



FACING THE REAL ISSUES

**POVERTY
ELIMINATION**

AND THE
ENVIRONMENT

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MARK EDWARDS, STILL PICTURES

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Destroying the world's remaining natural ecosystems will not raise the poor into prosperity.

1 SUMMARY

Widespread recognition that the reduction of global poverty requires the preservation of the global environment dates back to the 1972 Stockholm Summit. Twenty years later the world's governments reiterated these commitments at the Rio Summit. However, these sentiments have not been transformed into action, and real policies have failed to match green rhetoric.

The number of people in absolute poverty has grown to 1.3 billion. All environmental trends are worsening at a faster rate – whether climatic change, soil erosion, overfishing or water stress.

Significant changes are needed if the poverty reduction targets proposed by the OECD are to be achieved. This requires a shift away from the politics of blame that have characterised the past.

From Economic Growth to Sustainable Development

Too often environmental protection is portrayed as a brake on economic development, or a concern of the rich middle classes. However, it is the world's poor who directly depend on the natural environment, and who are most at risk from the impacts of climate change, pollution and uncontrolled resource use.

Poor people suffering from a low quality environment are often forced to pollute or use resources unsustainably because they have no alternative for survival, especially in times of crisis or conflict. This environmental degradation is a symptom of poverty, not its ultimate cause.

Destroying the world's remaining natural ecosystems will not raise the poor into prosperity.

Neither will keeping people in poverty preserve the natural world.

Responsibility for this continuing destruction lies with the wasteful over-consumption of rich countries, and the failure of developing countries to address fundamental environmental issues which impact their poorest citizens. Responsibility for finding solutions lies with everybody.

This will not be easy. The fundamental pressures on the environment from economic growth and demographic change continue to grow. Reversing these trends requires a different type of economic growth, one that depends more on human skills and intelligence than on natural resources and large capital investments.

The first stage in this process is to discard economic models which fail to recognise ecological limits to human activity, and to face the real issues of achieving sustainable development.

Reducing Poverty and Protecting the Environment

Poor people experience their environment in many ways: as a source of risks, a provider of necessities, as quality of life, and potentially as an opportunity to escape poverty.

Poverty occurs when people do not have access to enough assets to provide a decent livelihood. They are forced to trade-off different assets in ways that stop them, or their children, accumulating assets in the future – for example, withdrawing children from school to work in the fields, or over-grazing land to survive this year's drought.

WWF works by providing people with alternatives to running down their environmental assets. This can involve providing better farming methods, higher value crops or alternative incomes such as bee-keeping. It also involves creating social and human assets – for example, capacity building in sustainable development

Neither will keeping people in poverty preserve the natural world.

techniques, and the facilitation of local institutions to manage natural resources such as forest, fisheries and wildlife.

However, preserving vital environmental resources for local communities will not automatically conserve the associated biodiversity and ecosystems. Nor will concentrating on local needs be sufficient to preserve environmental services through periods of rapid economic change.

During the transition to industrialised and urbanised economies the value of many environmental goods to local communities reduces. During this dynamic transition period irreversible damage occurs. This is driven both by necessity and short term gain, much of which is uneconomic.

As countries develop, the greatest value of ecological services begins to lie outside local areas – for example, the downstream benefits of watershed protection. However, local people will convert the ecosystems providing these services unless this wider value is directly transmitted to them.

Such value can be captured through revenues from ecotourism, higher prices for sustainable products or through political support for conservation funding; increasing the resources available to both improve local conditions and pay for environmental management.

Much of WWF's work therefore involves preventing such irreparable damage by providing new opportunities which match the changing aspirations and conditions of local communities.

Facing New Challenges and Opportunities

But achieving sustainable development requires more than working with poor communities. Experience shows that poverty

reduction and environmental protection can be combined at the local level, but these efforts are vulnerable to outside economic and political forces.

Too often poverty and environmental degradation are symptoms of underlying political and economic inequity. Estimates place 60 per cent of the poorest people in least developed countries in ecologically fragile areas. This may arise from "natural" reasons, such as natural disasters. But the rural poor, and especially indigenous people, are often displaced into marginal areas, or have their resources depleted, by commercial suppliers of national and international markets.

The resulting poverty is a human problem created by unequal distribution of resources between different groups in society. Dealing with such imbalances is as central a part of achieving sustainability as working with local communities to improve environmental management.

Though a contentious issue, rapid population growth in developing countries is causing severe environmental stresses in many areas. Compounded by limited access, demographic change – and especially migration – is bringing groups into conflict over scarce resources – for example, water.

There is a danger that isolated projects to conserve resources will merely act as environmental magnets to groups from areas where destruction has gone unchecked. A broader and more consistent pattern of protection is needed to prevent the conflicts such imbalances bring.

These issues require work at a larger scale. Poverty reduction and environmental protection must be integrated with national development strategies – and not be a ghetto of aid-subsidised projects.

More attention must be given to the meso-level of state, local and municipal governance. It is here that economic and demographic planning needs to occur, where disputes over resource rights will be resolved, and where enough local action can be enabled to make a real difference.

Enabling local communities to manage their natural resources sustainably can also provide a powerful voice in support of other development goals such as land reform. It also stimulates real social change, including the resolution of conflicts between rival communities and the empowerment of marginalised groups such as women.

Combining Environment and Development Constituencies

The OECD poverty reduction commitments present an opportunity to reinvigorate the integration of environment and poverty elimination objectives.

The environmental movement has much to offer this process. A new political constituency in North and South.

A common cause between rich and poor. A new paradigm of development focused on people's needs. And additional funding for poverty reduction programmes.

WWF looks forward to working in new ways and in new partnerships on these issues. We also look forward to facing these real – and difficult – issues, in a way that avoids the unproductive debates and mistrust of the past.

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Man has the fundamental right to adequate conditions of life, in an environment of a quality which permits a life of dignity and well-being, and bears a solemn responsibility to protect and enhance the environment for future generations

– Stockholm Conference on the Human Environment, 1972

Conservation, like development, is for people; while development aims to achieve human goals largely through use of the biosphere, conservation aims to achieve them by ensuring such use can continue. – IUCN, WWF and UNEP, World Conservation Strategy, 1980

Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature

– Principle 1:
The Rio Declaration on Environment and Development 1992

Rhetoric & Reality

1.7 billion people have no access to safe water

One third of the world's population lives in countries experiencing water stress

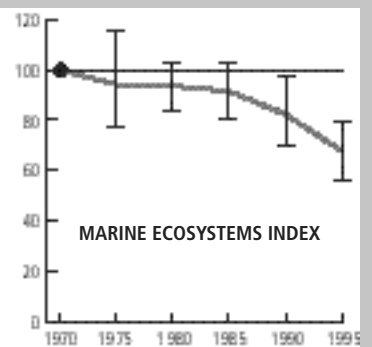
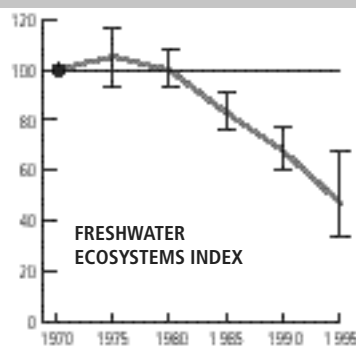
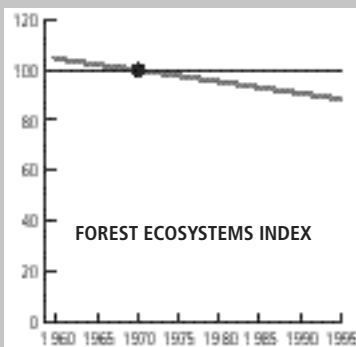
Fossil energy use has grown by 70 per cent since 1970

30 per cent of the Earth's recorded natural wealth has disappeared since 1970

LIVING PLANET INDEX

A measure of the health of the world's natural ecosystems, 1970 – 1995

Upper confidence limit
Lower confidence limit



2 REVITALISING THE DEBATE ON POVERTY AND THE ENVIRONMENT

Recognition that environmental protection is an essential component of both development and poverty reduction was given by the world's governments at the 1972 Stockholm Summit. However, these sentiments have not been transformed into action, and real policies have failed to match green rhetoric.

Since 1972 the number of people in poverty has continued to grow, and in 1997 reached 1.3 billion – 23 per cent of the global population. This is despite a doubling of economic wealth, and estimates that at least a third of the Earth's remaining natural wealth has been destroyed.

This is not to belittle the real progress made in improving economic growth, human development and aspects of environmental quality in a few countries. But these interventions have not effectively counteracted the immense economic, political and demographic forces driving increased poverty and environmental destruction. The expected "trickle-down" of economic growth has not occurred, and income inequality has increased both within and between countries.

Outside east Asia, per capita GDP growth has only been slightly positive over the last 30 years, and has declined in Africa and eastern Europe (WWF-MPO, 1998). The impact of the current Asian – and now global – financial crisis has damaged expectations that even rapid economic growth can lead to sustained improvements in living standards and poverty reduction.

However, targeted policy interventions have meant that a growing proportion of people in developing countries now experience improved life expectancy, lower infant mortality rates, increased adult literacy and

greater access to safe water. But general increases in population mean that greater absolute numbers of people suffer unacceptable conditions (HDR, 1997).

Responsibility for this failure lies with both North and South, and must be shared by governments, the private sector and "civil society". Unfortunately, in the past too much energy has disappeared into the politics of blame, rather than into the search for new solutions.

The 1992 Rio Conference on Environment and Development generated a framework of common principles which aimed to break this impasse, by recognising the "common and differentiated" environmental and social responsibilities of countries at different stages of development, and the rights of citizens and non-state groups to have a voice in the development process.

However, the results of Rio have been mixed. Real international aid flows have decreased significantly since 1992, but there have been real advances on global environmental cooperation. In 1997 the OECD Development Assistance Committee (DAC) set out ambitious targets for poverty reduction and improving human development in the fields of health, education and gender equality inside a framework of environmental sustainability (OECD, 1996). It is to be hoped that this signals a real political intent to implement the whole of the Rio agenda.

In the next 20 years global population is expected to grow by at least 30 per cent, mostly in developing countries. The global economy will at least double to over four times the size that it was in 1970. Given the scale of these changes, no-one expects the DAC targets to be achieved solely through official aid funding, even if increased to the UN target of 0.7 per cent of GNP.

Official development agencies tend to see poverty reduction coming about through increased foreign investment and liberalised trade, coupled and driven by better economic governance and greater state investment in human development (DFID, 1997).

Most non-governmental organisations doubt that this economic agenda will reduce extreme poverty, especially in less developed countries. Rapidly increasing trade and foreign investment may have fuelled global growth, but benefits have not reached the poorest people or the poorest countries. The debate over the role of globalisation in sustainable development has taken on more urgency due to the negotiation of multilateral investment agreements in the OECD and potentially other fora such as the WTO (Fitzgerald, 1998; WDM, 1998, WWF-UK, 1998a).

Environmentally, the increased demand for basic commodities has caused widespread environmental damage, as evolving environmental regulation has been overwhelmed by the scale of global economic forces – for example, the irreversible destruction of agricultural land and mangrove swamps in order to farm tiger prawns in Asia (WWF-UK, 1998e).

However, the global financial crisis has made the international community think again about naïve liberalisation policies. Governments are beginning to re-emphasise the importance of concurrent regulation, transparent and accountable institutions, and the need to ensure that vulnerable groups are protected and supported through times of economic change.

This combination of economic events and new political will provides an opportunity for all sides in the debate – governments from North and South, the private sector and civil society – to openly discuss what reforms are needed at all levels to achieve the DAC targets on economic, human and environmental development.

3 WWF AND POVERTY ELIMINATION

WWF intends to be an active partner in this process, contributing our experience of environmental management through Integrated Conservation and Development Programmes (ICDPs). However, achieving the goals of sustainable development at a scale large enough to make a real difference is involving new and radically different ways of working.

WWF is a conservation organisation whose mission is to preserve biodiversity, prevent unsustainable resource use and reduce pollution. WWF has always recognised the imperative of poverty elimination and its compatibility with conservation (BOX 1). In WWF's earlier years strict conservation and the creation of exclusive protected areas was over-emphasised, at the expense of working with local people and tackling broad environmental and social problems.

This limited "conservation biology" approach is neither practically possible nor ethically desirable. Population expansion and habitat shrinkage mean that virtually all WWF's conservation projects impact and depend on the behaviour of local populations.

Greater recognition of community and individual rights – especially those of indigenous people – has empowered previously silent voices which cannot and should not be ignored. These factors challenged how WWF carries out its work, and spurred an internal learning process.

At the local level, WWF responded to the complex net of issues surrounding people, poverty and the environment by initiating a programme of ICDPs in 1985. WWF now runs more than 50 ICDPs around the world, which absorb over half of our conservation funds.

ICDPs attempt to reconcile conservation and poverty reduction objectives by creative

PHOTO: Mark Edwards/Still Pictures



partnerships with local resource users – for example, preserving biological resources which bring benefits such as watershed protection, access to food sources or income from eco-tourism.

Given WWF's limited resources, the ICDP programme is intended to provide examples of best practice, rather than directly solve the world's environmental and development problems. The projects aim to demonstrate the potential for wider political and economic reforms, and provide inspiration for other local level initiatives.

This catalysing role means that WWF has always emphasised the significance of capacity building and environmental education at the national level and in its projects. These involve people in and around project areas, and increase the general environmental literacy of the wider public (BOX 2).

Although WWF spends the majority of its resources on field-based projects, it is also active in changing national and international policies in order to reduce environmental pressures and remove obstacles to sustainable management, such as the UN Climate Change Convention, OECD, World Bank and World Trade Organisation.

This document is based on WWF's practical experience at all these levels, and on recent

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1

WWF and poverty elimination

"The WWF believes that the ending of all forms of human suffering is an urgent matter of compelling importance. We must never waver in the fight against disease, hunger and every form of human misery. We must strive to create a world that is much better for everyone. Such a world can, and we believe should, have room in it for wild animals and wild places"

– WWF International Board 1961

2

a) Mudo o Mundo, Raimundo!

In 1996/7 WWF-Brazil, with funds from the Brazilian government, was involved in developing a new environmental source book for primary school teachers entitled *Mudo o Mundo, Raimundo!* (Change the World, Raymond!). The book, which aims to encourage active involvement in local environmental and social realities, was tested in more than 200 primary schools throughout Brazil. It has already sold over 5,000 copies – including 1,000 donated to Maranhao, one of Brazil's poorest states – and work is now continuing on a major programme of training courses based around the book (WWF-UK, 1998b).

b) Jordanhill – catalysing the spread of environmental education

WWF-UK runs a specialist environmental education training course jointly with the University of Strathclyde (Jordanhill) in Scotland. The course provides curriculum developers and other education staff from developing countries with the skills and materials to promote environmental education inside their national formal education sectors. Jordanhill has to date trained 269 students from 42 countries. These students have already changed the curricula in many countries to include environmental and social issues in mainstream education.

Sustainable development recognises that the natural environment provides vital and irreplaceable services to humanity.

Recent WWF research into conservation and development issues

3

1. **WWF Integrated Conservation and Development Projects: Ten Lessons from the Field 1985-1996.** Results of a two-year participative review of WWF's ICDP programme based around 17 case studies and practitioner seminars.
2. **Do Numbers Matter? Population Impacts on Environmental Projects.** Analysis of demographic changes in nine WWF project areas in Africa and Asia
3. **Commercial, Consumptive Use of Wild Species.** Comprehensive review of global experiences with commercial use of wild resources focusing on ecological and economic dynamics and lessons for local management regimes.
4. **From Theory to Practice: incentive measures in developing countries.** Eight case studies showing different ways of providing local incentives to conserve biodiversity
5. **Structural Adjustment, the Environment and Sustainable Development.** Twelve case studies on the environmental and social impact of structural adjustment programmes in Africa, Asia and Latin America.

internal reviews of our effectiveness. It should be seen as a working document, something that organises disparate experiences and attempts to draw lessons for the future (BOX 3).

The case studies in this paper are all drawn from WWF projects. The citations are biased towards WWF publications, most of which contain primary research, to demonstrate the depth of work on these issues which exists inside what many people still view as a wildlife protection organisation.

However, no one organisation can work on all problems, or has all the answers. WWF welcomes comments on this paper, and suggestions for joint projects or partnerships in these areas.

WWF believes that the first step to achieving new partnerships is to share organisational approaches in an open and frank way. However, achieving such a constructive dialogue requires a common language and common questions which do not exist at the moment.

This paper aims to help define a common vocabulary for the environment and poverty debate, and to move the discussion away from concepts and towards solutions.

4 FROM ECONOMIC EFFICIENCY TO HUMAN RIGHTS: THE REAL SUSTAINABLE DEVELOPMENT DEBATE

Sustainable development recognises that the natural environment provides vital and irreplaceable services to humanity, and that jeopardising these functions undermines the ability of present and future generations to both meet their absolute needs, and achieve a reasonable standard of living.

Currently, one third of the world's population lives in countries experiencing water stress and this number is rapidly growing. About 38 per cent of global cropland is degraded, and productivity losses may reach 20 per cent in

some arid countries. Arid and semi-arid countries are experiencing the highest pressures, which will be exacerbated by continuing climatic change (WWF-MPO, 1998).

Competition for both land and water is increasing. In some Asian countries loss of crop land to industry and urban development has occurred at the rate of 1 per cent per year. Irrigation has accounted for more than half the increase in global food production since the mid-1960s, but about 20 per cent (50 million hectares) is suffering from soil degradation due to faulty practices. Agriculture uses 86.8 per cent of water in developing countries, but only 46.1 per cent in the developed world. As countries develop, industrial and domestic use will expand at the same time as more irrigated land is needed to feed rising populations. Given that humans already use around 50 per cent of all the world's available water supplies, shortages and conflicts between uses are inevitable unless resource efficiency is improved (UN-ECOSOC, 1997).

Unsustainable use of natural resources can provide the illusion of growth (WWF International, 1996) but eventually these sectors will collapse, leading to unemployment and social dislocation. For example, the global fisheries crisis threatens the primary protein source of 950 million people (BOX 4).

Therefore, while the rhetoric of sustainable development has been absorbed, its fundamental principles have yet to penetrate the heart of mainstream policy making. Analysts in many disciplines, especially economics, still concentrate on finding trade-offs and conflicts between environment and development, rather than on the need to preserve vital ecological functions.

It is time to move beyond these old attitudes. Environmental economists now agree that economic methods and policies are not sufficient to ensure sustainability. "Getting the

prices right" will neither protect vital ecosystem functions, nor leave adequate choices for future generations (WWF-UK, 1998e; WWF-UK, 1999g). Unfortunately, many development specialists – in both North and South – still look upon environmental protection as a threat to "progress".

Questions such as "do the poor cause environmental destruction?" and "can developing countries afford to protect the environment?" have stimulated hectares of inconclusive and conflicting research (Reardon and Vosti, 1997). These questions distort many policy debates – for example around policies to slow tropical deforestation, environmental disciplines in trade rules, and the environmental responsibilities of multinational corporations (BOX 5).

Typical of such debates is the assertion that pollution controls are a burden on industry which will restrict the ability of developing countries to compete internationally. That protection of natural resources – such as forests, fisheries and soils – is ecological colonialism, with rich countries trying to prevent poorer ones from "benefiting" from environmental destruction. Wildlife, habitat and biodiversity conservation is presented as a Northern concern which impoverishes local people and deprives them of traditional resources (Blench, 1998).



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4

The global fisheries crisis

Current UN estimates show that at least 60 per cent of the world's most valuable fish species are in need of urgent management and 35 per cent are overfished. Indiscriminate fishing methods mean that many unwanted species, including sea birds and mammals, are also being caught, further disrupting marine ecosystems.

Staple fish species have been driven to commercial extinction in some areas, leaving fishing communities without livelihoods. Despite this crisis subsidies to fishing fleets are continuing, even though they are worth more than the total value of the catch – so the net productivity of this industry to the global economy is negative (FAO, 1996).

In response to declining catches in traditional areas and over-capitalisation of fishing fleets, large, commercial operators are moving aggressively into fishing areas around developing countries, damaging the livelihoods of local artisanal fishing communities and increasing poverty (WWF International, 1998b).

5

The WWF Expert Panel on Trade and Sustainable Development

In early 1998 the USA was ruled to be in breach of global trade rules in a case brought to the World Trade Organisation by a group of developing countries. The US had introduced a unilateral ban on the import of shrimps caught using methods which kill large numbers of endangered sea turtles. The producer countries argued that this was an illegal trade barrier, because only they had the right to set environmental standards for their fishing fleets. The WTO court agreed, though all the countries have signed treaties to protect these turtles. In October 1998 this ruling was upheld, though for different reasons, by the WTO appellate body. Frustrated by the continuing failure of the WTO to resolve conflicts between trade, environment and development policy objectives, in 1996 WWF established an Expert Panel on Trade and Sustainable Development, with funding from 10 governments. The purpose of the panel is to develop integrated policy packages – for example, new environmental policies, technology transfer and reductions in trade barriers – which harness trade to support sustainable development.

The panel has produced a generic methodology for such integrated policy packages, and developed policy options for timber, electricity generation and textiles. Pilot projects for some proposals are planned, and the panel will increasingly concentrate on implementation.



Destroying the world's remaining natural ecosystems will not raise the poor into prosperity. Neither will keeping people in poverty preserve the natural world.

Traditional forest conservation in Kenya

Kaya forests are remnant patches of the once extensive and diverse coastal tropical lowland forests of coastal east Africa. Initial research has shown that more than half of Kenya's rare plant and shrub species exist in the Kaya, and 30 new species have so far been discovered.

These patches have survived through the protection of the local Mijikenda people, especially the elders. They are traditionally managed by councils of elders who honour the Kaya for protecting their ancestors from enemies – as they used to surround the local fortified villages – and for guiding farmers and fishermen to greater harvests. As well as being used for cultural activities, the Kaya also provide some medicinal plants for local communities.

However, the Kaya are now under threat both from outsiders – especially developers of coastal tourist resorts – and from younger members of the community who do not respect the traditional authorities. WWF is working with local communities to create new sustainable management solutions, and to protect the Kaya against illegal development. (WWF International, 1998a)

6

Extreme individual examples can be found to support these positions. However, in general they fly in the face of the complex economic and ecological realities of both rich and poor (BOX 6).

There is little evidence that low pollution standards confer competitive advantages on firms. Environmental expenditure is only 3 per cent of costs in most industries, while wages account for around 70 per cent. Disparities in wages are generally far more significant for industrial location.

However, industries do use competitiveness as an argument for lowering environmental and labour standards once established. This tends to damage the poorest workers and populations, while giving them few compensating benefits (Jeppesen et al, 1998). The correct policy response is not to lower regulatory standards, but for governments to agree to limit all investment subsidies and impose codes of conduct on trans-national companies (WWF-UK, 1998d).

These old questions do not seem to help us find solutions; they just give reasons to carry out more research. Meanwhile, by signing up to the Rio principles, governments have already recognised that there can be no fundamental trade-off between poverty elimination and the environment.

Destroying the world's remaining natural ecosystems will not raise the poor into prosperity. Neither will keeping people in poverty preserve the natural world.

The challenge is to achieve these goals, not to debate whether these are "efficient" outcomes in some abstract economic calculus. Sustainable development rests on the basic human rights of people to a decent standard of living and a clean environment. These rights cannot legitimately be traded-off against other economic or political goals.

Tensions between the environment and traditional economic development

Unfortunately, advocates of sustainable development have also been guilty of obscuring the debate. The fact that poverty reduction and environmental protection are in the end mutually supportive does not remove the numerous national, regional and local trade-offs and conflicts which must be overcome or resolved in this process.

Nor can it be asserted that reducing poverty will automatically protect the environment – environmental protection is a far more deliberate process than this, and evidence linking higher incomes to better general environmental quality has been roundly refuted (WWF-UK, 1998e).

Development does sometimes involve difficult choices between preserving natural areas and expanding economic sectors. But usually little thought is given to the real economic and social benefits derived from a healthy environment, or whether local people will actually gain from such "hard choices". Many past development projects – dams, roads, rapid urbanisation, clear cut forestry – have had serious environmental consequences and have done little to reduce poverty.

The simple conflation of economic development with poverty reduction is mistaken. There are many middle income countries with high levels of poverty – Brazil, for example – and many poorer countries such as China which provide relatively high levels of basic needs provision. The level of environmental quality in these countries is also unrelated to poverty. Chinese cities contain the richest groups but suffer from very bad air quality; conversely the poor farmers responsible for much deforestation in the Amazon are victims of Brazil's severe inequalities.

To have and have not: the standard of living in Rio de Janeiro ranges from the gross to the squalid.

PHOTO: Mark Edwards/Still Pictures



interested and ill-informed decisions by individual economic actors. Environmental protection is more complex: it requires new institutions, the articulation of communal values and precautionary action when faced with future uncertainty and strong, current vested interests.

Poverty reduction is equally complex, and does not just mean higher cash incomes. It requires the provision of sufficient, diverse assets and security to impoverished groups, families and individuals so that they can provide adequately for themselves without compromising their children's future. This will not automatically emerge from higher economic growth. Instead, it will require policies to strengthen the entitlements and political voice of poor people, and action that goes against the interests of powerful groups which benefit from such poverty.

Achieving both goals will require a different type of economic growth – a growth that depends more on human skills and intelligence than on natural resources and large capital investments.

This type of growth requires significant policy intervention – not to supplant the market and private economic activity, but to guide and support economic activity so that it provides the widest possible social welfare. This does not require a large state apparatus, but will never be achieved with the type of emaciated state forced on many countries by Structural Adjustment Programmes (SAPs). For example, under its SAP, El Salvador's environmental management service was cut by 85 per cent (Reed, 1997).

While their physical links are often complex, in political terms poverty reduction and environmental protection are very similar in the type of policies they require.

The dynamics of poverty and the environment are different in urban and rural areas, and in industrial and natural resource using sectors. Most developing countries are aiming to reduce their dependence on natural resource exports, and to expand manufacturing industries. It would be economically disastrous for developing countries to follow past patterns of "dirty" development, when they could avoid investing in old and inefficient technologies.

The environmental dilemma of industrial development is to encourage clean manufacturing and ensure urban expansion does not create high levels of air and water pollution. During the transition to a more urban-based society, agricultural productivity must rise as people migrate to the cities and

overall populations continue to grow. In rural areas basic environmental functions must be maintained, renewable resources used efficiently and sustainably, and minerals extracted with minimal pollution and damage to workers and the environment.

Therefore, while environmental protection will shape, and to an extent limit, traditional economic development, it does not stop countries' reducing absolute poverty levels. This does not mean, however, that an environmentally sound and equitable development path is easy to achieve.

The political economy of higher quality development

Environmental destruction is easy: it merely requires numerous short-sighted, self-

Achieving both goals requires changing direction of the “invisible hand” of economic activity, without stifling it in the process. Both will require empowerment of local people to be effective, and cannot rely on “top down” solutions. Equally, macro-level reforms are also important, whether this involves taxing labour less and pollution more – or phasing in trade liberalisation programmes in a way that avoids social dislocation and environmental destruction.

Poverty elimination and environmental protection both require imaginative, responsive and creative policies which go against current trends. For achieving sustainable development, this political synergy is not only perhaps as important as their physical linkages, but also as relevant at the international level – where global economic agreements are negotiated – as when community resource management groups are active in demanding basic political rights.

5 RURAL POVERTY AND THE ENVIRONMENT: FROM ANALYSIS TO ACTION

Because of the nature of WWF’s work, the majority of our experience and analysis is concerned with rural poverty, and this is the focus of the rest of this paper. However, we are investigating urban issues and rural and urban poverty links such as political bias, permanent and temporary migration, remittances and pollution (WWF-MPO, 1998).

Over the past decades, experience and research have shifted perceptions of what constitutes and causes poverty, and demonstrated the complexity of relationships between human development and the environment. This is a healthy shift from the simplistic analysis of the past which recommended the “one size fits all” policies – but it can make it hard to find feasible solutions on a large enough scale to help significant numbers of people. However, priority areas for intervention can be identified, and successful strategies and future challenges illuminated. The following sections attempt to do this by answering three key analytical questions, and three questions on the policy responses to these challenges.

Who is responsible for placing pressure on the natural environment?

Despite rising incomes in much of the developing world the rich countries of the OECD still use over twice their fair per capita share of the most basic resources (grain, wood, fish, water and fossil fuels). North Americans alone use five times the per capita share of Africans, and three and a half times the per capita share of people in the Asia/Pacific region (WWF International et al, 1998) (BOX 7). High population growth in developing countries is increasing their consumption more slowly than the higher economic growth in both developed and some developing countries.



Pollution knows no boundaries. What happens in one part of the world can have devastating consequences elsewhere.

The environmental impact of the rich also expresses itself in global environmental pollution such as persistent chemicals and climate change. Global chemical pollution, particularly of endocrine disrupting chemicals, threatens both human health and the productivity of important freshwater and marine fisheries.

Over 84 per cent of the gases currently causing climatic change have been produced by the industrialised countries. Despite fast growth of emissions in some developing countries, the industrialised world still produces 70 per cent of all carbon dioxide emissions (UN- ECOSOC, 1997). However, climatic change will have greatest impacts in poorer countries which are dependent on climate-sensitive sectors such as agriculture, and have fewer resources for adaptation.

Currently, environmental problems in poorer countries are more local, such as unsustainable logging, poor land management, local and indoor air pollution. Biodiversity loss is greatest in developing countries, and removes both the potential "raw material" for future medicines and the aesthetic, spiritual and cultural value of natural ecosystems.

Many poorer countries suffer from appalling and economically inefficient environmental management. For example, countries in central Asia have some of the highest per capita water use levels in the world due to agricultural irrigation (WWF International et al, 1998). This is draining the Aral Sea and impoverishing downstream communities. However, because much of this water is used to grow cotton for export, responsibility for the damage must be shared by the final consumers.

If the rich countries are still responsible for most of the gross pressure on the world's environment, the elites in many poorer

countries benefit economically from supplying this demand. The burgeoning middle class in many developing countries is also beginning to consume and pollute at a comparable level to some industrialised countries.

However, despite agreement on the Rio Principle of "common and differentiated responsibility" for the global environment, the politics of blame still dominate this debate.

Responsibility for this lies with both sides. With the industrialised countries for not shouldering responsibility for their environmentally damaging consumption, and failing to deliver promises of greater development assistance. And with the developing countries for often failing to address environmental issues, even when they impact on the poorest, and at the same time for using under-development as a convenient excuse for inaction.

Solutions will require equity between, and political change within, countries. The rich have to reduce their environmental pressure so that per capita consumption in poorer countries can rise without breaching overall ecological limits. However, without better environmental management and a matching shift in development aspirations in poorer countries, any increase in ecological efficiency in richer countries will be exceeded by growth elsewhere (BOX 8).

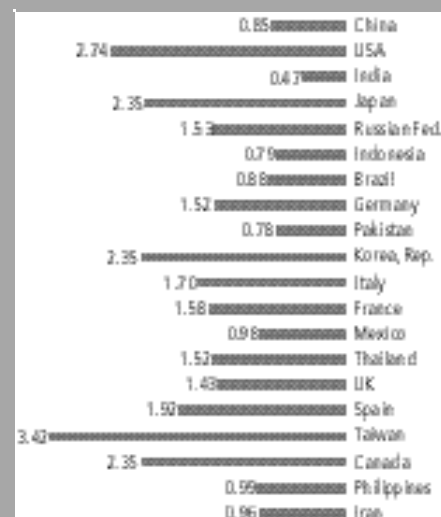
Why are the poorest groups usually in the most resource depleted or polluted areas?

Estimates place 60 per cent of the poorest people in least developed countries in ecologically fragile areas, 47 per cent in rural areas and 13 per cent in urban "squatter" camps. Around 180 million of the poorest rural people have little or no access to land, so no control over resource use decisions.

7

Per capita consumption graph from the Living Planet Index

CONSUMPTION PRESSURE PER PERSON
1 = world average consumer in 1995



Estimates place 60 per cent of the poorest people in least developed countries in ecologically fragile areas.

8

The Forest Stewardship Council: consumption for sustainable development

The Forest Stewardship Council (FSC) is an independent organisation set up with the help of WWF to provide an international voluntary standard for sustainable forestry. The FSC accredits private certifying agencies which then monitor and certify timber producers to ensure they follow FSC standards. The resulting timber is then tracked to market where it receives a unique eco-label which guarantees that it comes from a sustainably managed forest. This labelling means that consumer pressure can encourage better management practices, the maintenance of healthy forests and the livelihoods of those that depend on them.

The FSC, which is based in Mexico, has a three-chamber "parliament" of stakeholders representing environmental, economic and social interests. The FSC standard therefore covers issues such as replanting, biodiversity management and worker conditions, while the inclusion of business representatives ensures that the standard does not exclude small or poorer harvesters.

Environmental degradation is a symptom of poverty, not its ultimate cause

Discount rates and sustainability in Amazonian Peru

The Tamshiyacu-Tahuayo Communal Reserve in Amazonian Peru was created to help secure use rights over forest resources for local communities. However, commercial tree species, palm fruits and some wildlife species have been over-exploited, and harvesting needs to be halted for at least five years to allow stocks to recover.

Stopping harvesting would reduce incomes by 20 per cent over the first five years, but once stocks have stabilised they would create a sustainable incomes that would be 25 per cent higher. This is because the recovered stocks would provide higher yields. Because the community's apparent discount rate was higher than 12 per cent, "rationally" they would have found the unsustainable option more financially attractive.

However, due to the availability of outside support for their incomes during transition, and staggering the beginning of the no-use periods, the sustainable option has been made more attractive (Freeze, 1997).

Resisting timber concessions in the Central African Republic

Communities around the Dzanga-Sangha project were threatened by the opening of their timber resources to international concessionaires. As in many other African countries, there was a history of unsustainable logging by companies which provided little or no benefits to local communities while removing vital forest resources on which they depend.

WWF worked at both community and national level to protect forest resources and provide economic alternatives to logging. This included helping establish a legal framework for community-based conservation, providing advice to local communities and national activists on forming an alliance against timber concessions, and playing a key role with the World Bank to gain support for conservation-based strategies in the area (WWF-US, 1998).

9

Nearly half the rural poor are pastoralists, fishing communities, indigenous people and other groups which do not fit the usual image of impoverished agriculturists (WWF-MPO, 1998).

Poor people suffering from a low quality environment are often forced to pollute or use resources unsustainably because they have no alternative for survival, especially in times of crisis or conflict. The short-term vulnerability of the poor and their lack of tenure rights also forces them to choose unsustainable uses, rather than gain higher long-term profits by harvesting at a lower rate (BOX 9).

This environmental degradation is a symptom of poverty, not its ultimate cause.

The absolute lack of resources in a country may arise from "natural" reasons, such as a lack of adequate agricultural land, rapid demographic change, past environmental degradation, repeated natural disasters or conflict. But experience shows that many societies have overcome such limitations by careful management and organisation. Even the poorest groups often have social and environmental systems for dealing with disturbances – whether natural, political or economic.

Poverty seemingly caused by absolute shortages is often actually the result of political or market forces. In many cases, local or overseas elites have channelled a country's wealth into their own consumption, rather than investing in reducing poverty and improving general welfare.

This bias results in the under-investment in economic and human capital typical of unsuccessful development in Latin America. This should be contrasted with Asian economies which based their development on high investment in education, increasing equity and strong domestic saving rates.

Rather than being victims of absolute shortages the rural poor are often displaced into marginal areas, or have their natural resources depleted, by commercial interests supplying national and international markets (BOX 10). These negative impacts have often been exacerbated by hasty liberalisation policies forced on countries by the World Bank and IMF. Coupled with population growth, they have produced urban migration, unsustainable resource use and conflicts between incoming and resident groups over a dwindling stock of resources (Reed, 1997).

The resulting poverty is a human problem created by unequal distribution of resources between different groups in society. Unequal distribution may come about because of economic forces, but is also determined by historical, ethnic, political, cultural and gender factors. In particular, the number of rural women in poverty has risen by 50 per cent to 565 million in the last 20 years.

Too often, poverty and environmental degradation are simply seen as the result of over-population, bad resource management and a lack of income generating options – but these are often symptoms of political and economic inequity. Understanding and dealing with such imbalances is becoming as central a part of WWF's work as working with local communities on environmental management, sustainable livelihoods and conservation.

How do impoverished groups experience their natural environment?

The answer to rural poverty has been to try and increase production from natural resources by opening up undeveloped areas, or by supplying input intensive technology. This has often resulted in unsustainable use and the breakdown of traditional support systems, because the diverse roles of the natural environment in local livelihoods have not been recognised.

10

Impoverished groups in rural areas experience their environment in many different ways – as a source of risks, a provider of necessities, a component of their quality of life, and potentially an opportunity to escape poverty.

Figure 1 shows the environmental risks which “development” traditionally aims to cure – flood, forest fires, disease, and wildlife damage – intertwined with environmental benefits to local communities. Developments such as dams, flood defences and irrigation systems have therefore often increased, rather than decreased, flood and disease. Shifting to input-intensive agriculture, enclosing common resources and removing fallback food sources has often increased vulnerability by creating over-dependence on external markets.

The mixed outcomes of destructive development should be unsurprising because

the same environment provides the basic necessities of micro-climate stability, stable water supply, healthy soils, fuel and wild resources. Wild resources in particular have often been neglected in the past, but provide dietary supplements, medicinal products, commercial goods and fall-back subsistence in times of drought or crop failure. The need to preserve resources for future generations also provides a focus for community organisation and cohesion.

A healthy natural environment provides a higher quality of life to otherwise poor groups. These include physical goods such as clean air and water, shade and protection, as well as sources of recreation, cultural, religious and aesthetic significance which are often overlooked.

The value people hold for natural ecosystems nationally and internationally can also be

translated into political influence. This has been a vital factor in the increased international visibility and support for indigenous people’s rights in the past decade.

Environmental value results from preserving diverse, natural ecosystems rather than only intensively-managed monocultures. However, the conversion or simplification of natural systems is one of the main features of development and the transition from subsistence to commercial agriculture.

Environmental values and protection during economic transition

Conservation of natural ecosystems tends to hold local and national value at two contrasting stages of development. First, people value nature highly when they have very low levels of income and depend on wild resources for much of their livelihoods

Figure 1

The role of the natural environment in rural people’s lives



Risks

- Flood
- Disease - human, animal and plant
- Wildlife damage to animals and crops
- Wildlife attacks on humans

Quality of Life

- Clean air
- Shade/protection
- Recreation
- Aesthetic/spiritual/cultural values
- Value to future generations

Decision makers

INDIVIDUALS
HOUSEHOLDS
COMMUNITIES

Necessities

- Micro-climate stability
- Flood protection
- Clean and plentiful water
- Fertile soil
- Fuelwood/fodder
- Access to wild meat/fish, medicinal and food plants
- Crisis food sources

Opportunities

- Strengthening community institutions
- Eco-tourism
- Marketing wild products/genetic prospecting
- National and international conservation funding
- Access to political support nationally and internationally

and cultural values, even though environmental risks – for example, from the tsetse fly – are also high at this stage.

Second, when people have levels of income well above the poverty line, they have the financial resources to maintain the physical, cultural, aesthetic and recreational values they gain from nature.

During the transition to industrialised and urbanised economies, which is coupled with democratic, social and political change, the value of many environmental goods to local communities reduces. Transition tends to involve high levels of resource use, land tenure changes and agricultural intensification, all of which reduce rural people's dependence on wild products, undermine communal tenure and increase commercial incentives to convert natural ecosystems.

At the same time, rapid urbanisation – and its accompanying problems and attractions – decreases the cultural importance of natural areas. People's aspirations begin to focus on the material advantages of urban life.

During this dynamic transition period, irreversible damage occurs. This is driven both by necessity and short-term gain, much of which proves uneconomic with hindsight.

Much of WWF's work involves preventing such irreparable damage by providing new opportunities which match the changing aspirations and conditions of communities. These range from building new communal management structures to stimulating ecotourism, and lobbying for national funding for environmental protection.

The practical opportunities and challenges of preserving vital environmental functions and biodiverse ecosystems during rapid economic change are examined in the following sections.

How can the environmental underpinning of poor people's lives be preserved?

Access to diverse environmental resources is vital for maintaining sustainable livelihoods in rural areas. However, the environment is only one of the resources in the poverty equation, and its use and abuse is governed by the availability of other assets. Poor people usually do not choose to act unsustainably – this would be self-defeating – but do so because it is their only practical and available option.

Therefore, the relationship between poverty and the basic environmental functions can only be understood in the context of other resources, assets and opportunities.

Poverty and "entitlements"

Poverty exists when people are barely able to obtain enough resources to survive physically, and thus suffer from malnutrition, poor health and very restricted economic and social choices. Another defining feature of poverty is vulnerability to external shocks such as economic crises, droughts, floods and conflict.

This definition is more useful than monetary poverty measures such as the World Bank's absolute poverty level of \$1 per day. In rural areas the majority of economic activity occurs outside formal markets, and monetary values seldom describe the extent of available resources. A person's or household's poverty, or lack of it, is dependent on the amount of resources over which they have "entitlements" (BOX 11). These entitlements do not only include environmental resources, but also social, financial, technical, market and human assets.

A lack of entitlements includes both a physical lack of assets – insufficient land to grow a surplus of crops – and an inability to

use or access available resources. Lack of access to resources may be due to many factors, for example lack of relative market power, insufficient human or animal labour to till available land, restrictive or uncertain land tenure systems, a lack of requisite skills or a lack of communal management of an open access resource.

Figure 2 (overleaf) gives a full range of assets and resources on which rural livelihoods depend, including human resources (labour, health, education), financial resources (savings, access to credit and insurance); and environmental resources (land quality, common resources, water resources).

Resources are managed by different decision makers at the individual, household or community level, and substituted for each other to balance the need for income, human welfare and buffers against external shocks. The distribution and use of resources is determined by economic factors and community/household power structures. These are seldom egalitarian, and in particular women often suffer relatively higher levels of poverty, even though they usually produce most household income.

Various proportions and mixes of assets can imply poverty or sufficiency in different situations. Environmental assets are less important than human assets for gaining urban employment. In a rural area, protection from drought can come from having access to a permanent water source, a strong social/kinship network, or sufficient financial savings to buy food on the open market.

Insufficient assets mean that people are forced to trade-off stocks of different resources in ways that preclude their ability, or their children's ability, to accumulate assets in the future – for example, not sending children to school so that they can work in the fields to produce adequate food,

or over-grazing land and degrading soils to survive this year's drought.

As with all sustainable development, sustainable poverty reduction means people can live adequately off their income without running down their assets. To achieve this, people must have access to an adequate mix of resources that can provide sufficient levels of income, welfare and stability, and therefore the ability and incentives to plan and save for the future.

Reducing poverty and protecting the local environment

Where environmental resources are under pressure and near their carrying capacity, poverty can be reduced and environmental quality maintained by providing substitute sources of income and economic stability. Figure 1 gives some illustrative examples of how WWF projects work to do this by providing a wide variety of resources to substitute for environmental over-consumption.

Techniques for more intensive use of existing land, or support for growing and marketing a higher value crop, can remove pressure for agricultural expansion and therefore preserve forested areas for other subsistence, commercial and environmental uses. For example, by engaging local communities and providing new agro-forestry techniques, the forests of Udzunga Mountains in Tanzania have been protected. This safeguards the watershed of some of Tanzania's major rivers and the basic livelihoods of downstream communities.

In Malawi, livelihoods were created by providing credit to expand the use of new bee-keeping equipment. In Mexico, uneconomic forest clearance was reduced by facilitating the formation of local unions which could negotiate better prices from chilli production.

Often the value of natural resources is high, but cannot be captured by local groups because they lack communal management regimes for fishing grounds, forest products and wildlife. Without communal management, open access resources tend to be used unsustainably, or are appropriated by commercial interests with little interest in their long-term maintenance.

In these cases WWF works to set up communal management organisations – a social resource – such as the Mikupia NGO in Nicaragua, which gives local Miskito communities a voice in the coastal management plans which protect their resources from outside interests.

Providing substitute resources may be seemingly straightforward, such as introducing "new" low intensity ploughing techniques around Lake Nakuru in Kenya, which prevents soil erosion and damage to the valuable lake ecosystem. Or it may be as complex as the long-term *People and Plants* initiative which trains ethnobotanists in developing countries, thereby providing human resources for participative community conservation projects.

However, these short descriptions underplay the complexity of these projects, which all require an integration of education/capacity building, technology/skills provision and construction of local organisations to be successful. This involves significant time and effort by an outside agency such as WWF, as well as a commitment from local people and government agencies.

The lesson to be drawn from these experiences is the feasibility of balancing poverty reduction and environmental protection at the local level. However, although such local work is vital, progress will not be sustainable unless broader political and economic problems are solved.

Much of WWF's work involves providing new opportunities which match the changing aspirations and conditions of communities.

11

The "entitlements" model of poverty

The "entitlements" model of poverty was developed by the Nobel laureate economist Amartya Sen (Sen, 1981). It is based on his observations of several large-scale famines where even though enough food was available in the country concerned, people still starved. This led him to expand the concept of poverty away from a preoccupation with absolute levels of resources, to focus on the "entitlements" different groups had to use resources – especially in times of shortages.

Under this model the immediate causes of poverty are:

- a lack of privately held assets;
- insufficient access to a sufficient quality of common resources;
- an inability to use available resources.

This model has been extended and elaborated by many researchers (for example IDS, 1997; Carney, 1997). It forms a useful basis for poverty reduction work at the local level because it connects the measure of poverty – a lack of sufficiency – to its proximate cause – a lack of entitlements over a diverse number of resources.

Figure 2

The resource base

Environmental resources: Udzungwa Mountains National Park, Tanzania

The Udzungwa mountains in central Tanzania are – where shifting cultivation has not converted them to farmland – thickly covered with forest. WWF has assisted in developing this new park and an adjoining community-based agro-forestry programme since 1990.

In addition to their timber, biodiversity and other forest products, these National Park mountains are the primary source of water for some of Tanzania's major rivers, and scores of smaller streams. All these water-courses provide thousands of people with their only sources of reliable water. Furthermore, the floodplains to the east and south-east of the mountains are sites for extensive agricultural investments, mostly irrigated by water from these major rivers. The mountains also provide water to the Kidatu Dam, the largest hydro-electricity installation in Tanzania, which supplies power to Dar-es-Salaam and other towns, cities and commercial enterprises across the country.

The forests of the Udzungwa mountains safeguard some of the country's most important supplies of water. In a socio-economic survey conducted around the park in 1997, participating local people were aware that the forested mountains were protecting their water supplies and their local climate. The best way of protecting these forests for the future is through the management of the National Park.

Environmental resources

- Fertile land
- Adequate water
- Access to "wild" biological resources
- High quality biodiversity

Social and political resources

- Community management systems
- Local democratic systems
- Local legal systems
- Local interest groups
- Kinship systems

Financial resources

- Savings
- Access to credit
- Access to insurance

Decision
INDIVI
HOUSE
COMM

PHOTO: Mark Edwards/Still Pictures

Social resources: Mikupia – the "Miskito Heart"

In Nicaragua, WWF and other organisations helped 30 coastal Miskito communities form a new non-governmental organisation – Mikupia ("Miskito Heart") – so that they could effectively participate in the design of a marine protection management plan for their coastal fishing grounds. The new management system has resulted in a reduction in excessive lobster harvesting by external fishing interests, and a recovery of stocks is beginning. WWF also helped establish an on-going forum where Mikupia and other groups can meet regularly to develop and monitor coastal fisheries management (WWF-US, 1998).

Financial resources: Malawi bee-keeping project

This project aimed to assist rural people living around the Kasungu National Park in Malawi showing them the benefits that come from maintaining the conservation area. The aim was to give people an alternative self-sustaining income-generating activity through providing extension services to modern bee-keeping techniques. To facilitate take-up of this opportunity, credit was provided and market development work undertaken to ensure adequate demand for hive products. This new industry is now self-sufficient because local people have been trained in equipment production. As well as increasing local incomes and providing honey to local consumers, the project has reduced conflicts with park staff and reduced encroachment on the park boundaries (WWF-US, 1998).



WWF-UK



PHOTO: Olga Sheean/WWF

f Human resources

- Labour
- Skills
- Health
- Education



PHOTO: Hartmut Schwarzbach/Skill Pictures

e Market resources

- Access to markets
- Marketing infrastructure
- Local Cooperatives

d Physical/technical resources

- Physical infrastructure:
 - roads, bridges, irrigation etc
- Work animals/livestock
- Tools/techniques
- Appropriate technology

Human resources: People and Plants

The *People and Plants* initiative is a long-term collaboration between WWF, UNESCO and the Royal Botanic Gardens, Kew, to provide ethnobotanical capacity to developing countries and support the sustainable use of plant resources. Funded by a wide variety of donors, *People and Plants* aims to build human capacity in developing countries so that they can catalogue and record the uses and diversity of their plant resources. This knowledge is developed in collaboration with local communities and forms the foundation of participative conservation strategies that recognise local resource uses, and the pressures on them from commercial use and trade. *People and Plants* not only has projects in Africa, Asia and Latin America, but it also runs exchange visits for researchers, prepares training and educational materials and administers practitioner workshops.

Physical/technical resources: low-impact ploughing techniques in Kenya

At Lake Nakuru, Kenya, land use in the catchment has changed rapidly over the last 20 years, moving from natural forest and large-scale agriculture to small-scale intensive agriculture. This has resulted in a degradation of the natural resource base, the most important aspect of which is rapid soil erosion. This threatens both the lake itself, which is shallow and prone to siltation, and the ability of small-scale farmers to secure an adequate living from their limited land. Increased mechanisation is partly responsible for the soil erosion problem, with soils being compressed and becoming increasingly friable. As a solution to this problem, WWF has supplied a number of community-based groups with animal traction (oxen and/or donkeys), ploughing teams and training in their use. In return, the groups undertake to provide demonstrations and training to others. Although take-up of this 'new' technology was slow at first, it is now rapidly increasing in popularity as the benefits of decreased costs and long-term improvement in soil fertility are recognised.

Market resources: chilli production in Mexico

Poor peasant communities (ejidos) were unsustainably clearing forest around the El Ocote Reserve in Mexico, eroding their natural resources without gaining long-term economic advantages. WWF assisted a union called the *Triumph of the Poor*, with a revolving credit to promote organic chilli production. The credit system has allowed farmers to regulate chilli prices, thereby increasing their returns. The income of these communities has now doubled as a result of chilli production. Improved agricultural techniques have also reduced the need for more forest clearance, which in turn reduces pressure on the reserve (WWF-US, 1998).



WWF-UK



PHOTO: E Parker/WWF-UK

Preserving vital environmental resources for local communities will not automatically conserve the associated biodiversity and ecosystems.

The consumptive use and management of wild species and biodiversity

Managing mangrove trees of high commercial value has greatly simplified the ecosystem structure of the Matang Mangrove Forest Reserve in Malaysia. By deliberately removing lower value mangrove species, the forest has become more dense and uniform. The effect of growing trees of the same age and height has destroyed the multi-canopied structure of the primary forest and with it the complex food web and ecological niches it supported.

Studies on the harvesting of non-timber forest products (for example, palm hearts and cacao seeds) along the Amazon River in Brazil have shown a halving of natural tree species diversity in managed areas. The management regime aimed to raise productivity by eliminating competitor species and encouraging the propagation of potentially commercial species.

Introduction of exotic species into freshwater ecosystems has destroyed endemic species diversity. For example, the Nile perch has lowered populations of nearly 300 local fish varieties since it was introduced into Lake Victoria. Attempts to raise populations of salmon in Canada by introducing juvenile fish into the annual return of wild fish displaced wild populations, greatly reducing the genetic diversity of the population and its resilience to disease and shocks. (Freeze, 1997)

12

Long-term protection of environmental functions and biodiversity

Providing local substitutes for destructive activities may preserve parts of the natural environment, but will not leave it unchanged. This is as true for indigenous peoples as for modern development alternatives. In particular, harvesting products from wild forests produces incentives for conservation, but also alters the composition of the natural ecosystem. In the end, creating a market for such wild products may stimulate commercial farming of previously wild species, which can have highly detrimental effects on the environment (BOX 12).

WWF is a conservation organisation and its primary purpose is to protect natural ecosystems and species. Ecosystems may also provide important services for people, but this may not require a diverse mix of plants and animals. For example, watershed protection could be achieved through establishing a plantation of monoculture trees instead of preserving native forests.

Increasing soil fertility, facilitating irrigation and preventing erosion may discourage expansion into uncultivated areas in the short term, but may also increase land values and encourage commercial development. Hydrologically "sustainable" levels of water abstraction for irrigation may in fact damage or destroy aquatic ecosystems, including commercial fish species.

This separation between providing environmental services and preserving biodiversity can be overstated because natural ecosystems are by definition usually the ecosystems best suited to the local environment. Natural ecosystems also tend to provide many different services and resources, and past attempts to engineer an

"optimal" mix of characteristics have usually failed. For example, the introduction of eucalyptus plantations into West Africa to replace slower growing local fuels resulted in soil degradation, conflicts between men and women over resource management and decreased indoor air quality when burnt.

However, it must be accepted that preserving vital environmental resources for local communities will not automatically conserve the associated biodiversity and ecosystems. Nor will concentrating on local needs be sufficient to preserve environmental services through rapid economic changes and the shift from subsistence cultivation to commercial agriculture.

Most of the value of ecological services often lies outside the local area, for example the downstream benefits of watershed protection and pollution absorption from maintaining wetlands. As countries develop, local people are likely to convert these ecosystems unless their wider value is directly reflected to them.

WWF spends half its conservation funds promoting alternative livelihoods and helping build communal management of vital environmental resources. However, to ensure the preservation of ecological services and biodiversity, these projects must go beyond providing substitutes for environmental resources: they must instead provide real opportunities to reduce poverty based directly on conservation management.

How can environmental protection become an opportunity to raise people out of poverty?

Diverse products from natural ecosystems provide many important products to the poorest groups, but if poverty reduction policies are successful this value will diminish over time. However, as traditional



PHOTO: Denise Greco

WWF spends half its conservation funds promoting alternative livelihoods and helping build communal management of vital environmental resources

13

Conservation and development synergies around Lake Nakuru

Lake Nakuru is a spectacular site for wildlife, containing 450 bird species including the renowned lesser flamingos, but is also home to one of the fastest growing industrial cities in Kenya. Migration into the area has caused serious deforestation of the lake's catchment basin, while the growing town is injecting ever-increasing quantities of sewage and industrial effluent into the lake.

Degradation of the Lake Nakuru ecosystem threatens both the wildlife and the large ecotourism industry, which attracts 112,300 visitors annually and is growing at 3.1 per cent a year.

WWF is working with local government, industry and communities to replant forests, introduce efficient stoves and reduce industrial and urban discharges in the lake, thereby protecting wildlife, subsistence livelihoods and commercial development in the future (WWF-US, 1998).

incentives for managing biodiverse ecosystems fall, they can be replaced by new incentives which reflect the value people hold for nature outside the local area.

People who do not directly use these ecosystems value natural areas higher than simplified and intensively managed ones. This higher value can compensate local users for any loss of economic benefits from not maximising the direct productivity from these areas.

Value can be captured through private donations or visitors fees, higher prices for

sustainably managed products or through political support for conservation funding, therefore increasing the resources available to improve local conditions and pay for environmental management (BOX 13).

Though a start has been made on capturing these values, many income sources and opportunities remain to be tapped. The total funds flowing from developed countries for all types of environmental protection probably amount to less than \$1.5 billion per year – just over 1 per cent of the \$110 billion per year in economic investment from the industrialised world in 1996.

Grasping these opportunities requires capturing people's value for nature in real financial terms.

The Global Environment Facility – a big mandate with a small budget

The Global Environment Facility (GEF) was set up as part of the UN system in 1991 to fund environmental protection projects in the areas of climate change, ozone depletion, international waters and biodiversity. This is a huge mandate, but the GEF only receives around \$700 million per year from the industrialised countries – less than the cost of a medium-sized power station.

Based on the level of GEF contributions, every person in the donating countries values the whole global environment at less than 75 US cents per year. Even this is an overstatement because although funds are meant to be additional, much of the GEF's spending on biodiversity seems to have been diverted from existing aid budgets for conservation (BirdLife, 1997).

Commercial benefits from traditional health care

The Kani tribal people who live in the south-western Ghat region of Kerala use the fruits of a plant known locally as Arogyapacha as a source of energy. Seeing the commercial potential of this plant, scientists from the Tropical Botanic Garden and Research Institute (TBGRI) entered into a "benefit sharing" agreement with the Kani.

Under the terms of this agreement, TBGRI would carry out scientific trials on Arogyapacha, and if this resulted in a marketable product, the proceeds would be shared with the tribe. The initial trials proved successful and the manufacturing licence fee for the "Jeevani" product is shared between TBGRI and the Kani.

Since the medicinal properties of Arogyapacha only develop if it is cultivated in natural forests, this commercialisation has also generated powerful incentives for forest conservation. (WWF International, 1998a).

14

The range of extra opportunities presented by conservation programmes are listed below, and examples are given in Figure 3 opposite:

New local enterprises: eco-tourism, hunting, recreation areas and commercial harvesting of wild products create employment and the potential for significant revenues. WWF aims to help local people gain from these ventures, not outsiders, and to ensure that in areas such as the Masai Mara, tourism revenues provide compensation for wildlife predation and support for community programmes.

New community organisations: to manage local wildlife and resources sustainably, natural habitat must often remain communally owned and not be split into private plots or opened to uncontrolled access. This requires new communal management organisations, which is a time-consuming and complex task – but, as is shown by the CAMPFIRE case in Zimbabwe, can provide a powerful voice in support of other development initiatives.

National support for conservation and ecosystem services: ecosystem services provided to non-local populations provide a justification for extra government spending in these areas – for example, the protection of watersheds by montane forests, and flood protection and fish stock support by coastal mangrove forests. In 1992 the Brazilian state of Paraná began to base a proportion of tax revenues flowing to municipalities based on their level of conservation.

Access to international funds: people express their value for nature by donating money to organisations such as WWF, and mandating their governments to support conservation from tax revenues. Governments do this through development assistance or multilateral funds such as the Global Environment Facility (BOX 14). Funds are now often being channelled through trust funds which provide income to people in and

around conservation areas – for example the Mgahinga Bwindi Impenetrable Forest Trust.

There is great potential in expanding these sources of support, but WWF does not consider genetic prospecting for pharmaceuticals to be a major direct source of funding for conservation. Although 20-50 per cent of current medicines were originally derived from plants, the actual market value of genetic resources is very low – perhaps \$20 per species used – and is constantly being undermined by advances in synthetic engineering of new drugs (Blench, 1998).

Once a species has been harvested, there is no incentive for preserving it *in situ* if the active ingredient can be synthesised artificially. Any revenues from "benefit sharing" of profits are therefore unlikely to support conservation. While the promise of future drugs remains a strong reason for preserving biodiversity, this is more likely to be accomplished through official conservation funding than direct market incentives.

Local communities are more likely to benefit directly from the market in herbal medicines and derived products, such as the successful exploitation of the "Jeevani" drug in India (BOX 15). Nearly 7,000 plants are known to be used for health care by India's 440 tribal groups, and the global market for such products is huge. Intellectual property rights legislation means it is easier for communities to protect their commercial rights to a herbal drug than a derived product. However, direct incentives for conservation can still be mixed if intensive production is undertaken.

Institutions for providing sustainable conservation incentives

Grasping these opportunities requires capturing people's value for nature in real financial terms, then directing it in a way that provides the correct incentives at local and

Figure 3

Capturing biodiversity and conservation values at the local level

Capturing local benefits: ecological tourism in the Masai Mara

The establishment of the Masai Mara National Reserve (MMNR) in Kenya deprived the pastoralist Masai of grazing land, access to water sources and traditional utilisation of wildlife. This situation has resulted in conflicts between the rural pastoralists and the park management authorities. The Masai particularly resent livestock predation from animals notionally “living” in the park, even though this has always been a feature of their lives. Losses by species as a percentage of the livestock holdings accounted for 0.39 per cent cattle; 5.6 per cent sheep and goats, and 4.23 per cent donkeys. Overall losses accounted for 1.2 per cent of total livestock holdings.

These losses, and the associated costs of guarding animals, are easily outweighed by the money tourists bring to the park: wildlife tourism is Kenya’s largest foreign exchange earner. However, these revenues mostly go to tour operators, hotels and “cultural villages”. Even the proportion of gate revenues reserved for the Masai flow to their tribal leaders and rarely to those affected.

WWF is working to reverse this trend and ensure the Masai are compensated for losses brought about by the MMNR park, and gain real community improvements such as clinics and schools.

Empowerment through conservation: CAMPFIRE in Zimbabwe

CAMPFIRE (Communal Areas Management Programme For Indigenous Resources) is run by a collaborative group of organisations including local NGOs, government departments, research institutions and WWF. Although established to conserve wildlife, CAMPFIRE has led to the restructuring of control over Zimbabwe’s countryside. The programme aims to empower rural communities living on impoverished communal lands to claim ownership of wildlife sharing their land. This in turn leads communities to manage wildlife as an asset, rather than see it as a threat or competitor. However, CAMPFIRE has now also become a powerful movement, influencing reforms in the administrative structure of communal areas and giving local people a voice at international level. For example, CAMPFIRE is represented at meetings of the Convention on International Trade in Endangered Species (CITES), defending the rights of local people to use and trade the wildlife they control.



Capturing national conservation values: hypothecated ecological taxes in Brazil

In 1992 the Brazilian state of Paraná introduced a new scheme whereby 5 per cent of the revenues from the general sales tax was diverted to ecological purposes. The ICMS tax (Tax on the Circulation of Goods and Services) represents over 90 per cent of the tax earnings of Brazilian states. Before 1992 a quarter of these revenues were distributed to municipalities (5,024 alone in Paraná) based on the value-added generated by economic activities. This method of distribution therefore penalised municipalities with land-use restrictions due to existing protected areas.

Under the new scheme, 5 per cent of the ICMS is distributed, based upon ecological criteria: one related to the number of conservation units in the municipality and one related to water reserves which supply urban areas. So the new tax system both reduces the previous perverse incentives and supports the enhancement of local ecosystem services and quality. A WWF project funded by the UK’s DARWIN initiative is investigating the Brazilian-wide application of ICMS (WWF International, 1998a).

Capturing international conservation values: Mgahinga Bwindi Impenetrable Forest Trust

The Bwindi Impenetrable National Park (BINP) in south-western Uganda supports at least 120 species of mammal, including the mountain gorilla.

However, the BINP is surrounded by high-density populations ranging from 151 to 301 people per square kilometre. In 1991 local communities lost their limited access when the government declared it a National Park and this led to increased conflicts with the park authorities. To resolve these problems a programme of community-based conservation incentives was introduced including giving controlled access to specified resources in the park; sharing of park revenues; establishing an alternative livelihoods programme; and direct grants from a trust fund.

The Mgahinga Bwindi Impenetrable Forest Trust is a \$4 million endowment fund set up by the World Bank using GEF funds. It aims to demonstrate the value of the park to local groups by providing a stream of grants and assistance. Although useful in principle, this trust fund has yet to produce many real results – mainly because of its small size, large overhead costs (taking 75 per cent of trust income!), and the perception that it was established to benefit the parks rather than the local communities (WWF International, 1998a).

regional levels. Early WWF ICDPs showed that direct financial compensation schemes rarely resulted in environmental protection or sustainable poverty reduction. Better results are obtained when long-term funding is linked directly to environmental management.

This is a far more complex task. Giving strong local incentives requires establishing a degree of local control over resources. Ensuring conservation means that local institutions must be motivated to achieve these goals and have access to the necessary financial, social and technical resources.

Transferring control over resource use to local communities requires changes in national and regional laws which may be opposed by other political interests. For example, the passing of a conservancy act in Namibia in 1996 helped consolidate existing WWF projects for the

community management of rhino populations. Building motivation and institutions for conservation requires community buy-in to the project – but communities are often initially suspicious of promises from outsiders that they will benefit from restrictions on, or have greater responsibility for, their use of resources. Especially when there is a history of distrust between locals and government authorities.

Achieving trust and cooperation requires open negotiations with the affected communities to agree a conservation and development plan. This process differs from that used in participatory rural development projects, which aim to discover a community's development goals and facilitate reaching them. ICDPs involve engaging a community to achieve conservation goals, which may or

may not be in conflict with that community's original development interests.

Negotiation will involve compromise and changes in both conservation and development goals. It must be a balanced, non-coercive process which benefits all parties or the plan will not work. The negotiation process is complicated by the fact that rights to resources are often contested; authority and legitimacy in communities is unclear; and tradition excludes many vital environmental actors – especially women – from being involved.

The legitimacy and usefulness of the negotiation process can also be undermined by the disparate level of resources, power and influence between the incoming agency and the local populations (Chambers, 1997). WWF attempts to solve these problems by using local intermediaries, capacity building, empowering marginalised groups and helping local organisations (BOX 16).

Establishing accountable local institutions is vital to achieving and balancing environmental and development goals in the longer term. These institutions will not only coordinate the use of open access resources – forestry, fisheries and wildlife – but also ensure that financial and employment opportunities from communal conservation efforts are shared fairly and efficiently.

In many cases these institutions have also given a new and powerful voice to previously marginalised constituencies. Protection of environmental resources requires cooperation between unusual constituencies, cutting across normal interest and political lines. It also leads to the empowerment of marginalised groups such as women and indigenous people.

Examples given here from as far apart as Kenya and Nicaragua have shown how



People in Papua New Guinea prepare a seasonal calendar depicting changes in river flows and climate, and times for harvesting and flowering.

community institutions formed to protect natural resources have gone on to press for greater rights such as improved land tenure. The value all people hold for the natural environment means that conservation issues gain significant political support nationally and internationally.

It is perhaps these political opportunities, as much as new funding sources, which provide some of the most exciting opportunities for combining environmental protection and conservation with real, sustainable poverty reduction.

What are the main challenges to integrating poverty elimination with environmental protection?

The above analysis is based on extensive research by WWF on the impact of its field programme. Although detailed structure of successful projects is complex and determined by local conditions, several key themes emerge:

There are many ways to link poverty and environmental goals: the problem of integrating these objectives is not that they must be traded-off against each other, but that achieving the many available win-win options requires greater levels of organisation and coordination at all levels than environmentally destructive development paths.

Working at the local level is not sufficient: although local ICDPs have been successful, they are vulnerable to economic and political forces outside the area, and need the support of financial and legal structures at regional and national level. Local projects must be dynamic and take account of wider economic, social and demographic changes which will alter local values, prices, opportunities and aspirations.

Conflict resolution is a key part of conservation: protection of environmental resources, whether for basic livelihoods or "pure" biodiversity objectives, creates conflicts. Traditionally these have been between locals and official resource managers. But as conservation becomes more community-based, economic and demographic change will increase conflicts between residents, migrants and commercial resource users.

Local institution-building is vital for sustainable management: building strong local resource management institutions is vital for achieving practical management objectives that ensure equity and provide a cohesive voice for local resource users. Although these must be socially sustainable, such institutions may require long-term funding or fiscal incentives to secure conservation objectives which benefit non-local users.

WWF is addressing the implications of this analysis as follows:

6 MAKING A BIGGER DIFFERENCE: FROM LOCAL ICDPS TO AN ECOREGIONAL APPROACH?

Experience over the last decade has shown that integrating poverty reduction and environmental protection is possible at the local level, but this approach will never successfully tackle the massive economic and social forces driving environmental damage on its own.

WWF is investigating the feasibility of working at an ecoregional level, where the ecological integrity of a large biologically consistent area is taken as the starting point for action. These areas often cross political boundaries – especially marine, watershed and riverine ecoregions – and thus present important challenges in political coordination (BOX 17).

16 Representation and conflict in Namibia

The Living in a Finite Environment (LIFE) programme in Namibia is a six-year initiative providing training, technical assistance and grants to local organisations and communities to support equitable and sustainable development.

In the Nyae Nyae community, WWF originally worked with a representative council set up by the local farmers' cooperative. But it became clear that this council was actually far removed from the people it claimed to represent, and LIFE staff had to facilitate institutional change to increase community control. In East Caprivi, a local NGO started conservation and development activities with the chiefs of two tribes. However, the NGO soon became involved in a power struggle between the two groups over social and ecological boundaries. These conflicts were minimised by the formation of a resource management committee, supported by LIFE, where the chiefs were removed from day-to-day decision making (WWF-US, 1998).

Negotiation involves compromise. It must be a balanced, non-coercive process which benefits all parties or the plan will not work.

17 What is an ecoregion?

"An ecoregion is a relatively large unit of land or water containing a characteristic set of natural communities that share a large majority of their species, dynamics and environmental conditions. Ecoregions function effectively as conservation units at regional scales because they encompass similar biological communities and because their boundaries roughly coincide with the area over which key ecological processes most strongly interact"

– WWF in Conservation Biology, Volume 12(3), June 1998.

People-centred forest management in Oaxaca, Mexico

Covering parts of two ecoregions, the Oaxaca programme includes a huge variety of forest ecosystems, not least the Chimalapas tropical forests and the Sierra Norte cloud forests. With funding from several official donors, WWF is working with 10 local partners over an area the size of Portugal to improve farming methods and forestry, and provide sustainable sources of new income. The aim is to reduce pressure on the forests by improving the livelihoods of the estimated 45,000 mainly indigenous inhabitants who live in and around them.

This programme represents a serious challenge for WWF. Not only are there conflicts between the indigenous groups and outsiders who are trying to move in, but there are also some serious internal tensions over the management of communal resources. The aim of the programme is to ensure these conflicts are resolved without the escalation into violence that has been seen in neighbouring Chiapas.

The functions of civil society

Civil society is a broad term covering groups such as NGOs, cooperatives, unions and grassroots organisations. Civil society tends to emerge when markets begin to dominate exchange transactions – changing and replacing traditional economic and social relations.

The growth of civil society provides new ways to ensure representation, security, access to resources and provision of services, which may once have been provided by family, village or communal group structures.

A comprehensive and strong set of civil society functions is vital for achieving sustainable development. Civil society provides a “social marketplace” where non-market values can be expressed and articulated. This shapes the outputs and distribution of the economic system, and protects people from the harshest excesses of market forces.

This is essential when considering issues of land and natural resource use. In the absence of mediating civil society institutions, subsistence or low income groups will be unable to compete in the economic or political marketplace against highly capitalised commercial resource users (WWF-UK, 1998f).

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Approaching environmental management at the ecoregional level does not preclude local action. However, to really impact the environment at this scale requires support and funding of local agencies, NGOs and networks that work directly with local communities. In the Oaxaca project WWF works with 10 local agencies to cover an area the size of Portugal containing more than 45,000 inhabitants (BOX 18).

Of course, not all countries have the necessary networks of civil society groups to act as intermediaries, so in many areas WWF remains engaged directly at the local level until appropriate institutions can be built. This requires work above the local community management level, facilitating the emergence of a vibrant and representative civil society in the area (BOX 19).

Enhancing meso-level institutions

An ecoregional approach implies greater efforts to create the right legal, political and economic frameworks for sustainable development at regional, national and international levels. It concentrates on reducing unsustainable consumption, eliminating destructive subsidies and putting in place legal and fiscal incentives for local conservation.

However, although high-level reforms are necessary conditions for progress, they are not sufficient to enable successful local improvement. This will require more attention to the functioning of meso-level institutions. These include regional, municipal, local governments and agencies which directly control planning functions, resource use and regulate commercial activity.

Failures in the meso-level are often the major cause of poverty and related environmental degradation – for example, bad planning decisions, failure to enforce environmental

regulations or land rights and corruption associated with assigning natural resource concessions.

Increasing the power of truly representative civil society groups to articulate interests from the local level into meso-level institutions can expose these deficiencies and promote reform.

Enhancing meso-level institutions can give powerful support to grassroots development processes – for example, increasing the responsiveness of local governance structures, provision of micro- and rural credit facilities, enabling of cooperatives, implementing communal resource management, enacting localised charges and subsidies based on environmental factors (BOX 20).

Some of the greatest challenges for the new poverty and environment agenda are at the meso-level. It is here that economic and demographic planning needs to occur, where disputes over resource rights will usually be resolved, and where local action can be enabled at a significant scale to make a real difference. For example, the spread of participatory Forest Protection Committees in India was driven from state level and below, and now covers at least 4.04 million hectares of forest involving 40,300 village level FPCs (WWF International, 1998a).

Reconciling local conflicts between poverty and conservation at the ecoregional level

Resolving conflicts between local livelihoods and conservation requires significant investment of time, energy and resources. There is a danger that in moving to work at a larger scale, WWF’s resources will be spread too thinly, leading to lower standards, less successful interventions and unresolved tensions at the local level. This would reduce the conservation impact of our work, while

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the only benefit to the area would be the temporary influx of project funds.

The ecoregional approach will require a greater focus on the driving forces of environmental destruction and poverty at the trans-national, national and sub-national government level. This is potentially more politically controversial than local level work. It will also be harder to ensure local poverty reduction goals are met when resources are spread over a wider area, and over more diverse activities such as political campaigning, communication and education.

WWF hopes to demonstrate successful development strategies, and that high-profile failures damage our future ability to make an impact. A tension therefore arises between putting adequate resources into a limited number of ecoregions to demonstrate a successful holistic approach, and spreading resources on local interventions over a larger area – especially as the dispersed approach may result in greater direct environmental

protection, and more certainty in local impacts and poverty reduction.

Achieving goals at the ecoregional level will require partnerships with other civil society groups at the national level, and increased working through partner groups at local and grassroots level. However, the strategic and logistical practicalities of scaling up programmes to this level remain to be resolved, and the utility of focusing on biological rather than political boundaries needs to be assessed.

7 DO NUMBERS MATTER? THE IMPACT OF DEMOGRAPHIC PRESSURES ON ENVIRONMENTAL PROJECTS

Despite recent reductions in growth rates, global population is still rising fast, with an average doubling time of 47 years. More than 95 per cent of growth is expected to be in developing countries, and stabilisation is not anticipated until populations have at least doubled to over 10 billion people.

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Incentives for private conservation in Colombia

Although still in its formative stages and very under-resourced, the system of forestry taxation in Colombia could potentially give valuable incentives to private landowners to preserve natural forests and ecological functions on their land.

Deductions from income tax may be made for reforestation, even though the income level this applies to excludes the vast majority of land owners. However, the central government has also introduced “Certificates of Forest Incentives” where the costs of maintaining natural forest ecosystems may be compensated once they are certified by the environmental agency.

Local municipalities have also introduced a number of deductions from property taxes to encourage forest and watershed protection. These municipal efforts are more likely to impact on small private owners and the efforts of local NGOs than national schemes. However, there remains the serious problem that those without secure land title cannot benefit from such incentives, thus increasing incentives for unsustainable use in disputed areas (WWF International, 1998a).

High reproductive rates are linked to a lack of basic healthcare, low formal education and a lack of development opportunities, especially for girls and women.





WWF-UK

Family planning clinics such as this one in Tanzania provide essential services that enable women to have greater choice and a higher quality of life.

degradation and accompanying poverty will merely be postponed.

The magnet effect of successful conservation, due to preserved natural resources or available income generating schemes such as ecotourism, is a serious problem. Competition for resources causes conflict and tension between groups – and the disruption of social networks can further undermine community management regimes (BOX 21).

Without policies addressing demographic issues at the national and meso-level, successful conservation will merely attract impoverished migrants from areas where environmental degradation has gone unchecked. WWF is starting to develop approaches to working with local family planning groups, and engaging meso-level authorities in planning for demographic change.

WWF has no desire to be involved in forcibly excluding migrants from settling around conservation areas, even if this were given legitimacy by government bodies. But unless conflict with existing residents is to go unchecked and conservation undermined, WWF will have to attempt to resolve disputes between these groups. At the same time, alternative resources will have to be found for migrant groups, or more comprehensive environmental protection strategies devised to ensure that resource-driven migration is reduced.

Demographic issues cannot be avoided if poverty reduction and environmental protection are to be sustainable. However, the problems of migration challenges, and to an extent undermines, the practice of defining development programmes around the notion of local communities. The only solution to this must be to work to prevent migration before it occurs, or to attract it to areas capable of absorbing higher population levels.

Although the issue of limiting population growth is highly charged, there is no doubt that demographic change – which includes both growth and migration in populations – is placing severe pressure on environmental resources in many areas. This does not preclude examples where increased population reduces soil erosion and deforestation by altering incentives and providing more labour. However, WWF's experience is that this is the exception rather than the rule when demographic change is rapid.

In urban areas, increased density of populations is a cause of many local environmental problems, especially water and air pollution. In rural areas, the main environmental problems are those of soil degradation, deforestation and overuse of communal resources such as fisheries.

WWF has not addressed demographic change adequately in the past and many of our projects are now under significant pressure. Nor are these issues often recognised in local or meso-level development plans by local authorities, even though population growth – if not migration – is predictable and thus can be planned for in the longer term.

Recent WWF research in nine countries found a lack of good local demographic data –

especially on migration – and virtually no information on environment and population links. There was often hostility, stemming from colonial times, to the collection of such data (WWF, 1998b).

High reproductive rates were linked to a lack of basic healthcare, low formal education and a lack of development opportunities, especially for girls and women. In many areas these problems are exacerbated by the temporary migration of men out of the area in search of cash employment. This increases the pressure on women and encourages them to withdraw children (especially girls) from school in order to help in the home or fields.

The research also showed a predictable pattern of the poorest groups being moved onto the most marginal or least developed land, which is also where the last natural ecosystems exist. Left unchecked, it is likely that populations will increase until resources have been depleted – when impoverished families will be forced to migrate.

These problems cannot simply be solved using ICDP approaches to reduce resource dependence and increase incomes. Without policies addressing demographic issues – and particularly migration by people drawn to the conserved resources – environmental

8 WHOSE ENVIRONMENT? DEALING WITH CONTESTED RIGHTS TO CONTROL NATURAL RESOURCES

The issue of migration is not a new one, and the problems of dealing with conflicts over natural resources are on-going – especially in areas inhabited by indigenous people. However, there is a difference between “normal” migration involving people with similar development aspirations, and “colonial” resource conflicts over how the environment should be used, and who has the right to benefit from the resource.

Normal migration raises issues of providing development alternatives which satisfy basic needs. Colonial resource conflicts pit the rights of local and indigenous people to decide on their resource use patterns against the economic and political imperatives of outside actors.

Indigenous people’s rights and environmental protection

Indigenous people inhabit nearly 20 per cent of the planet’s surface, and in general have maintained a biologically diverse environment. But their lands are increasingly under threat from developers and settlers.

Indigenous people often do not have direct legal control over their land or communal resources. Historical or traditional rights have been usurped by national or previous colonial governments. Even when land rights are granted, they are often not enforced by legal authorities, and policies exist which encourage increased settlement into these areas.

These settlers live more densely than traditional land users and cause more destruction to natural ecosystems. Often their farming or herding activities are unsustainable because they are unfamiliar with the local ecology, or do not expect to be in the area for long. Absolute poverty is often

high among these migrants. However, encroachment on traditional areas is also driven by commercial interests clearing land for export agriculture or forestry.

WWF has a policy of supporting indigenous people’s land and resource use rights (BOX 22), only working with governments which uphold their right to give “prior informed consent” before land is developed or conserved. However, pressures on indigenous people’s livelihoods are increasing, and it is harder for these groups to keep to their traditional sustainable way of life.

WWF promises to support indigenous people’s resource rights “whilst respecting national sovereignty and conforming to national conservation and development objectives”. It is relatively simple to support indigenous people who are protecting their land against destructive settlement – but should an indigenous group be allowed to sell its land for development when this goes against national environmental protection plans?

While a rights-based approach has done much to increase the voice of indigenous people, who are still discriminated against and exploited around the world, it does not provide solutions to development or environmental dilemmas. While working to preserve their rights, WWF also hopes to work constructively with indigenous people to find sustainable development paths which preserve the best of their cultures and environment, while reducing poverty and improving human welfare.

The situation of indigenous people is a particularly stark version of the general conflicts between the legitimate rights of different groups over and around natural resources. Credible political institutions are needed to resolve these disputes if they are not to descend into the type of open conflicts seen in the Chiapas area of Mexico.

21 *Conflict and conservation in Madagascar*

Migrants from Madagascar’s denuded uplands and drought affected areas have been attracted to the Zombitse and Vohibasta forest reserves in the south of the country. Conflict has arisen as migrants clear the forest for short-term maize production, depriving already resident groups of grazing and protection for their cattle.

Forest loss is leading to soil erosion, gully erosion and stream siltation. WWF has worked to set up communal forest management through traditional village systems, improve maize growing techniques and supply alternative crops. Basic family planning and health care provision has been provided by local NGOs involved in the project. However, the issue of migration has yet to be adequately addressed (WWF-UK, 1998c).

Indigenous people inhabit nearly 20 per cent of the planet’s surface, and in general have maintained a biologically diverse environment.

22 *WWF principles on indigenous peoples and conservation*

“WWF acknowledges that, without recognition of the rights of indigenous peoples, no constructive agreements can be drawn up between conservation organisations and indigenous peoples groups.

Since indigenous peoples are often discriminated against and politically marginalised, WWF is committed to make special efforts to respect, protect and comply with their basic human rights and customary as well as resource rights” – WWF International, 1996

Hydrovia waterway project

The Paraguay-Parana "Hydrovia" waterway project aims to develop a complex navigation system from Caceres, Brazil, to Nueva Palmira in Uruguay. Of questionable economic value, this project will cause serious harm to the ecosystem of the La Plata Basin if poorly designed. WWF has lobbied the Intergovernmental Committee on Hydrovia, which represents the governments of Argentina, Bolivia, Brazil, Paraguay and Uruguay, to change the final design of the project. WWF, with the support of a team of 25 international consultants, has reviewed Hydrovia's Environmental Impact Assessment (EIA) – and has identified major flaws which makes it unfeasible to be used as a technical base for the construction of a 3,400-kilometre waterway. WWF's ultimate goal is not to stop navigation in La Plata Basin, but to force the proposers and funders of the project to undertake a proper environmental assessment.

The P&O port development in Vadhaven

Following a concerted campaign by WWF, P&O has announced that it is pulling out of a controversial project to build one of the world's largest ports in a protected area in India.

The port project at Vadhaven in the state of Maharashtra was also vehemently opposed by local people. It threatened to destroy one of the last wildlife havens on the west coast of India and ruin the livelihoods of the fishing communities and Warli indigenous people.

Even though P&O had the option of seven other sites on which to construct the 30-berth port, the company had insisted on forging ahead with the project on the legally protected site of Vadhaven. This was despite an internal report which concluded that it would "destroy the existing self-sufficient and sustainable economies of the villages" and that "the construction of the port will cause irrevocable environmental damage to the surrounding coastline".

Then the Dahanu Taluka Environment Protection Authority, an independent body set up by India's Supreme Court, declared that "construction of such a mega port at Vadhaven is wholly impermissible and therefore will be illegal".

Local groups felt greatly empowered by WWF's support in India and the UK, and the decision by P&O to abandon the project is a remarkable victory for the environment, the directly affected local people, and WWF.

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Balancing local needs and national development

Working at the ecoregional level involves considering overall development planning for the region. This is far more politically sensitive than local level interventions.

The benefits of oil and mineral development and timber concessions generally accrue to governments, national or international investors. If they increase national economic output, this tends to flow to urban areas and seldom trickles down to local communities adversely affected by the development.

All governments exercise the right to forcibly trade-off the welfare of one group for the "greater good" of the country, although they usually attempt to compensate the affected group. Such compensation schemes have seldom proved effective. For example, there has been no resettlement scheme to make way for a major dam which has maintained the original standard of living of the community involved.

In fact the environmental and social assessments of most major development schemes have usually been deficient, whether in developed or developing countries, resulting in unequal benefits and high levels of resistance from disadvantaged populations (BOX 23).

At the local level, WWF can champion the cause of impoverished and marginalised communities. In this way livelihoods and the environment for those groups can be improved. However, there is no way that WWF – or any other agency – could compensate a country for not developing an oil field or mineral deposit in an environmentally sensitive area. For example, the currently planned pipeline from Chad's oil fields to the coast will run through several protected areas and open them up to development and settlers.

Currently, conflicts over such developments tend to take on an absolutist character, with NGOs supporting the affected local population and governments supporting development. Too little effort is put into assessing alternative investments and changes to development plans.

As with the evolution of WWF's ICDP programme, the debate should move away from providing compensation, and towards imaginative development alternatives which achieve combined environmental, social and development goals. Only then will governments be fulfilling their Rio commitment to pursue sustainable development.

Such progress requires the rights of local communities to be given higher priority in development planning. This must be combined at the meso-level with identification of development alternatives with equally high benefits, though with a different mixture and distribution.

These are highly political debates, and best carried out between national civil society groups and local authorities. WWF sees its role as combining direct lobbying, facilitating the participation of local groups, pressing governments to respect community rights in the process and, if international investors are involved, putting pressure on them to act responsibly (BOX 24).

9 CONCLUSIONS

The debate on poverty elimination and the environment has to move from general statements to practical plans for achieving the goals of sustainable development. Action is needed at many levels including changing consumption patterns in developed countries and development paths in industrialising countries. All governments have a responsibility to address the

environmental aspects of poverty, and it is time to move from the politics of blame to the politics of solutions.

But solutions also require frank discussion of the difficulties in providing development which achieves environmental and poverty reduction goals. It is not that these goals must necessarily be traded-off against each other, but that they are both equally hard to achieve.

There is a shared consensus that traditional economic growth will not on its own reduce poverty, and that it currently undermines the environmental underpinning of sustainable livelihoods. Changing patterns of economic growth will take profound political and institutional reforms. The components of this are similar for achieving both environmental protection and poverty reduction: better regulation; empowerment of marginalised groups; investment in human capital; provision of public goods; sensitivity to local circumstances; and the challenging of vested interests.

Poverty reduction and environmental programmes must therefore be integrated with national economic development strategies – and not be a ghetto of aid-subsidised projects. The focus of official aid programmes must shift towards activities which enable local initiatives and building capacity, rather than more traditional direct support for local level projects.

As a priority, the developed world must ensure international systems of trade, finance and investment support and national sustainable development strategies, rather than undermining them. Another important focus must be the promotion of basic human and political rights at the national level to ensure that marginalised groups are heard.

Although these high-level reforms are necessary conditions for progress, they are

not sufficient to improve conditions on the ground. Many successful projects have been run at the local level which protect the environment and reduce poverty. However, these cannot always adequately compensate for increased environmental pressures from economic and demographic change.

These challenges must also be met at the meso-level. It is here that economic and demographic planning needs to occur, where disputes over resource rights will usually be resolved, and where local action can be enabled on a significant scale to make a real difference.

Failures at the meso-level are often the major cause of poverty and related environmental degradation. On the other hand, enhancing meso-level institutions can give powerful support to grassroots development processes.

The spirit of the Rio Conference has faded over the past six years, due to recriminations over aid financing. However, the OECD poverty reduction commitments present an opportunity to reinvigorate the integration of environment and poverty elimination objectives by recognising that environmental sustainability cannot be achieved without poverty elimination, and visa-versa.

The environmental movement has much to offer development agencies in the official and NGO sector: A new political constituency in North and South. A common cause between rich and poor. A new paradigm of development focused on people's needs rather than their wants. And a justification for additional funding for poverty reduction programmes.

WWF looks forward to working in new ways and in new partnerships on these issues. We also look forward to facing these real – and difficult – issues, and to escaping from the unproductive debates and mistrust of the past.

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FACING THE REAL ISSUES

POVERTY ELIMINATION

AND THE
ENVIRONMENT

Too often, environmental protection is portrayed as a brake on economic development, or a concern of the rich middle classes. But it is the world's poor who directly depend on the natural environment, and who are most at risk from the impacts of climate change, pollution and uncontrolled resource use.

The number of people in absolute poverty has grown to 1.3 billion. Poor people suffering from a low quality environment are often forced to pollute or use resources unsustainably because they have no alternative for survival, especially in times of crisis or conflict. This environmental degradation is a symptom of poverty – not its ultimate cause.

Destroying the world's remaining natural ecosystems will not raise the poor into prosperity. Neither will keeping people in poverty preserve the natural world. This WWF report argues that responsibility for this continuing destruction lies with the wasteful over-consumption of rich countries, and the failure of developing countries to address fundamental environmental issues which impact upon their poorest citizens. Responsibility for finding solutions lies with everybody – but finding solutions requires informed dialogue that avoids the politics of blame and faces up to the real issues of poverty and the environment.



WWF works to reconcile the
needs of people with the
conservation of the natural
environment upon which
they depend.