutants such as greenhouse gases.

The burning of 10m hectares of Indonesia's forests in the late 1990s cost an estimated \$9bn due to factors including increased health care and tourism losses.

There are also new findings on the link between the spread of disease and environmental destruction. The provision of treated bed nets, the better availability of low cost anti-malarial drugs and the development of vaccines are crucial but so are healthy ecosystems.

Studies in the Amazon by researchers at Johns Hopkins University in the United States have concluded that for every 1% increase in deforestation, there is an eight per cent increase in the number of malaria-carrying mosquitoes (see also map on page 12).

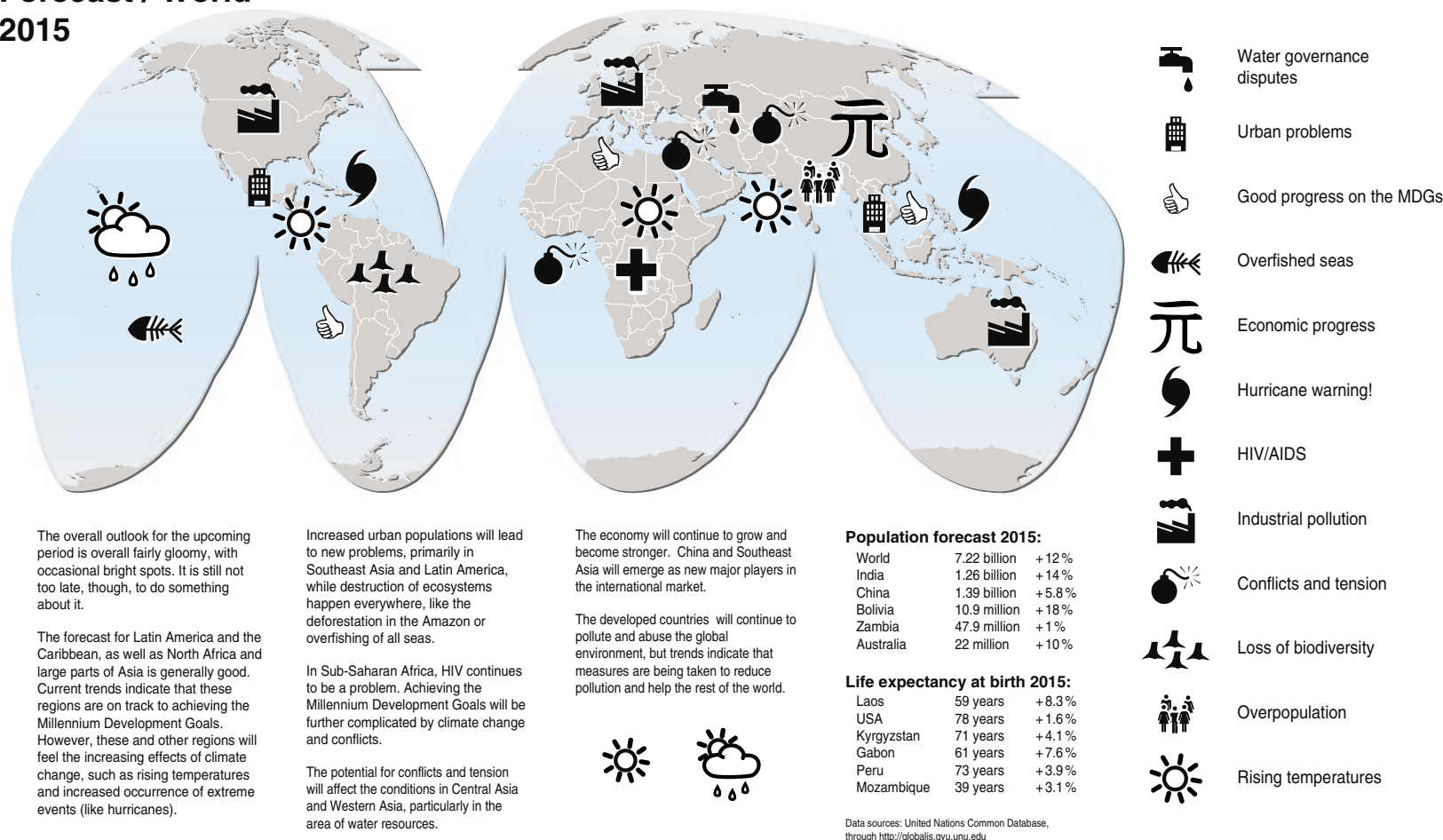
This has implications for human health but also to economic development. It is calculated that Africa's gross national product (GNP) in 2000 could have been 25% or \$100bn higher if malaria had been eradicated 35 years ago.

So we sincerely hope that when Heads of State meet in New York that they put "natural or nature's capital" right up there with human and financial capital.

And that they also recognise that significant, targeted investments in the environment including the restoration and rehabilitation of damaged and degraded wetlands, forests, mangroves, coral and the like provides a high rate of return and will go a long way towards meeting the eight goals.

Anything less will undermine our attempts to defeat poverty and deliver sustainable development and will short-change current and future generations.

Forecast / World 2015



Environment and human well-being

Our lives on this planet depend on nature's provision of stability and resources. Current rates of human-engendered environmental destruction threaten those resources and leave death and misery in their wake. But we can avoid this. To do so, we must act in concert and with a sense of urgency to make the structural and policy changes needed to maintain ecosystems and their services, control water and air pollution, and reverse the trends leading to global warming. This must be done if we are to achieve the level of environmental sustainability necessary to meet the UN Millennium Development Goals addressing poverty, illiteracy, hunger, discrimination against women, unsafe drinking water, and environmental degradation. Environmental sustainability is essential to achieving all other Millennium Development Goals. By environmental sustainability we mean meeting current human needs without undermining the capacity of the environment to provide for those needs over the long term. Achieving environmental sustainability requires carefully balancing human development activities while maintaining a stable environment that predictably and regularly provides resources such as freshwater, food, clean air, wood, fisheries, and productive soils and that protects people from floods, droughts, pest infestations, and disease. Therefore, environmental sustainability is necessarily a fundamental objective in the pursuit of the seven other Millennium Development Goals. As stated in the UN Millennium Declaration, we must "spare no effort to free all of humanity, and above all our children and grandchildren, from the threat of living on a planet irredeemably spoiled by human activities, and whose resources would no longer be sufficient for their needs."

Source: Millennium Project sub taskforce

Dear reader, The Editorial Team

Thank you for picking up this edition of Environment & Poverty Times, an edition that more than anything focuses on the linkages between the MDGs and our common environment. So, what's the news, you might ask? So did we when we started the process of making this paper. We were well aware that the links between the environment and the MDGs had already received some attention. But it also seemed very clear to us that environmental issues are intrinsically linked to the achievement of any of the goals and that the separation of environment into one of eight goals is one of

the weaknesses of the MDGs as a framework for poverty reduction and sustainable development. How can we fight poverty without considering the balance of our ecosystems? How can we talk about improving the health of children and mothers without talking about natural resources?

Regions of the world facing the most serious decline in the services provided by ecosystems are the same areas showing the slowest progress in achieving the MDGs. In sub-Saharan Africa, Central and South Asia and parts of Latin America, the burden of poverty, hunger and disease coincides with acute deterioration of natural services such as the provision of fresh water, the formation of soils to grow crops and the availability of natural resources such as

fish, fuel-wood and medicine derived from plants. We believe that certain things in life cannot be mentioned enough, and a paper shedding light on the linkages between our environment and the MDGs still stands out as highly relevant.

Even though the world has made significant progress in achieving many of the goals, progress has been far from uniform across the world-or across the Goals. There are huge disparities across and within countries. One can ask if the goals merely are targets set but never met? The environment might just be the pillar upon which all the goals and hence a more sustainable development may well fall or stand. And the environment is not a luxury only affordable when all other issues have been resolved. It is, as stated, the red ribbon running around our common aspirations for a healthier, more stable and just world. Essential for all and everything!

Good reading!

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