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Presentation

The May 2004 External Review of IUCN recommended three separate but complementary reviews to strengthen IUCN's ability to adequately address livelihood-poverty-conservation issues. The first of these is a review of the social and economic sciences that IUCN needs to mainstream poverty-environment into the IUCN programme. This review started in August 2004, and a summary of work in progress was presented to the Programme Committee of the IUCN Third World Conservation Congress in Bangkok in November 2004. The present report contains the final version of the review.

The review builds on the IUCN 3I-C (Innovation, Integration, Information, Communication) project

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Executive summary

The main findings of the review can be summarized under seven headings:

1.

specific ecosystems. Conflicts can also arise in the reverse situation of resource scarcity, for example when land or water is limited and conflicts break out. Even within a single village or group of people, there will be many competing claims on natural resources, so the phrase "community" must be used advisedly and not romanticise the complexity of natural resource use.

There are some cases when improved livelihoods and enhanced conservation are not necessarily coincidental and there are trade-offs. Indeed if win-wins were as ubiquitous as some suggest then it is not clear why the environment continues to degrade in so many ways. The IUCN Vth World Protected Areas Congress (Durban, 2003) highlighted many equity

3. How to achieve pro-poor environmental change

There are ways to achieve pro-poor environmental outcomes. This requires gender equity, rights for poor people to natural resources and access to markets, credit, technology and knowledge.

This can be achieved by pressure from below by poor people themselves, often supported by civil society, and the formation of alliances with progressive politicians, government, the

mobilising civil society and the media to focus on environmental outcomes that matter to the

Part 1: State of the art knowledge of the global poverty-environment debate

By Paul Steele

1.1 Summary

There is a growing array of work and experien

The MDGs embody a greater commitment to measuring pro-poor outcomes and there is a growing debate about systems of poverty-environment indicators. IUCN can play a role in supporting the development and application of such poverty-environment indicators, and judge its performance in terms of such indicators. So that, for example, country offices in relevant countries are judged not by their funds raised or staff size, but their effectiveness in contributing to the MDGs and achieving pro-poor environmental outcomes (see section 1.4.3).

The poverty debate has highlighted the importance of strategic macro processes and decisions, so

fodder for animals. A recent review of 54 forestry studies found that these natural resources provide an average of 22% of household income (see section 1.5.1).

Poverty-environment issues have a clear gender dimension with declining resource availability such as water and fuel wood leading to increased time spent by women and children in collection activities (section 1.5.1).

Poverty-environment analysis highlights the complex linkages between natural resources and growth. In general, natural resources provide a "safety net" for the poorest, but it is not clear that they really provide a long-term route out of poverty. Macro linkages between natural resources and growth have shown to be complicated by the so-called resource curse, requiring political reforms to be overcome (see section 1.5.2).

Much poverty-environment literature is starting to develop a more complex analysis of poverty and household dynamics stressing heterogeneity (for example on gender lines) and existing conflicts among many resource users. This needs to be thoroughly reflected in IUCN's work on natural resource management (NRM) avoiding the sometimes naïve assumptions about harmonious "communities" (see section 1.5.3)

The linkages between poverty, environment and population are receiving some attention, but generalisations are difficult and often misleading. The fear of population growth has been tempered by those who have argued that higher population density can drive technical progress and other improvements. However, the larger impact of population pressure on NRM regimes and on agricultural extensification

needs to work more constructively with other groups who have expertise in these areas to help overcome these challenges (see section 1.6.3).

Constraints on the poor's gains from natural resources are exacerbated by state policies including lack of investment in marginal rural areas, regressive taxation on poor people's natural resource activities and blaming the poor (often wrongly) for natural resource degradation. The latter issue is an area where IUCN should have comparative advantage to address by providing objective scientific advice and challenging anti-poor environmental regulations and enforcement (see section 1.6.4).

1.1.4 How can pro-poor natural resource outcomes be achieved? Identifying the drivers of change

This report argues that a growing body of research demonstrates that achieving pro-poor natural resource outcomes depends on pro-poor political changes. These can be achieved by a number of approaches but require IUCN to work in innovative alliances and coalitions with the poor themselves, other civil society groups, progressive political institutions and with development agencies (see section 1.7).

1.2 Introduction and objective of this review

1.2.1 Objectives

The overall purpose of this review is to identify ways in which IUCN can improve the impact and influence of its work on the poverty-environment links, including considerations of gender equity. This section will provide better understanding of the leading areas of research and practice globally in the area of poverty and environment. It will provide a landscape analysis of what the state of the art is in the area of 1.2 53 Td[p

work fully reflects social policy concerns, with a primary focus on social equity, poverty and rights).

Government structures take into account the rights, responsibilities and interests of stakeholders and allow for their **equitable participation** in decision-making regarding biodiversity conservation and human development, 5.5K (e.g. taking into account the rights and interests of women in local governance structures).

Programme development – IUCN's Programme is developed in response to contemporary needs for conservation action and lessons learned, 6.3K (e.g. cross-cutting initiatives on emerging thematic and geographic issues, for example enhancing the linkages between **poverty reduction** and conservation)

The extent to which these poverty-focused results have been picked up by IUCN's regional programmes, thematic programmes and commissions is mixed, but there is some evidence of their use (Mehrotra, 2004).

The intellectual framework of IUCN's approach to poverty-environment is identified in the Programme 2005-2008: "Poverty reduction is a key element of today's global agenda. The relationship between economic growth, poverty, inequities and environmental degradation is complex. In some cases, economic growth, poverty and inequities can cause environmental degradation. In other cases, environmental degradation can exacerbate poverty and inequity. One factor to consider is scale. At a global level, affluent societies are responsible for greater environmental impact than less affluent societies. The environmental footprint of affluent societies is much larger, not only in terms of the amount of resources they consume but also in the way their consumption

the changing understanding of poverty

the changing role of government and donors in poverty reduction

measuring progress in outcomes – the MDGs

poverty reduction linked to strategic macro issues

the importance of pro-poor growth

supporting pro-poor political change

harnessing the benefits of globalization and addressing industrialized country policies

poverty reduction, conflict and the security agenda.

1.4.1 The changing understanding of poverty

Low income is central to being poor. However, poverty is increasingly associated with other deprivations – lack of educational opportunities, gender inequities, ill-health and lack of environmental assets. The poor themselves define their own situation as exposure to risk and vulnerability; lack of opportunity, political marginalization and lives empty of hope (World Bank, 2002a). This changing view of poverty has coincided and been hastened by the widespread use of qualitative studies using participatory poverty assessments (PPAs) to determine the views of the poor (World Bank, 2002a). These are now undertaken in most low-income countries at regular intervals, often with funding from the major development agencies.

Some of these different aspects of poverty have been identified in the MDGs, covering absolute incomes, access to education, gender equity, reduced child mortality, improved maternal health, reductions in major diseases and reversing the loss of environmental resources. This more complex interpretation of poverty is also embodied in the World Bank's focus on "opportunity, empowerment and security" (World Bank, 2001) and the sustainable livelihoods framework, which identifies five different kinds of capital upon which the poor depend.

The changing view of poverty and the environment

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outside "conservation" networks. In particular, the assumption by IUCN that "conservation" includes "sustainable use" is not understood by outsiders and gives the impression of an overly "protectionist" agenda. With the focus on the MDGs that make no mention of "conservation" but refer instead to "ensuring environmental sustainability" and "reverse the loss of environmental resources", it may be worth IUCN shifting more to this terminology stressing the "environment" rather than "conservation".

Key references:

- Brocklesby and Hinshelwood (2001) *Poverty & the Environment: what the poor say?* DFID (summary available at www.dfid.gov.uk/pubs/files/epd_keysheet1.pdf)
- Pakistan Planning Commission (2004), Participatory Poverty Assessment
- World Bank (2002) *Voices of the Poor*, edited by Deepa Narayan
- World Bank (2001) World Development Report, Attacking Poverty
- www.undp.org/poverty
- www.worldbank.org/socialdevelopment
- www.livelihoods.org/

Secondly, there can be a greater role in promoting donor coordination in the environment sector. However, these new roles for IUCN also present challenges to the way some IUCN country offices go about their business at present. IUCN needs to move away from traditional stand-alone projects towards strengthening government led processes and encouraging donor coordination.

1.4.3 Measuring progress in outcomes – Millennium Development Goals

The focus on MDGs embodies a desire by the international community to focus more on outcomes, and specifically outcomes that benefit poor people. This has arisen out of a concern that these outcomes, such as higher incomes and reduced mortality, have not improved sufficiently. It may also reflect a frustration that less measurable objectives such as economic growth, participation or even perhaps sustainable development have not translated clearly enough into results on the ground. In this sense, the MDGs focus on ends rather than means – on what should be achieved rather than the process of achieving it. This distinction between ends and means is not entirely clear-cut since some MDGs – such as MDG8 of "improved partnerships" – are themselves means. The pendulum has also started to some extent to swing back towards "means" in the growing emphasis on "good governance". There has also been a realisation that in many cases changes in outcomes are longer term and often hard to attribute, so in the shorter term there is value in some intermediate indicators for key interventions or activities (e.g. improved access to sanitation) that will improve long-term outcomes. However, in general the MDGs demonstrate a concern that some development paradigms, including perhaps sustainable development, have become so "process-focused" that they need to become more "outcome-orientated" with clear measurable goals and targets.

MDGs and the environment

Within the environmental community, this focus on the MDGs has been largely welcomed. However, the environment community faces problems interpreting MDG7. The first target within MDG7 (see Table 1.1) includes a qualitative component to "integrate the principle of sustainable development into

The MDG debate and IUCN

This MDG debate is highly important for IUCN in several ways. On the latter issue of poverty-environment indicators, it provides an area where IUCN can add value to the debate. But more operationally, the fact that MDGs focus on outcomes rather than processes does pose some challenges to the way IUCN conducts its business. IUCN programmes, as with many agencies, tend to focus on inputs and processes and be rather less specific on outcomes. An example is IUCN's Global Programme, the result areas of which are "understanding", "management" and "governance", but with almost no mention of actual environmental outcomes, let alone poverty-environment outcomes. While this may be more realistic and honest, it does raise concerns that, without outcome, even as a long-term guide, IUCN will not be able to respond to a more outcome-orientated international context, and processes can become ends in themselves.

Key References:

- Shyamsundar P. (2002) *Poverty-environment indicators*, World Bank
- Nunnan et al. (2002) *Poverty environment indicators*, DFID
- World Bank (2003a) *Poverty Reduction strategies and the Millennium Development Goal on Environmental Sustainability* (2003)
- UNDP (2003) *Human Development Report, Achieving the MDGs*, Oxford University Press

1.4.4 Poverty reduction linked to strategic macro issues

In addressing the challenge of poverty and the failures of past interventions, grea -33oes aneduction lin

promote poverty reduction and others to ignore the needs of the poor, or even undertake wholesale theft of state resources? Why is it so difficult to move from local empowerment of poor people to political mobilization? Why, despite public anger, do corrupt politicians get re-elected? (DFID, 2001). To answer these questions, we must first understand more about what constitutes pro-poor political change.

According to some, democracy is linked to poverty reduction, but multiparty democracy is no panacea (DFID, 2001). India has been a functioning democracy for 50 years, but poverty remains widespread in many states, while China and many of the East Asian tigers were not democratic and yet achieved major reductions in poverty (Moore and Putzel, 1999). This suggests that more important than formal systems of governance is to identify the patterns of state, society and market relationships that underpin governance systems and determine whether they provide outcomes that reduce poverty (DFID, 2003a).

Most industrialized countries have undergone long and often violent transitions in developing their current governance systems. There is no blueprint and each country will follow a unique path based on its past history, although a number of patterns can be identified that are important for pro-poor governance. Once basic security is achieved, the kind of political change that would benefit poor people is a move from informal, personalized patronage systems to systems in which poor people can expect universal services by right. State provision is no longer dependent on access to politicians and senior public servants who provide these services in return for support or because of personal or cultural relationships (e.g. ethnicity or caste). However, this transition also has risks and the poor may lose out in the short run as patronage systems provide safety nets to some by providing jobs in state institutions or facilitating

1.4.7 Harnessing the benefits of globalization and addressing industrialized country policies

The debate over globalization in the last decade highlighted the so-called "inter-connectedness" of the world. The narrow definition of globalization includes the increased movement of goods around the globe as trade, the increased movement of funds (or capital) and the speed and declining cost of communications that make this global movement possible. A broader definition of globalization would include the movements of people around the globe, although compared to goods and capital this is much more limited and is much lower now than it was in the early 20th century. A broader definition might also include the rise of global environmental problems, including both the loss of global biodiversity and the changes to the earth's climate system due to greenhouse gas emissions and globally linked land use changes.

Many of these globalization processes – for example trade flows, capital movements and emissions of greenhouse gases – are largely dominated by industrialized countries. In this context, there is a realisation among many in the development community that the industrialized countries need to do more to make globalization work for poor countries, most obviously by opening up their markets to developing country products.

Environmental issues and globalization

There are many environmental myths surrounding globalization, which the empirical evidence does not generally bear out. Both on trade and investment, many of the views of industrialized country environmental campaigners are debatable. For example, environmental standards on imports into industrialized country markets are often perceived by many developing countries as a form of non-tariff barrier. This is tempered by a realisation that, in some cases, environmental certification can create new markets and that some of the standards may be an inevitable result of consumer and regulatory pressure that developing countries have to accept. However, these standards are often resisted by developing countries, and often most affect the smallest producers in low-income countries who lack the skills and finance to comply. Similarly in investments, the so-called "pollution haven" hypothesis that industrialized firms send dirty industries to developing countries to take advantage of lax environmental standards is not generally borne out by the evidence. Typically, except for a few industries, environmental costs play a small role in relocation decisions compared to the costs and skills of the labour-force and access to markets. Finally, the view that multinationals account for greater environmental damage is generally not borne out by the evidence. Generally the worst polluters in developing countries are loss-making state industries who lack the funds, technology and legal threats to clean up, and in general multinationals in the same industry have a better track record. IUCN with its membership in both the North and South could play an important role in challenging some of these environmental myths around globalization.

1.4.8 Poverty reduction, conflict and the security agenda

One obvious new challenge of globalization post 11 September 2001 is the "globalization" of terrorism. While there is much rhetoric about global poverty reduction by industrialized country leaders, and attempts by development agencies to put this into action, often the foreign policies of industrialized countries include many objectives other than poverty reduction. During the 1960s and 1970s when the fear of communism was the dominant concern of the rich countries, this shaped foreign policy, military and humanitarian interventions and aid budgets. The new concern in rich countries after the events of 11 September 2001 is the spread of international terrorism. This overriding concern is now influencing spending priorities and leading to support for some regimes over others. Some have tried to use this security debate to focus on so-called "failing states", many of which are in Africa, to argue for a more pro-poor focus on conflict resolution (DFID, 2004a). There have been some successes such as the significant increase in the US aid budget, or the push – to use the example of the Iraq debt write-off – to lead to a broader debt write-off for low-income countries. However, to date the main effect of international terrorism concerns has been major increases in spending on countries such as Iraq and Afghanistan accompanied by general increases in military and security spending. Encouragement to low-income countries in Africa and South Asia to reduce

poverty as a way of improving global security remains limited, so the jury is still out as to whether the new focus on security and failing states will benefit poverty reduction.

Environment, conflict and the security agenda

Realising the dominant political concern with "security", environmentalists, particularly in the US, have, like others, sought to make the link with "environmental security". Even those outside the environmental movement have used security language to demonstrate the importance of the environment. For example, UK Ministers have declared that the major long-term threat to security is global warming. There has also been a growing reference to the links between environment and conflict. The obvious centrality of oil in the Middle East conflict is well recognised by many. There are also many examples, particularly in Africa and to some extent South East Asia, where natural resources – primarily minerals and timber – have fuelled conflicts (Global Witness). It remains to be seen ifa4W007 Tc 0aW007tyared that thee 21.628 0

low. One solution is to raise the returns from such activities although, paradoxically, adding value may actually encourage the non-poor to engage in these activities and reduce opportunities for the poor. For example, successful schemes in establishing fishing property rights can marginalize poorer fishers who do not have access. Or commercialising NTFPs can lead to a breakdown of common property arrangements and an increase in private property (Neumann and Hirsch, 2000). This is not to say that pro-poor natural resource based growth is impossible, only that it is not automatic.

In addition to raising returns from subsistence activities, natural resource rich countries can use the profits from these resources to generate revenues for pro-poor investments (OECD, 2005). But macro linkages between natural resources and growth have shown to be complicated by the so-called "resource curse" that requires political reforms to be overcome (Auty, 2001 and 2004). Examples of countries that face this challenge are the mineral wealthy countries of Nigeria and Papua New Guinea, the forestry wealthy

Key references:

- WRI (2002a) *World Resource Report, People and Ecosystems – the fraying web of life*, World Resources Institute
- UNEP (2004) *Human Well-being, Poverty, Ecosystem Services, Exploring the Links*.
- Millennium Ecosystem Assessment (2005) Synthesis Report

1.5.8 Importance of politics in understanding links between poverty reduction and natural resources

Many of the factors explaining who the poor are, are social, political and economic processes. While these processes lead to the continuation of poverty, they may also benefit some groups. Where resources are scarce, interest groups in the capital will ensure that they lobby for urban services so rural investments may lose out. Dominant ethnic groups will tend to favour investments from which they benefit. Some men may resist the loss of power that gender equity entails. Wealthy groups may be reluctant to share power and resources (UNDP, 2002a). Powerful leaders in the public and private sphere may seek to advance their own personal and business interests (Kaufmann, 2003). This suggests that reducing poverty will require a change in power relations. As Sen and Dreze (1989) conclude: "The demands of different classes typically do not receive equal treatment because of strong links between economic inequality and the distribution of political power."

Political change in environmental management is key to poverty reduction, just as politics are key to broader poverty reduction. Natural resources are potent political and economic commodities, especially in the poorest countries, so control over the use and benefits of ecosystems is often not in the hands of the poor. Changing this power equation and achieving prudent ecosystem management that benefits the poor requires addressing a complex range of governance issues. These are addressed in the next section.

Key references:

- WRI (2003) *World Resources Report, Decisions for the Earth*, World Resources Institute.
- WWF (2004) *Analysing the Political Economy of Poverty and Ecological Disruption*, WWF Macroeconomics program office, Reed, D.

1.6 Why is the poverty-environment relationship the way it is? Understanding the underlying social, political and economic processes that link poverty and the environment

"It could be argued that the distribution of power and influence within society lies at the heart of most environment and development challenges. Hence new approaches must involve programmes of social development, particularly to improve the position of women in society, to protect vulnerable groups, and to promote local decision-making in development" (World Commission on Environment and Development, 1987).

There has been a long history of political changes that negatively impact on poor people's natural resource based livelihoods. Colonialism often began the process of restricting access to natural resources and redistributing resources to generate profits for the colonial power. There are many examples in Eastern and Southern Africa of white colonial settlers throwing poor people off their land, and in India the British played a key role in creating the irrigation system of Punjab, with dramatic social and environmental impacts. In many colonized countries, land was taken from poor people to grow export crops such as coffee,

tea and rubber. Many of the current patterns of resource access were shaped by the massive impacts of colonialism.

So far we have seen that politics matter to the environment predicament of poor people, but political changes to address these en

to water, fuel, grazing and cultivation, which may vary by season, species or usage. In this complex situation, it is not clear whose rights will be documented in law when the land title is formalized. In Tanzania, where land titling started in the 1980s, land conflicts are increasing rather than decreasing. Thus it is not clear in the short or even the medium term if land titling alone will improve the position of the poor (Neumann, 1997). In urban areas where tenure rights are more market-based, it is clear that improved land title is vital for poverty reduction in low-income settlements and access to environmental services.

Key references: -

1.6.3 Wealthier groups constrain poor people from benefiting from natural resources

Control by the wealthy of inputs needed to gain from the natural resource base, such as credit and water for irrigation

To generate wealth from land many inputs are required, including labour, seeds, fertilizers, pesticides, tractors and threshers and, in many arid areas, water for irrigation. To finance fertilizer and other inputs, credit is key. However, rural areas, with their dense inter-linked social network, often provide the dominant wealthier landowners and traders with a monopoly position and virtually all-or-nothing choices for the weaker parties.

Access to irrigation water, like land, is heavily biased in favour of the wealthy farmers. Water from surface irrigation passes along channels from the head-enders, whose supply is more assured, to the tail-enders, whose supply is less reliable. Groundwater irrigation is also more likely to be affordable for wealthier farmers, although poor farmers tend to find groundwater easier to access than large surface water schemes (Roy and Shah, 2002).

Production chain in natural resources biased against the poor

Natural resource based production, like many aspects of the rural economy, is often linked through a very inequitable combas0.0007 Tc55 like e a olwhose pn in nd of t 0.0171 Tw -24.399 16.153 Td[15nputs, cr

the poor generate returns from their access to natural resources. Households in Uganda face a confusing array of resource-related taxes that seem to be largely arbitrary. Taxes on subsistence fish extraction, production and distribution are levied in many countries. Around lake Chad in Central Africa, fishery fees are levied by traditional authorities, central government and by soldiers (Bene, 2003).

Governments often blame the poor for natural resource degradation: anti-poor natural resource regulations and enforcement

There are many examples of the poor being blamed for environmental degradation. The poor are often blamed for deforestation. In many cases the poor are blamed for over-grazing or hunting, and when protected areas are created the poor suffer most. This has been well documented among the Maasai in Kenya and Tanzania, and in protected areas in Thailand, Nepal, India and Sri Lanka. Sometimes environmental regulations are introduced in a draconian way that negatively impacts the poor. In Mali, the 1986 Forest Law banned bush fires, made felling of certain species illegal without Forest Department permission, and made wood-saving stoves compulsory. Wood trade was forced underground and poor people were unable to pay the fines so their livestock was confiscated (Benjaminsen, 2000).

1.7 How can pro-poor natural resource outcomes be achieved? Identifying the drivers of change

Depending on the country-specific political structures, pro-poor environmental decisions can be pursued. This chapter identifies four main avenues:

pressure from below, in particular from poor people in innovative alliances often supported by civil society, and in some cases benefiting from decentralisation and collective management

political institutions as engines of progressive change, including the executive, political parties, parliament, civil service and judiciary

taking advantage of wider political change

Civil society

The example from Brazil's forests illustrates that, for this kind of political change to succeed, poor people need to make innovative alliances with both national and international civil society organizations. International organizations, by bringing pressure to bear on resistant governments, can also help legitimise the struggle of poor people. The example of Brazil also illustrates the importance of changing perceptions through strong leadership and canny use of the media. One of the challenges of these pro-poor movements is to up-scale so that they move from the local to the national, leading to broader changes in policy. One successful example of this is the rise of poor fishing groups in Kerala and their battle with trawlers to control resource access (Kurien, 1992).

Decentralisation and so-called "community management"

There has now been over 20 years of experience with political change through devolving NRM. This takes many forms including control by district organizations (e.g. panchayats in India), village committees (e.g. Malawi), legal organizations (e.g. conservancies in Namibia) and self-initiated organizations (e.g. Orissa). A review of schemes in Africa and South Asia found that the poor's perceptions

Government agencies

Where the government agencies are progressive they have a key role to play in creating an enabling framework for poor people's participation. This can arise through a progressive agency introducing or implementing pro-poor reforms. An example of this is South Africa's Department of Water and Forestry Affairs, which has been extremely successful in introducing water supply and sanitation to poor households.

A key change that governments can introduce is to allow poor groups to bid for government contracts. This can reduce corruption, allow the poor to earn income and ensure that infrastructure is designed in ways most appropriate for the poor. In some areas, this has played a major role in making environmental infrastructures such as water supply and sanitation more pro-poor.

Legal activism for environmental rights

Donors also need to encourage the international community to place a greater focus on environment-governance issues. Greater emphasis on changing dysfunctional governance patterns that keep the poor from deploying their natural endowments wisely will aid in meeting all the MDGs. These issues can also be given greater attention in PRSPs. These will only lead to lasting outcomes if they move from addressing the symptoms of poverty to addressing root causes such as exploitation patterns specific to regions and their natural resource bases (Mukherjee et al., 2002).

Finally, donors have a role to play in ensuring that industrialized countries address the trade-offs between the poverty reduction needed in developing countries and global (and at this time largely rich country) concerns with maintaining the planet's environmental stability. In other words, if we want low-income countries to protect biodiversity and reduce greenhouse gas emissions, then the rich countries have to pay for it. This is the logic behind the Global Environment Facility (GEF), but so far the resources are minimal compared to the task at hand, and the poor often continue to suffer the opportunity costs of biodiversity protection in protected areas.

Part 2: IUCN's work - improving the effectiveness of poverty-environment links & its policy implications[2]

By Naresh C. Saxena

2.1 Summary

This paper proposes to identify work being carried out in the Commissions and Secretariat that is of critical importance to IUCN on the poverty-environment links, and that has the potential of offering lessons and tools for improved delivery in this field. It suggests ways in which IUCN can improve the impact and influence of its work on the poverty-environment links, including considerations of gender equity. It also identifies new areas for programme delivery, specific needs for knowledge management, and tools for policy advocacy to improve delivery on the poverty-conservation links in the context of implementing the IUCN Intersessional Programme 2005-2008.

IUCN has always prided itself on the fact that its brand of conservation is people centred and that it balances ecological sustainability with social equity. IUCN is exploring several strategies of linking livelihoods with biodiversity conservation, for example through investing in the sustainable use of natural resources such as the harvesting of NTFPs, or by supporting community enterprises in the vicinity of protected areas, such as ecotourism. IUCN supports community-based natural resource projects aimed at improving livelihoods in and around protected areas throughout the regions. Many such projects work with marginalized groups, for example: enhancing women's participation in the Siwaliks Hills Process in Nepal; working with mountain communities in the North West Frontier Province and Northern Areas of Pakistan; promoting activities to improve the living conditions of indigenous communities in the Laguna Lachua area of Guatemala; and creating village funds in Djoudj National Park in Senegal.

The IUCN Commission on Environmental, Economic and Social Policy (CEESP) supports a substantial programme on sustainable livelihoods and collaborative management of wild resources, addressing poverty and sustainable livelihood issues at the local level. The Biodiversity Policy Coordination Division (BPCD) produced a discussion paper that reviewed linkages between ecosystems and livelihoods, as well as the role of risk management.

IUCN has recently embarked on a project supported by an internal 3I-C Fund (i.e. innovation, integration, information and communication) to explore and better understand the links between poverty reduction, sustainable livelihoods and ecosystem management. IUCN supported a project in several countries, such as Uganda and Tanzania in Africa, and Lao PDR and Viet Nam in Asia to get an insight on how the mainstreaming of environment in conservation and poverty reduction policies is being done, and whether it has succeeded in securing sustainable livelihoods.

2.1.1 New challenges

IUCN also acknowledges that improved livelihoods and enhanced conservation are not necessarily coincidental. Opportunities for win-win solutions can be limited, and in many cases there are trade-offs between different activities based on different biodiversity and poverty criteria. Biological diversity also involves equity issues as it is rarely assigned the same value by all stakeholders, and the livelihood needs of the poor are frequently subordinated to the interests of more powerful groups. One of the main challenges for IUCN is to find means to ensure the equitable sharing of costs and benefits arising from the conservation of species and ecosystems from local to global levels.

[2] *The author is grateful to a large number of IUCN professionals, both at Gland and the field offices, who have helped in completing this paper, and whose ideas have been freely borrowed without proper acknowledgement.*

2.1.5 Governance

Good governance is central to issues of poverty reduction as well as improvement in environmental quality. Good governance requires three basic conditions: decentralization (the authority structures must be decentralized and devolved); inclusiveness (decision-making processes must be participatory and all-inclusive); and accountability (government strategies and activities must be transparent and accountable to the populace).

One of the most important roles that IUCN can play in global environmental governance is to provide up-to-date information on critical issues. Governments often turn to IUCN to research gaps that stand in the way of effective decision-making. Thus IUCN should be dedicated to the production of accurate, up-to-date research and data on the most pressing environmental issues.

2.1.9 NTFPs

Issues relating to productivity, access and marketing of NTFPs are already quite important in IUCN projects. Much of the profits in the trade of NTFPs will go to those who value addition through processing, storage, transport, etc. and primary gatherers will have to assume these functions if they wish to obtain a higher share of the profits. IUCN may consider weaving this aspect into its projects.

2.1.10 Measurement

IUCN projects are strong on community mobilisation, but still weak in measuring it. It is particularly important that IUCN continually assesses the impacts of actions against expressed goals. The three outcomes of participation – learning, empowerment, and a vibrant organization – need to be measured in IUCN projects through observable indicators, which will vary from project to project. Each project must develop clearly observable indicators on people's participation, so as to judge whether they are on track or not. Such indicators should also be used by monitors

improved. As argued above, different resources have different requirements, and all are not easily amenable to community management. In the years to come, this aspect of differentiating one resource from another may be a critical variable for IUCN to decide its operational strategy.

2.2 Objectives

This chapter will, inter alia, address the following issues:

1. What are the situations when environmental improvement directly leads to poverty alleviation? Is IUCN developing pilot projects to establish the need for up-scaling such projects?
2. Some examples of successful intervention from the field.
3. Are appropriate policy lessons being drawn from these pilots, such as
   - improving the asset base and access of the poor to natural resources
   - promotion of NTFP based natural forests by adopting silvicultural practices that help increase gatherable biomass
   - developing markets that work for the poor
   - promoting social capital among the poor through sustained multi-sectoral work amongst them
   - developing appropriate monitoring indicators to measure the progress on the new objectives?
4. What are the factors outside the control of the poor that leads to environmental degradation – subsidies, lack of tenurial clarity, bad governance, market distortions, elite capture, insufficient attention, weak enforcement, etc? Is IUCN doing enough to generate knowledge on these issues and then do policy advocacy through dissemination and networking? Examples from countries.
5. Are there new areas that have so far remained unexplored by IUCN, but have great potential to improve both the environment and livelihoods, such as micro-watershed management and recharge of groundwater in the semi-arid tropics, agroforestry, afforestation of common lands, etc.?

2.3 General issues on poverty-environment links

The relationship between poverty, environment and development is quite complex and not amenable to easy generalisation. To capture this diversity in terms of a single perception of 'vicious circle' (poverty – environmental degradation – more poverty) would be naïve. It would be equally naïve to rule the perception out altogether. It is a fact that many poor have few options for generating income outside natural resources such as land and water, and therefore they use common resources such as non-private land, tanks, ponds and rivers more intensively than the non-poor. Because of their poverty they cannot afford cleaner fuels, so they burn bio-fuels to cook their food. This not only degrades the environment it also leads to deterioration in their health, especially women, children and older people who suffer because of indoor pollution. This, in turn, reduces the number of working days available to the poor for earning their livelihoods, and thus a vicious circle is established.

However, it would be simplistic to come to the conclusion that poverty alone leads to resource degradation. If one looks at the totality of natural resources, poor people do not cause all that much of the environmental degradation, especially that relating to air and water, since their levels of consumption and production are considerably lower than those of the rich. Elite social groups with more resource-intensive lifestyles escape censure, but the poor get blamed for eking a fragile subsistence. Much of the deforestation in Brazil is due to cattle ranching. It has been observed that if North America and Europe were to cut beef consumption by half, deforestation in Brazil could be checked without delay.

By 2050, the world's population could grow to about 10 billion people. The atmosphere can absorb about 10 billion tons of carbon dioxide a year before environmental damage sets in. If distributed equally

benefits would go to millions of faceless people, is weak whereas the polluters are better organized and able to bend the state in their favour.

Market failures and policy distortions often bias e

If institutional mechanisms were so developed as to permit sustainable use or even betterment of the environment we would have good possibilities of a ‘virtuous circle’ operating instead of a vicious one. An improvement in the natural resource environment improves the resource base of the poor and can alleviate poverty, which in turn can strengthen the capability of the poor to enrich their environment. A vicious circle, to the extent that it operates, can be turned into a vi

community-based natural resource projects aimed at improving livelihoods in and around protected areas throughout the regions. Many such projects work with marginalized groups, for example enhancing women's participation in the Siwaliks Hills Process in Nepal; working with mountain communities in the North West Frontier Province and Northern Areas of Pakistan; promoting activities to improve the living conditions of indigenous communities in the Laguna Lachua area of Guatemala; and creating village funds in Djoudj National Park in Senegal.

CEESP supported a substantial programme on sustainable livelihoods and collaborative management of wild resources, addressing poverty and sustainable livelihood issues at the local level. The BPCD produced a discussion paper that reviewed linkages between ecosystems and livelihoods, as well as the role of risk management.

economic planners. The latter is particularly important because an emerging lesson from 20 years of Integrated Conservation and Development Projects (ICDP) has been that few of their achievements have been 'scaled up' to economic planners. We describe below results from some of the successful experiments launched by IUCN.

2.5.1 Uganda

IUCN supported a project that also includes Tanzania in Africa, and Lao PDR and Viet Nam in Asia to provide an insight into how the mainstreaming of environment in conservation and poverty reduction policies is being done, and whether it has succeeded in securing sustainable livelihoods. The findings are encouraging and provide sufficient ground to make additional improvements in linking ecosystem management to sustainable livelihoods. Among many achievements, the project created an enabling environment for planning, resource mobilisation and allocation, institutional strengthening and, to some extent, capacity building. Secondly, people's access rights to natural resources for their survival have improved with policy provisions on multiple use, collaborative management, use of financial incentives, management plans and by-laws. This has been true in forest, park and wetland ecosystems. In fisheries, fishing regulations and fiscal disincentives have been introduced so that fishermen's fishing activities are mindful of the needs of future generations. That element of social equity is yet another tenet for a sustainable livelihood approach.

Positive outcomes were achieved from pilot activities to the extent that these activities could be recommended for replication in other parks. As a result of these interventions the following outcomes were observed:

improved park-community relationships

improved legal access to and decision-making by communities concerning the natural resources of the park as provided by the Collaborative Resource Management Agreements

increased community sense of ownership and readiness to co-manage with the park

reduced incidence of animal damage and conflict between park and community

community livelihood opportunities increased through income generating activities

improved agricultural productivity.

Constraints

Despite numerous micro win-win projects, the national indicators for ecosystem management in Uganda have not yeo47T shown a drastic improvemeo47Tnt problem is that the concept of mainstreaming environment is not yet well understood and practised. To

on command and control instruments. Included in this category are the Fisheries Act 1964, the Soil Conservation (non-African law) and the Cattle Grazing Act.

However, the policies, laws and strategies that came into force before 1997 but after 1992, did also emphasise environmental management for socio-economic development. They may not have been as explicit as those after 1997 on issues of poverty reduction and sustainable livelihoods but they nonetheless opened up an enabling environment for appreciating that conservation was pro-people and had to be by the people.

There are other instances where policies can be disincentives. One of them is the policy on 'reserved species'. For example, Mvule, which is reserved, was found unattractive for planting by farmers in Iganga because of government control over its harvesting. Yet studies established that trees act as security against risk and drought, factors that expose households to vulnerability. On private land, the studies established that the best practices were those whereby tree growing and conservation followed a holistic approach. In those initiatives there has been extension advice on tree planting into a strategy that focuses on land and crop management by NGOs.

Secondly, the state agencies with a mandate to manage the ecosystems are not taking sufficient proactive measures to translate the resources under their jurisdiction into viable economic enterprises. For example, many potential income-generating products from Uganda natural ecosystems (forests, savannah and wetlands) with high domestication potential are not being given sufficient attention by policy makers. Other problems explaining poor linkages are rudimentary technologies and weak organizational structures of the resource users.

On private land there is still heavy degradation of forests because of the lack of incentives, and individuals find it attractive to convert their forested lands to other alternative land uses. While there may be several promising cases of 'win-win' solutions, the national picture shows a negative trend of forest cover. This implies the economy i0 Td[nle there)-0 Td037 Tw.153 Td[sere 5 Te tr Wh9 Tc 0.0606 Tw.153 T,3hri4-[n(seve

In 1996 IUCN began work in Nam Pheng village, focusing on the management of NTFPs. Since then, poverty rates have fallen by half, food security has been attained, child mortality has been eliminated, school enrolment has doubled (over half are girls), and domestic savings have increased. The village acquired new infrastructures and services, while households' range of expenditures widened, improving the quality of life and productivity. Although many different factors led to these achievements, improved NTFP management and marketing clearly played a key role, as illustrated by their predominant position in household economies and villagers' testimonies. Today, collection of bitter bamboo, cardamom and other

the construction of dams and canals has been encouraged within and upstream of many of the country's floodplains, particularly by the Rice Development Authority (SEMRY), to encourage grain cultivation by the sedentary farming population. This has had devastating impacts on floodplain hydrology and ecology and has impacted heavily on the fishing and pastoral populations who traditionally rely on their freshwater resources and flooding regimes. Yet for the most part these values were not taken into account when irrigation schemes were constructed.

Reversing the effects of flood loss

Since 1979 the inundated area of the Waza Logone floodplain has been reduced by approximately 964 km^2 or almost 30% of the original flooded area, due in large part to the construction of a rice irrigation scheme by SEMRY. The reduction in inundated area has had a number of negative impacts on the ecology, hnrt[TJ12(u)-2(m)8(b)-2(eriw3 Tm[Sinc9n cultivation)5(by.- Tcnoby)--03 406)6(has been red)-7(u)-,onschwatudd l:wat2

These issues should be raised by the IUCN with policy makers so that international pressure can be mounted to change such perverse and anti-poor policies.

In the IUCN study on Lao PDR, it has been unequivocally stated that current forestry trends in Lao PDR are highly unsustainable. Government policy implicitly sanctions only high intensity type harvesting, which leads to poor harvesting practices, unnecessary levels of forest degradation and significant environmental damage.

The Forest Management and Conservation Programme (FOMACOP), which operated in Lao PDR from 1995 to 2000, and the long-running Lao-Swedish Forestry Programme, both piloted models for community forestry in Lao PDR whereby forests within the traditional village territories were co-managed by government and local villagers. While both have been deemed successful (by subsequent external reviews) in establishing the necessary agreements and establishing and implementing management plans, according to Lao PDR's National Human Development Report (NHDR), 'when it came time to actually harvest and sell the logs, that is when problems arose. In the log sales from the FOMACOP pilot areas in 2000 the village agreements were set aside, and systems developed by the project for transparent logs sales were bypassed in favour of the old non-transparent system of sales to favoured traders with substantial loss of national revenue.'

The Prime Minister's Order (PMO) No. 11, issued in 1999, increased centralisation of the timber industry and made it impossible for villages to participate in selling logs at market prices, by requiring that all wood sales be conducted directly by the government (World Bank, 2003d). Other recent orders (PMO 10 and PMO 15) are also seen as interpreting the Constitution, Forestry and Land Laws narrowly as regards participation of various stakeholders in forest management.

Of particular limitation seems to be the ability of villages to share in the financial benefits of sustainable forest management. The FOMACOP experience demonstrated that village forestry can introduce effective sustainable management over well-stocked forests and, if allowed to function, can yield benefits to both the participating community and the public treasury.

It has also been suggested that an additional driving force behind the inhibition of community forestry in Lao PDR grew out of concerns regarding perceived competition between forest management at the community and national levels. However, a spatial analysis carried out by the World Bank, the Swedish International Development Cooperation Agency (Sida) and the Government of Finland indicates that village forest management and government forest management can be complementary approaches, given the relative

effective in representing disadvantaged communities' views in accountable ways and negotiating their interests. Support should be provided for processes to develop shared frameworks about the aims of forest management and its mode of implementation to achieve a more just balance of public and local interests.

2.6.2 Policy advocacy

To sum up, poverty originates in the structural features of society that need to be redressed at the macro-level only. The poor are embedded in certain inherited structural arrangements such as insufficient access to productive assets as well as human resources, unequal capacity to participate in both domestic and global markets and undemocratic access to political power. These structural features of poverty reinforce each other to effectively exclude the poor from participating in the benefits of development or the opportunities provided by more open markets. In such a system, even targeted programmes of IUCN for poverty reduction carry transaction costs due to the institutional structures that mediate the delivery of resources to the poor.

IUCN should therefore consider evolving interventions aimed at creating an enabling environment and facilitating changes in the larger policy and institutional frameworks within which direct interventions and empowerment processes would then operate. These would include, for instance, opinion building and perspective building at multiple levels, research studies, platforms for collective analysis of the implications of research findings and initiatives to disseminate lessons learned from programme implementation. The present resource allocation (both in terms of staff time and finances) in IUCN is heavily weighted in favour of micro-interventions, which may not bring sustainable benefits to the poor unless combined with macro-level changes.

The disadvantages of focusing most of the attention towards direct micro-level intervention schemes are:

IUCN may be spreading its scarce resources too thinly

with limited funds only a few thousand can benefit, whereas the number of poor runs into billions

as the amount of assistance is small, senior government officials at the national level do not take any special interest in the projects funded by IUCN, with the result that learning from such assistance does not take place, nor is it up-scaled. Sustainability is therefore in doubt.

On the other hand, the advantages of indirect intervention schemes are many and would allow IUCN to maintain an international perspective, with its studies and reports on sectors that impinge upon the lives of the millions, and would thus be able to provide intellectual leadership and direction to other donors, research

One of the most important roles that IUCN can play in global environmental governance is to provide up-to-date information on critical issues. Governments often turn to IUCN to research gaps that stand in the way of effective decision-making. Thus IUCN should be dedicated to the production of accurate, up-to-date research and data on the most pressing environmental issues.

IUCN's involvement in global environmental governance would enrich the process and strengthen outcomes, as it has already done in a number of places and in a number of ways.

2.8 Livelihoods and livelihood security

To improve livelihood security, policy options for addressing poverty-environment interactions should focus on improving the asset base of the poor. Assets include natural capital (forests, water, land, fish, minerals); social capital (relationships of trust and reciprocity, groups, networks, customary law); human capital (skills, knowledge, beliefs, attitudes, labour ability, good health); physical capital (basic infrastructure); and financial capital (monetary resources).

If institutional mechanisms are developed so as to permit sustainable use or even betterment of the environment there would be good possibilities of improving livelihoods since the natural resource environment improves the resource base of the poor and can reduce poverty, which in turn can strengthen the capability of the poor to enrich their lives.

However, there are real barriers to making this common sense a reality. By definition, poorer people lack capital in the form of land or investments and are excluded from many financial services. Patterns of settlement, travel to work, and the changing demographics of family and social life can all make collective endeavour more difficult. Systems of welfare and taxation, through the operation of 'poverty traps', can penalise initiatives and undermine prospects for longer-term success. Each of these barriers can be addressed, but to do so requires significant changes in the current distribution of resources and power, including gender relations in households and in the wider economy. The challenge to the promoters of sustainable development is whether or not they are prepared to take on board the vested interests that sustain the inequitable and unsustainable status quo.

For instance, as already discussed, despite very high dependence of the people in Cambodia on natural resources such as land and water, almost 70 percent of good forests, fisheries and agricultural land has been given to concessionaires, thus denying the people access to productive resources. Not only in Cambodia, but elsewhere ti08,posr pe

2.9 Tenurial security

IUCN's Regional Environmental Law Programme, Asia, initiated a project on the relationship between rights to natural resources and livelihood security in two types of ecosystems and four countries in South Asia: wetlands (Bangladesh and Nepal); and forests (India and Pakistan) (http://www.iucn.org/places/asia/livelihood/). The project focuses on environmental security from the perspective of rights to natural resources and their impact on livelihood security – the 'missing link' between poverty, environmental degradation and conflict.

Initial findings from the field work indicate that it is not resource scarcity *per se* that leads to livelihood insecurity, but rather insecure rights to resources, whether scarce or abundant, for resource-dependent people and communities.

Tenurial insecurity may exist in a variety of situations, of which three are fairly widespread in the developing countries. First, when government is not able to enforce property rights and free access, though against government regulations (quite common). Second, when there are no property rights, and the resource is open access. Third, when there is conflict between law and policy, or between customary practice and formal law. Some examples are discussed below.

2.9.1 Problems of open access

Rivers and its tributaries are generally treated as open resources in the developing countries, and therefore it is quite common for people from different villages, districts, provinces or even countries to fish outside their borders. Either there is no specific legal tenure for fisheries, or even when laws and regulations exist in theory, these do not function well at the grassroot level. The problems associated with encroachment by outsiders are not only related to the destructive measures outsiders employ to exploit natural resources, local people are also put under pressure to over-exploit the resources. Local villagers may say: 'if we conserve the resources, how can we be sure that the others will do the same' or 'if we do not catch fish now (such as during fish spawning), or not cut trees, others will do it anyway'. This leads to the all-familiar 'tragedy of the commons' situation resulting in further degradation.

Open access in Bangladesh

Conflicting law & policy in Tanzania

The policies, laws and institutions relevant to crosscutting issues in NRM have rarely been harmonized in Tanzania. Most policies and strategies in place are sectoral in vision. Coordination modalities are absent or inadequate at all levels and even more so at the village level where the actual implementation of programmes takes place. Clear arrangements need to be worked out, including interactive consultations at all levels from policy formulation to planning of implementation interventions. While policies are open in avenues contributing to poverty reduction, most of the laws that govern natural NRM are inadequate to support policy commitments. While policies provide supportive ways for communities to develop natural resources, most legal frameworks for accessing natural resources are yet to be developed adequately in this direction. In general, most of them are still restrictive to communities and the farm sector.

Non-renewal of fisheries concessions in Cambodia

In 1998 there were 167 fishing lots in the whole of Cambodia encompassing a total area of 850,000 hectares of the most productive fishing areas in the country, leaving little for the local fishermen. To correct the situation, 49% of the lot area (220,360 out of 452,640 hectares) was released for community fisheries in October 2000 to allow the poor to eke out their existence from fisheries. The reasons for the reform of the fisheries management system were many, including an increasing number of conflicts between the villagers and lot owners, controversies between the conservation of flooded forests and its conversion to agricultural land and outdated fishery legislation and its inefficient enforcement. Privatisation of most of the national inland fishery brought "family scale" fishers into conflict with commercial lot operators who, in spite of the law, have prevented subsistence fishers from accessing the resource through intimidation, violence and false imprisonment. The background for the reform can also be found in the inequitable and opaque nature of the allocation of the fishing lots and their management, which had a negative effect particularly on the poorest section of society.

After the temporary removal of fisheries' officers in February 2001, exploitation of fish ran out of control and anarchy replaced the corruption and inequality. Although the reform was a beneficial step, many regarded it as being too quick and radical since the communities were not ready for the responsibility of

fisheries in these areas. The lots became, de facto, open access areas. The result was confusion over access rights, alleged uncontrolled exploitation, rampant irresponsible fishing and further conflict.

Two lessons follow from this example. First, open access is as iniquitous (and environmentally injurious) as government or private monopoly. Second, effective management by the local people cannot be taken as an automatic outcome of the transfer of resource to them; it is a process that needs support from donors and civil society, at least in the initial stages. Its effectiveness will also depend on the nature of the resource, as discussed later.

While further promoting local and customary practices to manage the communal resources, some forms of workable law enforcement systems should be in place to secure local / community control over resources. More secure community ownership will motivate people to manage resources productively. In addition, it is important that people do not receive conflicting signals about their rights from different government departments. Often government structure does not promote the most effective coordination among different agencies. There are overlapping tasks and responsibilities between the department of forestry, department of fisheries, extension agencies and research agencies, as well as with government agencies responsible for environment, irrigation, and land development, as in Lao PDR. It is therefore difficult to arrange agreements among many related parties.

2.9.2 Positive examples

Growing numbers of initiatives from IUCN aim to ensure that rural peoples can benefit directly from good stewardship of their resources. In Kenya and Tanzania, for example, the Maasai living around Tsavo, Amboseli and Kilimanjaro National Parks have developed community wildlife sanctuaries that benefit from wildlife dispersal areas around the protected areas. Here, local communities are involved at all levels of management in a range of conservation and ecotourism enterprises. However, experience in Africa and elsewhere has shown that community conservation initiatives can only work when supported by a national policy and legislative environment that enables devolution of meaningful authority and responsibility for natural resources. Participants at the Fifth World Parks Congress repeatedly stressed that clarity over tenure (of land and natural resources) is fundamental to the success of these initiatives, both in terms of conservation of biodiversity and in the fair and equitable sharing of its benefits (see Box 2.3).

Box 2.3 Namibia's communal area conservancies

Namibia's communal area conservancies are zoned by members of the community for their livelihood needs, including crop and livestock production, and wildlife and tourism. In return for

2.9.3 Tenurial issues in groundwater

Groundwater is also a common pool resource, but rich farmers consider this to be a private resource as they think they have absolute rights on groundwater below their land. In over-drawing water they are able to deny poor farmers the right to use the resource. The high costs involved in accessing this resource make the situation more complicated, and access to groundwater is mediated through technology and capital, rendering its exploitation iniquitous.

One reason why private enterprise is often unsustainable is that governments around the world continue to embrace policies that are harmful to the environment, or to the poor, or both. For example,

subsidies to water and energy users often lead to wasteful use of scarce resources and typically benefit the rich. It is estimated that, on average, consumers in developing countries pay 35 per cent of the costs of water provision.

Groundwater and surface water are the two sources of water available for human consumption. In some developing countries, such as India, almost all surface water sources are contaminated and unfit for human consumption, thus increasing reliance on groundwater. Since groundwater provides the greatest measure of security on all three fronts sought by farmers: timeliness, adequacy and reliability, the shift in favour of using groundwater for irrigation has accelerated in the last three decades, concomitantly resulting in water table decline. Moreover, wrong cropping patterns (see Box 2.4) has often denied water to the poor, besides causing environmental damage to the soil. It is ironical that Cheerapunji in India, known to be among the wettest places on earth with rainfall of about 11,000 mm, suffers from acute shortage of drinking water because all the rain that falls on the barren slopes quickly runs off the area.

In addition, the supply of pumped water is seriously affected by the growing incidence of pollution and contamination. The level of natural contaminants such as fluoride and arsenic and chemical pollutants such as pesticides and insecticides is high and rising. Excess fluoride and arsenic in groundwater based drinking water sources has given rise to crippling and incurable diseases such as fluorosis and arsenical dermatitis. Other quality related issues include biological contamination. Indiscriminate use of fertilizers and various agrochemicals along with unscientifically designed latrines and improper disposal of domestic wastewater have further contributed to the deterioration of groundwater.

Water shortages affect the poor in a number of wa07 Twtili Twte2n grdwater runv Tw 3..63970 Td[1Firs on)5(f

rainwater collecting in water scarce regions

improving the quality of potable water

restrictions on withdrawal of groundwater for irrigation, especially for water-hungry crops, in regions where the water table is falling.

IUCN may consider increasing its presence as regards intervention in groundwater management and sanitation in its project portfolio since it affects the poor in more ways than one, as shown below.

Figure 2.1 Linkages between poverty, water and sanitation

Poverty dimensions	***Key effects***
Health	Water and sanitation related illnesses.

Participation should include the notions of contributing, influencing, sharing, or redistributing power and of control, resources, benefits, knowledge and skills to be gained through beneficiary involvement in decision-making. Participation is a voluntary process by which people, including the disadvantaged (in terms of income, gender, social status or education), influence or control the decisions that affect them. The essence of participation is exercising voice and choice, and developing the human, organizational and management capacity to solve problems as they arise in order to sustain the improvements.

Half-hearted measures towards people's participation have only resulted in wastage of funds with no gains. It must therefore be understood as a process by which the people are able to organize themselves and, through their own organization, identify their own needs and share in the design, implementation and evaluation of the participatory action. Thus, various elements of participation are decision-making at various stages, control and management of funds and resources, share in usufruct and final produce, and certainty of benefits. In other words, participation should not only stop at information sharing or consultation; decision-making and initiating action are important and essential components of participation.

2.10.1 Outcomes and indicators of participation

Participation in decision-making is an important capacity building process. As people participate in making new decisions and solving problems, learning takes place. This learning is internalised because it is accomplished experientially. It therefore leads to changes in attitude, behaviour, confidence and leadership. Newly acquired knowledge is therefore the first outcome of participation.

Empowerment is a result of participation in decision-making. An empowered person is one who can take initiatives, exert leadership, display confidence, solve new problems, mobilise resources and undertake new actions. Empowerment, it is hypothesized, is an important outcome of high levels of participation involving control over decision-making for a range of activities. Hence empowerment is a leading outcome of successful capacity building at the individual and institutional levels.

The third outcome is organization building. Decentralized programmes require strong local organizations. When local organizations get the opportunity to manage resources and support development, they can become stronger. Participation in decision-making is hypothesized to strengthen the capacity of local organizations to carry out activities. Local organizations can be a few people working on joint management committees, or a village council, or organizations of several villages.

2.11 Approaches for the empowerment of poor communities

Communities are often heterogeneous and may harbour considerable differences in interests and attitudes. It is often not enough to assume that community leaders will ensure that benefits accrue to the most needy. Communities are marked by social differences and relations of power and inequality around factors such as gender, race, social status, class and so forth. It is also important to consider local constraints in managerial capacity and not push reforms too far too quickly. Any attempt to empower local communities and target public expenditures to them should take into consideration these relations of inequality, but also the interests of different segments of the community. Forming a committee to manage common property resources is no guarantee of success. Some committees work and others do not. Research (Stalker, 2001) shows that four factors are associated with the success of a village committee:

Transparency. People in a community need to understand how decisions are made and whether other people in the program are sticking to the rules. Transparency comes from holding open meetings, sharing minutes of meetings and publicly penalizing people who fail to follow the rules.

Participation. A critical mass of community members must understand the potential benefits of the scheme and participate in setting project rules.

Inclusion. Who participates and who benefits from the scheme is important. Committees should have conflict resolution mechanisms, should divide the benefits to include different community groups and should allow different groups opportunities to influence decision-making.

Ownership. The community must feel a sense of ownership of the resource, believing it is their resource to manage and maintain over the long term.

In Africa, experience has shown that transparency and accountability are improved if whole communities, including women, are involved in decision-making (Box 2.5).

Box 2.5 Ensuring transparency in Zambia

The Lupande Game Management Area, adjacent to the South Luangwa National Park, supports a resident population of 50,000 people. Two hunting concessions in the area bring in revenues of about US$ 230,000 a year for local communities. Previously, distribution of revenues was managed through community leaders, but in the past six years revenues have been distributed in cash to villagers in an open and transparent manner. Individuals retain a portion of this sum while giving another portion to community projects (clinics, schools) approved by the whole community. Eighty percent of hunting revenues now devolve to village level. Participatory democracy and 'bottom-up' accountability have changed attitudes to the park and, since the communities now view wildlife as a private asset, illegal hunting has been reduced.

Source: Child & Dalal-Clayton, 2004

Decentralization and local empowerment is not a guarantee for environmental stewardship. In fact, the opposite may result as is noted in an assessment of the World Bank's 1991 Forest Strategy: 'Devolution of power to the local level has increased pressure on forests in view of the income, employment, and revenue needs of local government and their constituents' (World Bank, 2000c). Hence, it is important not to take a romantic view of community empowerment as the 'silver bullet' of poverty reduction and environmental protection.

Why does collective action succeed in some cases and not in others? Empirical evidence from India in the context of village forests suggests several clues (Chambers et al., 1991). First, most effective local institutions develop in small communities where people know each other. Collaboration is easier among small and homogeneous groups. Second, the topography of the upland villages makes their common lands

However, policy provisions by themselves are not adequate in ensuring women's participation in community institutions. Gender planning within a government programme is generally confined to formal provisions for women's participation in community management institutions without any serious thought to operationalising and monitoring their actual involvement. Tools and techniques (such as participatory rural appraisal) used for community level dialogue result in information distortion due to the screening out of wider social relations and gender disparities.

The stress on formal provisions for women's representation in committees stems from the mistaken idea that all sections of the community would have equal opportunities to participate without the mediation of an external agency. Observations from the field not only dispel this presumption but also show how unequal opportunities for communication can scale up the existing gender inequalities within the community. Hence, ensuring 'dialogue' during the decision-making process could be the essential first step towards ensuring equal participation of women in community management of natural resources.

Given the sex-segregated and hierarchical nature of most developing societies, separate women's organizations and staff are needed to work among women and instil confidence in them so that they can fight for their rights. Moreover, government staff should have adequate and equal representation of women. They should be sensitised on gender issues through orientation programmes. As women in many societies feel inhibited in expressing themselves in mixed gatherings, each committee should have a separate women's cell for raising their consciousness and for improving their skills. The quality of women's participation and the control they exercise over decision-making processes is more important than the sheer number of women present in such bodies.

These issues are being addressed within the IUCN in the Gender and Environment programme of IUCN, which has developed a series of guidelines for the Dutch Ministry of International Cooperation that address poverty and gender issues in key environmental areas, i.e. forestry, energy, wetlands, agrobiodiversity, urban environment, desertification and climate change. The guidelines are based on the following principles: (1) environmental work provides significant opportunities to promote equity and (2) social equity is an essential requirement for conservation and sustainable development. The guidelines identify poverty-environment-gender linkages and indicators for each key environmental area, and present steps for including gender considerations into environmental activities, including stakeholder dialogue and sectoral reforms.

Both the short and long term goals of supporting women's participation in NRM (community management227ion i

IUCN’s efforts, little thought has been given to make necessary changes towards the use of technology that will be suitable to achieve the changed objectives.

For instance, in several cases local people prefer the production of grasses to wood. A pastoral tribe in India was persuaded to reduce its stock in order to allow regeneration on the forest patch allotted to the tribe members in the alpine pastures (Saxena, 1997). Although tree density increased due era6trIolt

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But what guarantees are there that the benefit of high prices in the terminal markets will be passed on to the primary gatherers (marketing and equity issue)? Secondly, will perception of the value of the tree lead to sustainable extraction (production and environment issue)? Let us look at the second issue first.

Sustainable extraction and tenure

As already observed, sustainable production demands extraction only by those with secure and long-term tenure, both de facto and de jure. If tenure is loosely defined, increased value may hasten extraction levels rather than making them more responsible. This argument is equally applicable to concessionaires and industries that have leased forests for a limited period. Often, industries use methods that are destructive to the plants in order to maximise the collection of NTFPs. Thus, land titles and tenure will determine the extent of the sustainability of extraction. The relationship between conservation and commercialisation cannot be understood without referring to the third variable of tenure.

Markets and tenure

The problem becomes complex because tenure itself is a dynamic variable, i.e. increasing value may change de facto ownership from forest dwellers to government or their nominees. In India, as long as the value of a particular NTFP was low it could be used and freely marketed bmleih gaalue of bithas as the

a slow process, should be further strengthened, as countervailing forces are needed on the side of the poor before taking on battles against those who are both politically and materially well entrenched.

Finally, much of the profits in the trade of NTFPs will go to those who value addition through processing, storage, transport, etc. and primary gatherers will have to assume these functions if they wish to obtain a higher share of the profits. IUCN may consider weaving this aspect into its projects.

2.12 Costs and benefits of natural resource management

Since IUCN works on a variety of natural resources, from forests to wetlands to protected areas, it may be useful to build a hypothesis as to which type of resources are more easily amenable to community management and what costs are involved in sustaining such management.

The environmental resources used by poor people can be classified along two dimensions: the cost of the technical components needed to manage the resource, and the costs associated with organizing different stakeholders for improved management and distribution of benefit costs (sometimes called 'transaction costs'). The former refers to the investment in the technical components of the resource, the latter to investment in the institutions to manage the resources. When an intervention to improve the technology and infrastructure needed to manage a resource would be costly, such resource regimes are classified as having

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the country but not do well elsewhere. For instance, in Nepal community forestry does well in the hills but not in the fertile plains. The conditions prevailing in the hills such as the predominance of subsistence economies, traditional and well-established rights of communities over forests, and economic and physical inaccessibility do not exist in the plains.

One problem with over-promotion of participatory management is that it can lead to massive donor interest and funding support, which may exceed the capacity of IUCN and civil society to absorb. Apart from the lack of institutional capacity, the technical skills to suit different kinds of resources are also insufficient.

Participatory management is process oriented and does not lend itself to becoming a target and product oriented programme. Along with rapid acceptance of the idea of the environment-poverty bind, the capacity of institutions to support it as well as technologies should also be critically evaluated and improved. As argued above, different resources have different requirements, and all are not easily amenable to community management. In the years to come, this aspect of differentiating one resource from another may be a critical variable for IUCN to decide its operational strategy.

Part 3: Case Study - Asia Region

By Paul Steele

3.1 Summary

Poverty is still widespread in Asia, ranging from South Asia where close to a third of the population is living in extreme poverty on less than US$ 1 a day to South East Asia and China where about 15% of the population lives in extreme poverty. Despite significant falls in poverty over the last decade in China and more recently in India, Asia still accounts for almost two thirds of the world's poor people. Natural resources such as fisheries, grasslands and forests are vital to the health, livelihoods and security of these poor people. Women are especially dependent on natural resources and negatively impacted by the lack of access to improved water supply and sanitation and depe

3.2 Objectives of this review

This review will identify (1) the leading areas of poverty-environment research and practice in the Asian region, (2) who the key players are and how to engage them with IUCN. The focus will be on low-income countries in the region, or countries with large numbers of poor people (e.g. China, Indonesia).

better levels of female literacy, demonstrating

proportion of land area covered by forests

land area protected to maintain biological diversity

energy use per unit of GDP

per capita carbon dioxide emissions and consumption of ozone depleting substances

proportion of population using solid fuels

proportion of population with sustainable access to improved water sources and sanitation

proportion of houses with access to secure tenure.

In addition to these targets, The World Summit on Sustainable Development (WSSD) adopted five further targets (Bojo and Reddy, 2003):

maintain or restore depleted fish stocks to levels that can produce the maximum sustainable yield by 2015

reverse the loss of biodiversity by 2010

establish a representative network of marine protected areas by 2012

increase the share of renewable energy in the total energy supply, and provide 35% of African households with modern energy within 20 years

Phase out, by 2020, production and use of chemicals that harm health and the environment.

Detailed indicators for these additional targets or "MDG plus" are still under discussion.

3.5.1 Environmental indicators, MDG7 and Asia

The sections below report the latest available data on progress against these targets for Asia as summarised in the *World Resources Report* (WRI, 2003), also available from www.developmentgoals.org/Goal7.xls.

Forest cover

FAO data (reported in WRI, 2003) show that from 1990 to 2000, the area of plantations grew in Asia by a significant 5.3% per year, but the area of natural forest declined by 0.1% per year over the same period. This relatively low pace of decline is largely due to China's success in increasing the area of its natural forests over the period. By 2000, the area of natural forests in Asia was estimated to be 375 million hectares or 10% of the world's total natural forests. This masks considerable country variation. While over 50% of Bhutan, Cambodia, Indonesia and Lao PDR is still covered by natural forests, forest cover is about one quarter of the land area in Nepal, Sri Lanka and Viet Nam and about 15-20% in the Philippines and Thailand. The lowest levels of natural forest cover are in India (10.6%), Bangladesh (5.4%) and the extremely low level of Pakistan (1.8%). Deforestation rates are highest in Pakistan (4.1%) and India (3.8%) and 2% or over in Thailand, Sri Lanka, the Philippines and Nepal. Indonesia and Myanmar were losing forests at a rate of over 1% per year, and other countries about 0.5% per year. The two positive exceptions were Bhutan which suffered no net change and, even more impressively, China which from 1990 to 2000 increased its natural forest cover (i.e. not including plantations) at over 0.6% per year.

Data on forest cover can often be deceptive as it provides little information on the quality of the forest. For example, in most countries the area of closed canopy forests is lower than the area of poor and regenerating forests.

Typically, access to improved sanitation is lower than access to safe water (with Bhutan, Thailand and Sri Lanka being the exceptions). This indicator measures the percentage of the population with excreta disposal facilities including connection to a public sewer, septic tank, pour-flush toilet, simple pit latrine and ventilated pit latrine. Examples of unimproved sanitation include open pit latrines, shared toilets and bucket latrines. The data show that, again, Cambodia is particularly low in terms of access (only 10% access in rural areas), as well as India (15%), Lao PDR (19%), Nepal (22%) and Viet Nam (38%). Between 40-50% of the rural population is served in Bangladesh (41%), Pakistan (43%) and Indonesia (43%). The remaining countries have much higher access levels at 69% for the Philippines, 70% for Bhutan, 93% for Sri Lanka and 96%% forippineipp82d[ep001 T8)]TJ anbopn, aets001

Table 3.2 Low-income countries in Asia: progress against the MDG7 environment targets

Countries	*Proportion of land covered by forests (2000)*	*% of land area protected (2003)*	*CO^2 emissions per capita (metric tons) (1999)*	*Traditional fuels as share of total (1999)*	*Access to sanitation (% of population in rural areas) (2000)*	*Access to improved water supply (% of rural population) (2002)*
South Asia						
Bangladesh	5.4	0.8	0.2	41.6	41	72
Bhutan	63.7	25.1	-	-	70	60
India	10.6	2.3	0.9	41.2	15	82
Nepal	26.3	8.9	0.1	86	22	82
Pakistan	1.8	4.9	0.7	39	43	87

will limit their daily intake of food and water so they can make it until evening. Without toilets at schools, girls' attendance declines significantly (WHO and UNICEF, 2004).

Chemical contaminants in drinking water are also an issue in several countries of the region, such as Bangladesh, where there are problems of arsenic and fluoride. There is a need to strengthen collaboration between health and environment authorities to protect sources of drinking water from man-made pollutants discharged from industries, human settlements, agriculture and other sources.

Indoor air pollution kills an estimated one million women and children prematurely in Asia. The most intense pollution occurs during short peaks when fuel is added or removed, the stove is lit, the cooking pot is placed or removed, or food is stirred. Those doing the cooking are consistently closer to the fire during these periods. Infants are especially vulnerable as they are generally cared for by the mother and they have immature respiratory systems (DFID, 2003a). Thus, the transition from traditional fuels to modern fuels such as kerosene and liquid petroleum gas would have a significant impact on infant and child mortality.

There are also more indirect linkages between poverty, health and biodiversity in terms of three broad areas (ADB et al, 2004). These linkages are (1) immediate or direct (i.e. impact on nutrition, natural resources and traditional medicines); (2) medium-term or indirect (i.e. changes in vector-borne diseases and ecological services that matter to the poor); and (3) long-term (i.e. links to genetic resources for food security and pharmaceuticals). In terms of the direct links, some natural resources such as fisheries are a key protein source or act as "famine foods" during times of food shortage and economic decline. Food products helped cushion poor communities during the East Asian financial crisis in the late 1990s (Pagiola, 2001). Many traditional medicines collected and often sold by the poor come from the wild, but are threatened or endangered. In terms of medium-term impacts, ecosystem changes such as new water systems can lead to the spread of vector-borne diseases such as malaria. One compelling example of the link between ecosystem change and health was the way deforestation in Indonesia in the late 1990s led to an outbreak in Malaysia of the Nipah virus from bats, which resulted in the massive destruction of a million pigs to prevent further transfer of the virus to humans. Finally, in terms of long-term links, all cultivated crops and livestock and many commercial medicines are derived from wild plants and animals. Loss of the wild gene pool reduces the basis for future crop breeding and medical developments.

Some occupations are particularly prone to environmental health problems. In Asia these include agriculture where excessive pesticides are used, small-scale mining where there is exposure to mercury and other pollutants, and ship breaking that exposes workers to toxics and other dangers. Pesticide poisoning is a widespread but often under-reported phenomenon. A recent FAO study (FAO, 2000) on over 200 pesticides used by Cambodian farmers found that 88% of the farmers had experienced symptoms of poisoning during or after spraying (dizziness, headaches, chest pains, red eyes). This included 35% who reported vomiting (a sign of moderate poisoning) during spraying and 5% who had become unconsciousness (a sign of serious poisoning).

3.6.2 The poor's livelihoods and the environment

A growing body of evidence from Asia demonstrates the importance of natural resources to the poor. However, these resources are under threat throughout Asia. This is illustrated in the case of fisheries resources, which are vital for the livelihoods of poor fishers and for protein consumption by many poorer households. In Asia, the cumulative weight of fish living in coastal waters is estimated to be 8-12% of what it was 50 years ago. With more fishers using more sophisticated equipment, the fish caught per unit of effort has been declining. In the Gulf of Thailand, catches per hour of the same ship with the same equipment has fallen from 250kg/hour in 1961 to 18kg/hour in 1999. This crisis will most seriously threaten the poorest fishers in the poorest countries (World Bank, 2004b).

The decline of resources and reduced access by the poor is also illustrated by the situation in Pakistan, one of the most environmentally stressed countries in the region. The Pakistan PPA (Pakistan Planning Commission, 2004) states: "Across Pakistan, and especially in rural areas, poor households are heavily dependent on natural capital for their livelihoods. However, analysts were extremely concerned about the declining size and quality of the natural resource base. Forests are declining, livestock numbers are

falling, and household land holdings are becoming smaller. Environmental degradation is disproportionally increasing the vulnerability of poor rural households."

3.6.3 Vulnerability of the poor and environmental disasters

Vulnerability to natural disasters and the role of vegetative protection in reducing damage was already an important issue but was reinforced by the recent Asian tsunami. Much of Asia experiences

3.6.5 Growth, poverty and the environment: trade-offs and synergies

Generating pro-poor growth is key to the achievement of the MDGs. Often natural resources are the main wealth available in low-income countries and rural areas with high poverty. Already natural resources such as minerals, forests, fisheries, wildlife tourism and groundwater contribute to the economic growth and exports of many Asian countries. In some cases this provides benefits to the poor – but in other cases the politics of natural resource extraction limit pro-poor benefits (DFID, 2004b).

Pro-poor growth from natural resources requires reconciling competing objectives for natural resources in terms of revenue generation, employment creation, direct subsistence use, and small and medium scale processing. A top-down approach to pro-poor growth focuses on large-scale private sector exploitation, generating revenues for pro-poor growth and diversification, for example large-scale mines, commercial fisheries and large-scale commercial logging. A bottom-up approach focuses on small and medium natural resource based enterprises. Examples would be subsistence fisheries, and small-scale

Colonialism and the process of declining resource access

Asia has experienced a long history of political changes that negatively impacted on poor people's natural resource based livelihoods. Colonialism often began the process of restricting access to natural resources, and redistributing resources to generate profits for the colonial power. In India, the British played a key role in creating the irrigation system of Punjab, with dramatic social and environmental impacts. In

emergency powers at the start of her term. When the new Congress, which was dominated by landowners, finally passed a land reform bill it was full of loopholes. Ultimately, the reforms achieved little (World Bank, 2003). However, land reform will remain a key ingredient in addressing poverty-environment issues.

Wealthy households control inputs needed to gain from the natural resource base such as credit and water for irrigation

To generate wealth from the land, many inputs are required including labour, seeds, fertilizers, pest control, tractors and threshers and in many arid areas, water for irrigation. To finance fertilizer and other inputs, credit is key. However, rural areas, with their dense inter-linked social network, often provide a monopoly position to the dominant wealthier landowners and traders with virtually all-or-nothing choices for the weaker parties. Surveys from west Bengal found that labourers tied to their landlords through credit, were least likely to take part in group bargaining and ag

India and Sri Lanka. Sometimes environmental regulations are introduced in a draconian way that negatively impacts the poor. For example, there is evidence that China's ban on tree felling in the upper watersheds to prevent floods has been applied too widely and has very negative impacts on some poor households. In many other cases, the restrictions on felling trees on private lands, as in Sri Lanka and west Bengal, encourage bribery, act as a tax on the poor and are a disincentive for households to plant trees.

Box 3.3 Ensuring poor households are not penalized – controversy over goats in India

While many blanket environmental restrictions have negatively impacted on the poor, there are some positive examples where this was resisted or later dropped. In India, some argued that goats must be banned and this was the view of the Indian Prime Minister Rajiv Ghandhi in 1987 who referred the matter to a high level task force. However, the report concluded: "sheep and goats do not pose a threat to the ecology as generally believed . . . their negative effect, if any, has been highly exaggerated." One member of the task force was more vocal and strongly opposed the ban: "Only people in Delhi can talk of such things. In the Himalaya, they [goats] are the main beasts of burden." The ban was dropped. Its impact on the poor would have been huge as 35% of the meat consumed by marginal farmers comes from goats, and its milk is drunk by a majority of the rural population (Khanna, 1992).

3.7.3 Conclusion: pro-poor environmental change requires political change

For the reasons given above, environmental change, and in particular access to natural resources, is an inherently political process. Power relationships determine that generally the poor with least economic or political power have least resource access. Changing this balance requires changes in the underlying power relations. For example, political forces can explain the spread of JFM in India. The initial experiments with JFM in Arabari in west Bengal received strong support after the Left Front came to power in that state in 1977. Similarly a World Bank JFM project started in Andhra Pradesh in 1994 caught the attention of the populist Chief Minister who spread the approach throughout the state after 1996 (Lele, 2000).

3.8 Poverty-environment analysis of selected Asian countries

Summary of the poverty-environment context for the six most populous lower income countries in Asia:

China (1.29 billion)

India (1.04 billion)

Indonesia (217 million)

Pakistan (148 million)

Bangladesh (143 million)

Viet Nam (80 million)

Each sub-section concludes with some processes and ways in which IUCN could be involved.

3.8.1 China

Rapid decline in poverty

China, with a population of almost 1.3 billion, has experienced one of the fastest declining poverty rates in history, assisted by the rapid economic growth of over 10% a year. In 2001, 16.6% of the population remained in extreme poverty below US$ 1 a day. This falling poverty has been accompanied by impressive primary school enrolment (91%), relatively low under-five mortality (40 deaths per 1,000 live births) and high female literacy (83%).

Health and environment – water and sanitation

With 75% of its rural population having access to safe drinking water and 69% of its rural population having access to improved sanitation, China is on track at the national level to meet the MDG target for this indicator. However, there are still major health problems associated with unsafe water and lack of hygiene

Poverty-environment trade-offs through anti-poor policies

In other cases, current policies may create trade-offs between poverty reduction and environmental protection. The state seems to be recognising the high cost that environmentally damaging growth has had in the past and several programmes are underway to address this. But it is vital that these environmental policies are implemented in ways that do not harm the poor, in particular the establishment of nature reserves and the introduction of the logging ban.

Key process and institutions for IUCN engagement

Both the state and a rapidly growing private sector lie at the heart of poverty-environment challenges and opportunities in China. Unlike other Asian countries, civil society is still developing and is not a major force in policy change. The private sector can ensure that new technologies and efficiency gains are used to reduce pollution and use resources more efficiently. The state faces challenges in moving from an engineering-led development approach to one that is more participatory and coordinated. Location specific pro-poor environmental policies that avoid a uniform one-size-fits-all approach are needed.

Given its unique political structure and history, which can limit the freedom of civil society groups, the approach to poverty-environment issues is not straightforward. However, there seems to be interest from a number of key government institutions and development partners to highlight poverty-environment issues. This was the subject of an international workshop on 8-9 January 2004 jointly organized by the National Development and Reform Commission (NDRC) and the Chinese Academy of Sciences (CAS, 2004) with a number of development agencies.

The China Council on International Cooperation on Environment and Development (CCICED) is one forum for international and Chinese policy makers to come together and has existed for the last decade to highlight key environmental issues in China. Recently the Council has started to pay greater attention to poverty related issues. The group undertook some important work highlighting the negative livelihood impacts on the logging ban. A number of international NGOs, such as WWF, are active in the poverty-environmental field.

3.8.2 India

Health and the environment – low sanitation access

Access to improved water sources is relatively high in rural areas (82%), but access to sanitation remains poor at 15%, the lowest in South Asia. This causes major health probl

Livelihoods and biodiversity

Indonesia, as the world's largest tropical island archipelago stretching across many time zones, is the most biologically diverse country in the world. Though it only covers 1.3% of the earth's surface, it ranks first in the world for mammals (515 species, 36% of which are endemic), third for reptiles (over 666 species), fourth for birds (1,519 species, 28% of which are endemic), fifth for amphibians (270 species) and seventh for flowering plants. It also has the most biologically rich coral reefs in the world, particularly around Sulawesi and Muluku with around 1,650 species and 60% of the world's hard coral species (World Bank, 2004). These natural resources also sustain many livelihoods. Indonesia's reefs provide livelihoods for over 67,500 coastal villages throughout the country. Twelve million people live in and around Indonesia's forests (World Bank, 2004a).

Excessive capacity in the timber industry drives deforestation

Indonesia has many more wood processing firms than sustainable timber sources, leading to deforestation and illegal logging. Data from the Forestry Information Centre shows that the rate of deforestation increased from 1.6 million to 1.8 million hectares per year between 1985 and 1997, to more than 2.83 million hectares between 1998 and 2000, 80% of which was due to illegal logging. If the trend continued, there would be no forests left by 2010 in Kalimantan and North Sumatra (Jakarta Post, 2005).

Key process and institutions for IUCN engagement

Much of the policy process is still in a state of flux in Indonesia. However, what is clear is that there is growing provincial autonomy, and this is an important area for natural resources. One of the major environmental challenges is the forestry sector, but while the federal Forestry Ministry is now more progressive, much of the forests are being lost in the

Poverty, health and environment: the problem of arsenic poisoning

The underground water of more than 40 out of 64 districts of the country is contaminated with arsenic, ranging from low to very high levels. Drinking arsenic-contaminated water can, over a prolonged period, cause arsenicosis. An estimated 20 million people are affected (Ahmed et al., 2005).

Poverty and environmental vulnerability

Bangladesh will be one of the countries most affected by climate change. A predicted one-metre rise in sea levels over the next century will cover nearly 20% of the country and affect approximately 25% of the then much larger population (DFID, 2004b).

Wetlands based livelihoods

Bangladesh is situated on the floodplain of three major rivers and the water flow is second only to the Amazon River. About 6.7% of the country is always under water, 21% is deeply flooded (more than 90 cm) and around 35% experiences shallow inundation (Ahmed et al., 2005). The wetlands play a very critical role in the rural economy and natural resource base. The livelihoods of about one hundred million people are inextricably linked to the productivity and sustainability of the wetlands.

Importance of fishery livelihoods

Fisheries provide over 40% dietary protein requirements for the population and account for more than 5% of the national GDP. According to the World Bank, Bangladesh is the world leader in freshwater fish production per unit area with 4,016 kg/sq km of water bodies and a 5.5 kg per capita fish production. The fisheries sector provides full-time employment to an estimated 2 million people (Ahmed et al., 2005).

Fisheries livelihoods dominated by the elite

some of the worst in Asia with under-five mortality at 110 per 1,000 live births and female literacy at only 30%. These poor social statistics are partly the result of the cultural impediments to gender equity in the country.

Poverty and environment links

Pakistan suffers from some of the most dramatic environmental stresses in the region. Water scarcity is a major problem, forest cover is the lowest in the region at under 2% and is being lost at over 4% a year, indoor and outdoor pollution are widespread and industrial pollution largely unregulated (WRI, 2003). There are significant poverty-environment links since the poor lack access to natural resources, suffer from environment-related ill health and are most affected by environment-related shocks such as floods and

were attributed by some to deforestation by commercial cooperatives in the 1980s, and a ban on commercial logging was introduced in 1993 that remained in effect on and off until December 2000. It was briefly lifted and then re-imposed. However deforestation has continued over the decade. Commercially logged forests

Forest and livelihoods

schemes were driven (or obstructed) by the key actors, including power relations among the beneficiaries, traditional leaders, local government, NGOs and donors.

3.9.4 Donor coordination and poverty reduction strategy processes

With the advent of the MDGs and other reforms within the international development community, donors have become increasingly focused on providing support to low-income countries to reduce poverty and achieve the other MDG targets. As earlier sections have shown, progress in Asia is underway although many gaps remain.

In order to promote improved donor coordination and support greater ownership of policies by low-income country governments, the international community has been supporting countries to develop PRSs. Often, in Asia, these PRSs have been combined with existing government planning processes such as Nepal's five-year plan. These PRSs are important since the World Bank, IMF and many other multilateral and bilateral donors have pledged to link their funding to the priorities identified in PRSs. PRSs also typically identify targets and key actions for government policy. For this reason, PRSs are an important vehicle for the incorporation of poverty-environment issues.

3.10 Key players on poverty-environment for IUCN engagement

This section identifies seven major groups for IUCN to engage with in promoting poverty-environment issues in Asia:

the rural poor

civil society groups and the media

innovative politicians

government alliances

environmental regional bodies and groupings

research organizations and networks

development agencies and international organizations.

The private sector and sub-national authorities were already covered in the previous section.

3.10.1 Bottom-up coalitions with the rural poor

The poor are not passive in the face of political pressure although they often face major hurdles and opposition. Much can be learned from processes where the poor themselves have initiated political change. Due to the dependence of some poor households on natural resources, they face strong incentives to struggle to protect their access rights. There are some striking examples of poor groups, often with support from others, organizing to demand access to natural resources such as land, fisheries and forests. In urban areas, many slum settlements have organized themselves to demand tenure and services. In the Philippines for example, the barrios in urban areas are locally run low-income neighbourhoods.

3.10.2 Partnerships with other civil society groups and the media

A number of Asian countries, such as Thailand and Sri Lanka have active environmental journalist associations and these can be a key constituency for increasing public concern for the environment. Religious leaders and professional organizations, as well as the better-known NGOs within civil society can also be useful allies.

There is often a tendency to engage with the more urbanised, often English-speaking NGOs based in the capital, but for poverty-environment issues it is often more important to engage with NGOs that have field offices in the more rural areas and which may have better contacts and understanding of on-the-ground realities.

3.10.3 Alliances with innovative politicians

While government bureaucracy is important (see below), earlier sections have argued that pro-poor environmental change is inherently political and thus requires alliances with innovative politicians. One of the challenges of Asia, as in many parts of the world, is that the political elite is often not overly focused on pro-poor policies. This is not always the case; there are active debates on pro-poor policies among some members of the political leadership in China, Viet Nam and to some extent India, Sri Lanka and Pakistan. However, other countries such as Bangladesh, Nepal and Indonesia are still fundamentally unstable and the political class is often involved in a struggle for its own survival.

This suggests that the optimum strategy is to identify the more progressive leaders who can make a difference in terms of pro-poor environmental reform and provide support to them in whatever ways will help. Often these more progressive Ministers will be battling opposition from within from entrenched interested parties within the private and public sector. For example, this has been the approach followed by several external agencies in providing support to the more reform-minded Minister of Forestry in Indonesia.

3.10.4 Government alliances

One of the institutional challenges of environmental management is the range of different agencies 6(public sec

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World Bank

The World Bank has, through its revised Environmental Strategy of 2001, given a much stronger emphasis to poverty-environment issues (World Bank, 2001), which like the ADB gives a strong emphasis to the livelihoods, health and vulnerability framework. Like ADB, much of the environmental staff in the Bank is responsible for compliance with the different environmental procedures and safeguards. However, the Bank is also seeking to develop a larger portfolio of environmental projects and take a more pro-active approach on poverty-environment issues, for example by giving emphasis to integrating poverty-environment issues within PRSs.

Bilaterals

Many bilaterals have been active in the environmental field in Asia, particularly the Nordics, the Dutch and USAID(e eonmental fieMany). ental s ha r-2(t0.1422 Tw 067.404 -1.53 Td23.5.15vironme7(m-5(cViet Nams

Resource Centre on Urban Agriculture and Forestry

United Nations Conference on Trade and Development

4.4 West African countries – an overview

Country	Current environmental issues	International environmental agreements	Poverty (% of population below poverty line)[5]	Economy
Benin[6]	Inadequate supplies of potable water; poaching threatens wildlife populations; deforestation; desertification[7].	*Party to:* Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Environmental Modification, Hazardous Wastes, Law of the Sea, Ozone Layer Protection, Ship Pollution, Wetlands.	In rural areas: 31.4% (2002). In urban areas: 22.2% (2002)[8].	Underdeveloped and dependent on subsistence agriculture, cotton production and regional trade. Economic policy reforms and political stability have enabled Benin to achieve a 4.9% average annual economic growth in 1991-2001[9]. Exports: cotton, palm oil products, coffee, crude oil and cocoa beans. Despite a decade of positive per capita income growth, data suggests that poverty has not fallen significantly, particularly in the rural areas[10].
Burkina Faso[11]	Recent droughts and desertification severely affecting agricultural activities, population distribution, and the economy; overgrazing; soil degradation; deforestation[12].	*Party to:* Biodiversity, Climate Change, Desertification, Environmental Modification, Hazardous Wastes, Law of the Sea, Marine Dumping, Ozone Layer Protection.	46.4% (2003 est.), incidence of poverty being predominantly rural[13].	Among the poorest countries in the world. The high population density and limited natural resources result in poor economic

Cape Verde[17]	Soil erosion; demand for wood used as fuel has resulted in deforestation; desertification; environmental damage has threatened several species of birds and reptiles; illegal beach sand extraction; overfishing[18].	*Party to:* Biodiversity, Climate Change, Desertification, Environmental Modification, Hazardous Wastes, Law of the Sea, Marine Dumping, Ozone Layer Protection.	30% (2000)[19].	Service-oriented economy (commerce, transport, tourism, and public services, accounting for 72% of GDP). Suffers from a poor natural resource base, including serious water shortages exacerbated by cycles of long-term drought. Although 70% of population lives in rural areas, the share of agriculture in GDP (2001) was only 11%. 82% of food must be imported. It annually runs a high trade deficit, financed by foreign aid and remittances from emigrants. Economic reforms aimed at developing the private sector and attracting foreign investment to diversify the economy.
Chad (Central Africa)[20]	Inadequate supplies of potable water; improper waste disposal in rural areas contributes to soil and water pollution; desertificationpine ifng7[birffersw 0 -1.147 77(ar3al)6(ar)8(e8r)7( )]TJ0.0011 Tc 0 TWdous[ptls t(miral)6(a.6105 Tm(.)T0)-2(s)]T)]TJ4.2Tc 0.00(S)7(ed, .14al Modifi09s)4( )]TJ4)]TJ4.75			

Guinea Bissau[34]

Mauritania[42]
(Northern

Sierra Leone[54]	Rapid population growth pressuring the environment; over-harvesting of timber, expansion of cattle grazing, and slash-and-burn agriculture have resulted in deforestation and soil exhaustion; civil war depleting natural resources; overfishing[55].	*Party to:*

4.5 Poverty in Western Africa

4.5.1 Definition of poverty and poverty dimensions

Access to safe water increased in almost all countries, with the exception of The Gambia, Guinea, Sierra Leone (not surprising in view of the civil war during most of the 1990s) and Togo.

4.6 The environmental status in West Africa

4.6.1 Land and agriculture

Land resources include soil (important for agriculture), land cover (important for the environment) and landscape (important for human habitat and welfare). In the last 30 years the main driving force leading to pressure on land resources has been increasingly for food production. The trend from 1985 to 1995 showed population growth racing ahead of food production, particularly in Africa[73].

Africa's total land area covers 29.6 million km^2. Land is central to development in Africa since 60% of the population is dependent on agriculture for livelihoods. The main issues related to land include increasing degradation and desertification together with inappropriate and inequitable land tenure systems. Other problems include a decline in soil fertility, soil contamination, land management and conservation, gender imbalances in land tenures[74] and conversion of natural habitat to agricultural or urban uses.

A major concern is land degradation, which leads to significant reductions in the productive capacity of the land. About 17% of land in Africa is considered ranging from lightly degraded to extremely degraded (about 5 million hectares are considered extremely degraded)[75]. Human activities contributing to land degradation include unsuitable agricultural land use, poor soil and water management practices, fuel wood consumption[76], deforestation, removal of natural vegetation, overgrazing, improper crop rotation and poor irrigation practices to which we must add the industry and urbanisation process. Natural disasters (including fove

4.6.2 Forests

Forests provide environmental services to nature[79] and humans[80] and are sources of economically valued products[81]. Deforestation is a major concern and represents an enormous loss of natural economic wealth to the continent. Major direct causes of forest degradation brought about by humans include over-harvesting of industrial woods, fuel wood and other forest products and overgrazing. Underlying causes include poverty, population growth, markets, trade in forest products and macroeconomic policies. Forests are also subject to natural factors.

Forests influence and are influenced by climate change[82] and their management or destruction can affect the course of global warming and are critically important for maintaining biological diversity.

Africa's forest cover is estimated at 650 million hectares (2000), constituting 17% of the world's forests. During 1990-2000, Africa lost more than 50 million hectares at an annual average rate of 0.7%. In the 1990s most of the deforested areas were converted to agricultural land (small-scale agricultural enterprises). The deforestation rate is highest in Western Africa compared to the continent as a whole (see Table 4.2)[83].

Table 4.2 Deforestation in Western Africa

Change in forest land 1990-2000	Total land area (million hectares)	Total forest 1990 (million hectares)	Total forest 2000 (million hectares)	% of land forested 2000	Change in 1990-2000 (million hectares)	% change per year
Western Africa	605.6	85.1	72.5	12.0	-12.6	-1.53[84]

Selective vegetation removal contributes to loss of forest quality and biodiversity, over-harvesting of non-timber resources adds to this problem. Also bushmeat trade[85] (Central and Western Africa) may be endangering a number of forest-dwelling mammals. Pressure on forests and woodlands are exacerbated by the construction of roads that open up access to closed forest areas, making the resources more accessible and their trade more profitable.

4.6.3 Biodiversity

In Africa, in the last 30 years, habitat loss and degradation have been major issues and bushmeat trade has had a significant impact on biodiversity. Biodiversity resources are also extensively used for subsistence and commercial purposes. The main response to loss of natural habitat has been the establishment and extension of protected areas[86], but lack of financial support and weak law enforcement are common problems in African protected areas. A key trend in the last 30 years has been the increasing involvement of local people in conservation initiatives, allowing people living near protected areas to participate in land management decisions, giving people rights to wildlife resources and ensuring that local people derive economic benefits from wildlife conservation (community-based conservation programmes).

[79] *Soil generation, soil and water conservation, purification of air and water, nutrient recycling, maintenance of biological diversity, mitigation of climate change, carbon sequestration.*
[80] *Employment and income, recreation, protection of natural and cultural heritage.*
[81] *Industrial wood, fuel wood, non-wood forest products such as fibre, food, medicine.*
[82] *Play an important role in the global carbon cycle.*
[83] *UNEP, 2002.*
[84] *Compared to -0.37% (Central Africa), -0.87% (Eastern Africa), -1.22% (Northern Africa), -0.7% (Southern Africa).*
[85] *The killing of wild animals, often endangered species such as gorillas, chimpanzees, monkeys, okapi, elephant, etc., for their meat.*
[86] *Overall, approximately 5% of the land area of Western Africa has been designated as protected (for a total of 29 million hectares).*

4.6.4 Water

In Africa the distribution of surface water and groundwater is uneven and spatial distribution of water resources does not coincide with the population densities. Groundwater is a major source of water, contributing 15% of Africa's resources[87], and is used for domestic and agricultural consumption in many areas, particularly the more arid sub-regions. Areas dependent on groundwater reserves are also at risk of water shortages, as water is extracted far more rapidly than it is recharged. The major factors influencing water availability include growing domestic consumption for drinking water and sanitation, irrigated agriculture and industrialization[88].

Little attention has been paid to

monitoring and enforcement, mainly because of the size of the territories and the lack of efficient surveillance systems[90].

4.6.5 Urban areas

The majority of the Western African population is still rural, but urban growth rates are the most rapid in the world. West Africa is the second most urbanized sub-region with an average urban population of 40%[91]. The high urban growth rate (4% a year) is a result of rural-urban migration, population growth and conflict (for some areas). People leave rural areas because of declining agricultural productivity, and lack of employment and access to basic infrastructure. Environmental disasters and conflicts have also caused many people to seek refuge in urban centres.

hard times also compromise people's capabilities to cope with such disasters and therefore amplify the impacts.

The increasing frequency and severity of climatic variability can be partially attributed to human activities such as deforestation and inappropriate management of land and water resources. The clearing of tropical forests in Central and Western Africa has altered the local climate and rainfall patterns and increased the risk of droughts. Clearing of vegetation may also increase floods and soil erosion. Damming of rivers, draining/degradation of wetlands, deforestation and overgrazing reduce the environment's natural ability to absorb excess water, enhancing the impacts of floods.

In the last 30 years, Africans have sought refuge from natural and human-caused disasters with both environmental and socio-economic impacts. Often refugees[95] are established in fragile ecosystems where they exert considerable pressure on natural resources since they have no other means of survival. Refugees may also experience further conflicts with neighbouring communities due to competition for resources.

Disaster responses have tended to focus on national and sub-regional levels and concerted regional efforts for disaster management do not exist. There is also a tendency to react rather than prevent by improving and enhancing environmental management and agricultural practices. However, there have been some prevention successes, for example famine resulting from drought, such as the Famine Early Warning System project, the implementation of a new efficient seed distribution system in Niger and promotion of more drought-resistant crop varieties.

In some parts of West Africa, long-term measures such as urban planning regulations prohibiting developments along watercourses have been promulgated, although resource constraints often prevent them from being strictly enforced.

With global warming, the incidence of drought is likely to increase in many parts of Africa. The frequency and intensity of cyclones and floods in some areas are also likely to increase, adding to the stresses on water and food security and possibly contributing to epidemics[96].

4.7 Relationship between environmental status and poverty in West African countries

Some work has been done on population-poverty-environment linkages. A second area of research is the use of mapping tools for a better understanding of poverty-environment linkages. A third instrument analysed is the PRS, where environmental aspects are analysed in relation to poverty reduction.

4.7.1 The population – poverty – environment spiral

Poverty is endemic in many areas of Africa and the rapidly growing population continues to rely on natural resources and agriculture for much of its economic productivity and for the provision of basic human needs. These conditions leave the region highly vulnerable to the adverse impacts of environmental changes. Population dynamics, poverty and environmental change are linked in many ways and through multiple social and economic mechanisms at various geographic levels.

Growing populations, economic development and changes in climate contribute to increasing the risk of land degradation in Africa. Important areas of. IAfric tandccrental et

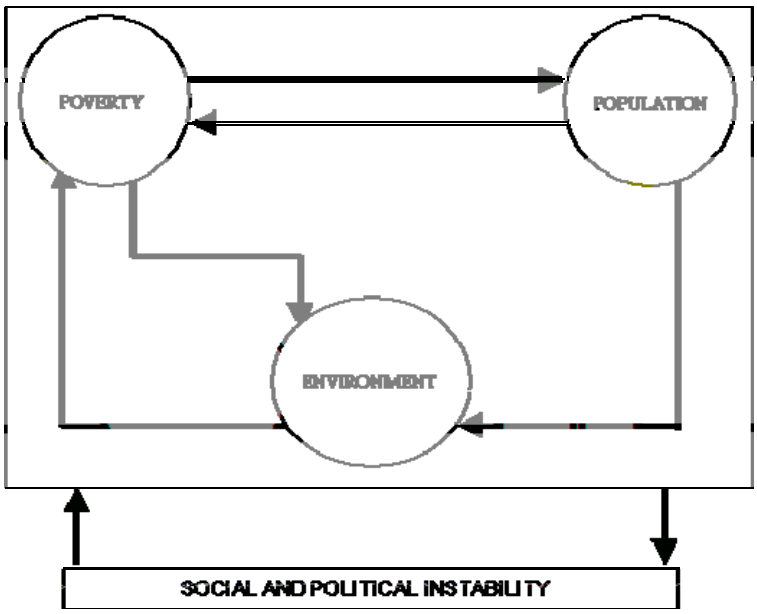
crop production. The environment suffers as a result since soils are mined and the use of fertilizers and pesticides becomes more extensive. Water resources and aquatic ecosystems are particularly damaged.

Much of the increased demand for food is met through converting forests to cropland. This is reflected in the loss of total forest area and increased exploitation of remaining forests. In some areas, forest resources are overexploited for the export market. Furthermore, poverty leads to overexploitation of the remaining natural forest resources for fuel, food, medicines and shelter.

An increasing area of research and action is the theme of migration. Conflicts lead to migration within and out of the Western African region, which in turn affects the natural resources.

Figure 4.2 The population-poverty-environment spiral

The population-poverty-environment spiral



Source: Marcoux, 1999.

How poverty affects population:

high child death rates lead parents to compensate by having more children

lack of water supply, fuel and labour-saving devices require children to help in fields and homes

lack of security (illness and old age) increases the need for numerous children

lack of education means less knowledge of family planning methods and benefits

lack of confidence in future and control over circumstances does not encourage family planning

low status of women means women are often uneducated, without power to control fertility.

How population affects poverty:

unemployment, low wages for those in work, dilution of economic gain

increasing landlessness - inherited plots divided among many children

Table 4.3 References to the environment in the PRSPs

Country	Completion date of current PRSP	Reference to national legal instruments, strategies or concepts	Main thematic focus
Benin	December 2002	Programme National de Gestion de l'Environnement.	

4.8 Current key processes in Africa

4.8.1 NEPAD

NEPAD focuses on a series of priorities that are conducive to poverty alleviation, such as peace, agricultural development, basic infrastructures and the environment. Donor support is increasingly based on the priorities and achievements in the frame of the NEPAD. The Environment Action Plan for the First Decade of the 21st Century also considers the importance of GEF[97] support for the global environment in Africa.

4.8.2 Land reforms

At the policy level in Western Africa it is worth underlining that there is a process of analysis and exchange among local farmers' organizations on land tenure schemes, e.g. schemes for transmission and exploitation of land and natural resources. Many countries are in the process of defining or implementing land reforms (Senegal, Guinea, Niger). In this context, OXFAM[98] is currently launching an initiative to mobilise national farmers' organizations in a debate on land tenure[99]. The process will take place in each country and will be monitored by the ROPPA. The objective is to initiate a reform process that will achieve economic development and social justice. In Senegal for instance, this process has already been launched by

Table 4.4 Short presentation of selected organizations active in Western Africa

Type of organization	Name of organization	Location	Description

Table 4.6 Overview of possible areas for knowledge sharing in Western Africa

development and conservation		Burkina Faso	
Important political processes	Land tenure reforms	CNCR Senegal	Work on land tenure reform programme through selected donors (project of agricultural orientation law based on proposals coming from agricultural associations), process of elaboration of a land tenure action plan.
	Decentralisation	CNCR, Senegal FNGN, Burkina Faso	Decentralisation as a line of action for reinforcing poverty-environment linkages together with local associations.
Indigenous knowledge *Possibility to take into account gender aspects*		SDC Niger Centre Suisse de	Specific work on pastoralists at the SDC local office in Niger (implementation for a complementary law to the ordinance on the rural code).

4.10 Conclusion: specific recommendations

Globally, since the mid-1990s, increasing attention has been drawn on poverty in Africa. The World Food Summit in 1996 set the target of halving poverty by 2015.

NEPAD[104] indeed gives due place to environmental protection for the whole continent as a means to combat poverty. NEPAD has provided a momentum for sustainable development in Africa and has also enhanced donor mobilisation for poverty reduction on the c

	1999	2002	2003
eople			

opulation, total02 0.502 9l4B:Bbopulat1.78 84a 724.9.5 746.48 213.502 9l4B:Bmo) 733.64 415.62 1.5 ref78 744.78 n0.78 ref78 cn294

Annex 4C: Cameroon Data Profile

	1999	2002

Annex 4D: Cape Verde Data Profile

	1999	2002	2003
People			
Popu on2 re, tota2 reW*.4 237.32 2.68 757-0.64 755.74e			

Annex 4E: Chad Data Profile

	1999	2002	2003
People			
Population, total (mio)	7.6	8.3	8.6
Population growth (annual %)	3.1	2.9	2.8
Life expectancy (years)	..	48.4	..
Fertility rate (births per woman)	..	6.2	..
Infant mortality rate (per 1,000 live births)	..	117.0	..
Under 5 mortality rate (per 1,000 children)	..	200.0	

Annex 4F: Cote D'Ivoire Data Profile

	1999	2002	2003
People			
Population, total (mio)	15.5	16.5	

Annex 4G: Gambia Data Profile

	1999	2002	2003	
People				
Population, total (mio)	1.3	1.4	1.4	
Population growth (annual %)	3.4	2.7	2.3	
Life expectancy (years)	..	53.4	..	
Fertility rate (births per woman)	..	4.8	..	
Infant mortality rate (per 1,000 live births)	..	91.0	..	
Under 5 mortality rate (per 1,000 children)	..	126.0	..	
Child immunization, measles (% of under 12 months)	88.0	90.0	..	
Net primary enrolment (% relevant age group)	66.7	..	..	
Net secondary enrolment (% relevant age group)	22.9	..	..	
Environment				
Surface area (sq. km)	11,300.0	11,300.0	..	
Freshwater resources per capita (cubic meters)	..	5,759.5	..	
CO2 emissions (metric tons per capita)	0.2	..	..	
Economy				

Annex 4K: Liberia Data Profile

	1999	2002	2003
People			
Population, total (mio)	3.0	3.3	3.4
Population growth (annual %)	2.7	2.5	2.4
Life expectancy (years)	..	47.1	..
Fertility rate (births per woman)	..	5.8	..
Infant mortality rate (per 1,000 live births)	..	157.0	..
Under 5 mortality rate (per 1,000 children)	..		

Annex 4L: Mali Data Profile

	1999	2002	2003

Annex 4M: Mauritania Data Profile

	1999	2002	2003
People			
Population, total (mio)	2.4	2.6	2.7
Population growth (annual %)			

Annex 4N: Niger Data Profile

	1999	2002	2003

Annex 4O: Nigeria Data Profile

	1999	2002	2003
People			
Population, total (mio)	123.9	132.8	135.6
Population growth (annual %)	2.5	2.2	2.1
Life expectancy (years)	47.5	45.3	..
Fertility rate (births per woman)	..	5.1	..
Infant mortality rate (per 1,000 live births)	..	100.0	..
Under 5 mortality rate (per 1,000 children)	..	201.0	..
Births attended by skilled health staff (% of total)	41.6	..	..

Annex 4P: Senegal Data Profile

	1999	2002	2003
People			
Population, total (mio)	9.3	10.0	10.0
Population growth (annual %)	2.3	2.3	2.2
Life expectancy (years)	..	52.3	..
Fertility rate (births per woman)	..	4.9	..
Infant mortality rate (per 1,000 live births)	..	79.0	..
Under 5 mortality rate (per 1,000 children)	..	138.0	..
Child immunization, measles (% of under 12 months)	60.0	54.0	..

Annex 4Q: Sierra Leone Data Profile

	1999	2002	2003
People			
Population, total (mio)	4.9	5.2	5.3
Population growth (annual %)	2.1	2.0	1.9
Life expectancy (years)	..	37.4	..

Annex 4R: Togo Data Profile

	1999	2002

Annex 4S: Growth performance and poverty incidence

Growth performance	GNI per capita (US$)		GDP growth rate[105]	
	1990	2000	1980-1990	1990-1999

Annex 4T: Social indicators

	Illiteracy rate (%)	Infant mortality rate (per 1,000)

Part 5: Case Study - Examples from Swiss development programmes and potential for collaboration between IUCN and Swiss organizations

By Nadine Speich

5.1 Summary

Integrated concepts such as integrated water management or food security are particularly good frames to enhance poverty-environment linkages; the clustering of thematic issues and activities such as NRM, provision of environmental services and sound-chemicals management can make intervention more effective.

Supporting multilateral initiatives can be beneficial for poverty-environment linkages, e.g. by causing work with NGOs and the private sector to be more systematic (e.g. new GEF projects in the chemicals management area); and by making information exchange and funding more effective (e.g. the global mechanism under the convention on desertification).

Whilst creating markets or improving access to markets can be beneficial for increasing incomes, these approaches can also fail due to other factors, e.g. unclear land tenure, difficulty in economic valuation, or low start up financing.

Land tenure is again highlighted as a key issue in promoting market access and the use of market instruments, and in applying diversified risk reduction strategies (insurance, saving schemes). Decentralisation policies provide new frames to tackle land tenure along with building the capacity of local institutions.

New integrated approaches to risks and protection taking into account environmental, social and economic factors such as natural disasters, health factors, loss of activity, retirement, debt, income or post-harvest losses, are expected to make poverty reduction more effective (e.g. insurance and saving strategies).

Social and cultural considerations at the household level are a good starting point for building on diversified livelihood strategies.

A systematic gender analysis is a prerequisite for good project design and implementation, and increased focus and support should be given to the development and use of methodologies for gender approaches in NRM and conservation for poverty reduction.

The following are research issues of interest to Swiss organizations and for IUCN: social learning and indigenous knowledge in syndrome mitigation, decentralisation and local livelihood property rights, empowerment and the role of NGOs, vulnerability to conflicts and natural disasters, health, sanitation and poverty-related diseases.

5.2 Introduction and definitions

The purpose of this paper is to explore examples of projects and research studies on poverty reduction whenever this objective is related to an objective of protecting the environment. In the first stage,

this paper gives a state of the art review of Swiss development and research, providing examples of selected projects. In the second stage, it provides some elements and proposals for possible cooperation between SDC and IUCN. SDC is taken as the main Swiss organization in development since it supports many other organizations in the field and is the main contributor of research activities in development. Nevertheless, the paper also includes some Swiss NGOs such as Intercooperation, which could be of interest for IUCN. IUCN is an international body gathering governments and NGOs and already has a frame agreement with SDC for common activities. IUCN's field of work is conservation and protection of biodiversity. Its current area of interest is to explore PRSs and conservation. This paper will contribute to the review of activities and research on this topic but will take into account the protection of natural resources in a broad sense.

Poverty is considered a multifaceted concept. As defined in the World Bank Report (WDR) 2000/2001, poverty has the following dimensions: lack of opportunity or access to markets, resources, income generating opportunities, empowerment, influence on state institutions, participation in political processes and local decision-making and security, as well as vulnerability to health, environmental, economic and social risks and lack of capability, or human capital and ability to be educated and skilled. In summary, the four main dimensions are: lack of opportunity and assets, lack of power, lack of security and lack of capability.

IUCN, like many other organizations and donors, has taken the definition of the World Bank as a basis for its work. IUCN has explored the poverty-environment linkages more deeply because it has recognized that the linkages were far more complex than had been assumed[106]. In IUCN's paper *Elements of IUCN's Conceptual Framework*[107], poverty-focused conservation has been defined as aiming "to ensure that environmental resources are sustainably managed and positively employed to empower the poor and help them secure a desirable livelihood, increase their assets, and reduce vulnerability to shocks". In this paper guidance on possible conservation activities in areas of high poverty is given in a matrix combining entry points, local interventions and policy interventions for the four dimensions of poverty.

5.3 The Swiss approach to reinforcing poverty alleviation and environmental protection

After an overall presentation of SD/n(lit)wrty

The challenge is to make the integrated approach operational. An example of this is the integration of sound-chemicals management into IWRM. The use of chemicals affects protected areas and the conservation of natural resources through activities such as agricultural production and mining. Although productive activities are sometimes located far from the protected areas, their impact on water pollution can substantially affect conservation of the protected areas. Comprehensive approaches that aim to reinforce

security: priority to local foodstuffs, production and management of quality seeds, household management practices and technologies and sustainable use of soil and water. It considers also the principle of food sovereignty as essential.

A third example is the promotion of an integrated approach to risk management. This approach implies multiple strategies for poor families including, among others, social risk insurance, savings policies,

accumulation, which was set-up in the frame of the First Continental Conference of the Basle Convention in Rabat in 2001. The ASP provides a possibility for SDC to participate in a broad partnership involving the private sector. Both projects focus on civil society participation and strengthening the voice of the poor on sound-chemicals management. They are new projects that were conceived in view of the lack of NGO

5.3.5 The potential and limits of access to markets

Many productive projects have focused on marketing and commercialisation in order to strengthen poverty reduction through income generation. Economic valuation of resources and practices is developed as a basis for the marketing strategies of goods and services, for the application of economic instruments and for risk evaluation. Some projects support economic valuation of overall environmental protection at the national level per se, as an instrument of policy dialogue. Calculations of the cost of environmental degradation include health costs and the impact on social services. For instance, SDC supported the economic valuation of the environment in several Northern African countries, e.g. Egypt and Algeria, in the frame of the World Bank METAP programme[109].

There is a potential for commercialisation as an entry point for products or services provided by poor communities through sustainable NRM. Commercialisation can add value to natural resources. SDC has promoted workshops like the 2000 ASOCAM[110] workshop in Ecuador for the trade of products produced in hillside areas. The possibilities of commercialising vegetables, traditional crops and products such as quinoa, tubers, and spices as well as transformed products like chips or corn flakes are analysed. A variety of different instruments are analysed and tested such as local or regional product stock exchanges, brand marks, labels and "Appellations of Origin". Many Swiss organizations that are indirectly supported by SDC have gained strong experience in the commercialisation of products from organic production (textiles from organic cotton, cosmetics) with a strong focus on sustainable management of natural resources such as water or forests.

The presentation of the interrelations between forests and water in a SDC-funded publication, "Forests and Water: Managing Interrelations"[111], discusses the relevance of payment and compensation for environmental services for poverty reduction. Based on a historical review, important driving forces for payments and compensation for environmental services are identified, such as public relations motivations by companies, income-generating opportunities, and the potential to relieve public budgets or the pressure from future potential legislation.

5.3.6 Increased focus on land tenure

Several projects have included property rights issues as an area of work in the course of the implementation, based on the lesson that clear ownership relations are a prerequisite for the market approach. For instance, globalization puts pressure on the attribution of clear property rights in order to mobilize adequate resources (financial resources), the obtaining of insurance for a whole range of risks, and increasing entrepreneurial development. In particular, economic considerations of property right schemes point out the correlation between private property and the exclusion of some actors from land tenure as well as from credit

Box 5.7 The Programa de Apoyo para la Agricultura Sostenible en Laderas de América Central - PASOLAC *(implemented by Intercooperation)*

PASOLAC was set up in Nicaragua in 1992 and later expanded into El Salvador and Honduras. The project aims to improve sustainable soil fertility and market oriented production technology on hillsides. It places special emphasis on identifying and validating traditional and modern approaches. PASOLAC assists farmers to validate and introduce technologies that reduce vulnerability to drought, focusing on water conservation, drought resistant crops, water harvesting and storage and micro irrigation. A more recent strategy is to test mechanisms for payment for environmental services to support sustainable NRM.

The project has evolved and integrated new issues in order to strengthen poverty-environment strategies. There has been a shift from agriculture and agricultural extension to socio-economic development (income generation, payment for environmental services) and strengthening of local authorities. The project also newly tackles environmental risks and risk analysis in the field of ***climate changes*** *and institutional weaknesses within the public sector (change of personal, political instability).*

Evidence has been gained that environmental degradation is linked to ***unclear tenure situations.*** *Institutional strengthening and policy dialogue should help address this issue.*

The objectives of the different phases have been the following:

- *Phase 1: introduce improved agricultural practices in hillsides in Nicaragua*
- *Phase 2: increase in involved institutions*
- *Phase 3: promote techniques in soil and water conservation and achieve regionalisation in Central America*
- *Phase 4: promote the introduction of paymen*

Several projects clearly integrated an objective of promotion of common property schemes as a strategy of NRM. Some projects like the ProBosques project in Guatemala shows evidence of the success of traditional common property schemes.

Box 5.8 Three examples of promotion of common property rights

The ProBosques, Guatemala *(implemented by Helvetas 1997-2004)*

The project is developed in the poorest areas of the country (Altiplano Occidental). It aims at resolving the conflicts of populations that do not have food security and do not have registered property rights for their land (in communal or private hands) and giving technical and financial capacity to municipalities for natural resource management.

There has been a shift from activities of drawing limits of protected areas and of certification of municipal property rights to establishing "mancomunidades" of municipalities and disseminating a model of decentralised management of natural resources and protected areas.

A key question arising from field interventions and projects is that of insurance. New conceptual frames are currently being examined to analyse risk management from an integrated perspective. Local communities, especially farmers, have to face a variety of risks. Social protection does not deal exclusively with the social sphere (health insurance, pension fund) but also with the productive sphere and livelihoods (to cover risks of market fluctuations, natural disasters). New partnerships are built in order to establish insurance schemes that can promote livelihoods and cover diversified risks.

Box 5.10 SAHA (Sahan'Asa Hampandrosoana ny Ambanivohitra) in Madagascar
(implemented by Intercooperation)

SAHA is a rural development programme with a focus on protection for social, economical and environmental risks of the rural

5.4.6 Summary of key interventions in poverty-environment

The issues of interventions are summarized in Table 5.1 in the categories of solutions to poverty dimensions set by the World Bank.

5.4 Research in poverty-environment

Investments in conservation are important for NRM and poverty alleviation and are mainly determined by social and cultural considerations.

Research shows that priority is often given to conservation investments like the maintenance of terraces and the agroforestry systems and biodiversity in seeds and not to productive investments like machines, fodder and pesticides.

Research in soil conservation shows that implementation of soil conservation measures depends to a great extent on technology and management alternatives and is independent from macroeconomic measures.

Low market integration is not equal to low production potential but means that a significant part of the resources are produced on-farm. It is the high re-use of natural resources that has a positive low cost effect on the sustainability of the system.

Scale-oriented production based on external technology can be substituted by increasing artisan skills, social competencies and knowledge of the actors allowing quality-oriented production to be undertaken.

5.4.2 Gender in poverty-environment research

It is worth highlighting the development of the tool-kit on "Tackling Gender Issues in Sustainable Land management"[113] by the CDE. The tool-kit can be used for policy and project development by people who are active in rural development. The instrument

artisan skills, social comp

Cross-sectional themes such as decentralisation, gender, people and protected areas are aiming to systematise relevant research projects and results from the global network, addressing specific concerns expressed in the titles of the working groups.

The poverty-environment link is not yet established as a cross-sectional topic/theme. However this does not mean that issues related to it are absent.

The NCCR platform on people and protected areas

The platform is organized as a crosscutting learning instrument. A first meeting was held in April 2004, in which the following main lessons were identified:

> people-oriented considerations of protected areas imply the need to tackle the economic situation of populations and their economic activity, e.g. gold-mining, fishing, producing charcoal, practicing agriculture, and especially their specific economic needs (training, technologies, market access, eventually viable economic alternatives)
>
> working with poor populations in or around protected areas means that work on aspects of informal and illegal activities must be included; the strategy on how to be an accepted partner in the negotiation with the population has to be thoroughly defined
>
> incentives are often needed to make development options economically attractive.

Another platform relevant for the poverty-environment links is the one working on "Decentralisation, social movements and natural resources". The platform aims to systematise the lessons learned and research results in highly diverse contexts, emphasising local governments, their relation with local institutional environments and NRM. The impacts on poverty reduction will be considered as well.

Selected poverty-environment issues

A screening of research posters was undertaken in order to highlight common work themes in

Table 5.2 Main cluster issues of research by the NCCR related to poverty-environment

Main thematic research clusters	Key issues for poverty-environment
Social learning and indigenous knowledge in syndrome mitigation	- Learning on local societies - Understanding of indigenous values and governance questions - Poverty mapping
Decentralisation and local livelihoods	- Interactions between global conservation and local interests - Participatory approaches for decentralisation - Globalization and the development of local markets and income at local level
Property rights	- Discussion of different property forms - Property rights and ethnic questions - The use of land mapping and cadastres
Empowerment and the role of NGOs	- Empowerment of local groups - The role of women in land management and market development - Indigenous identity - The role of NGOs as driving forces in global conservation issues
Vulnerability to conflicts and natural disasters	- Conflict mitigation - Social aspects of natural risks
Health	- Health and poverty - Sanitation aspects - Poverty-related diseases

Social learning and indigenous knowledge in syndrome mitigation

The research has a strong focus on soil and water conservation. The following aspect of the poverty-environment linkages is salient: the **learning on local societies**, their visions and livelihood strategies in order to improve syndrome mitigation strategies and development planning[115]. Several studies focus on the management of the Tunari National Park in Bolivia and show how a combination of **understanding of indigenous values and of governance questions** can contribute to ecosystem biodiversity protection[116].

An important point of this area of work is the **use of geographical information systems (GIS) and ICTs** as instruments in syndrome mitigation and environmental protection analysis. In one study, these instruments are directly used to better understand the geographical linkages between poverty and environment. The CDE's study on "Spatial poverty traps: aspects of rural poverty in Viet Nam" quotes that "a spatial perspective in poverty analysis provides a better understanding of the interrelations between poverty dimensions and biophysical and socio-economic aspects". In Viet Nam, research shows that poverty is primarily centred on geographically and structurally marginalized areas. Poverty rates are highest in the remote upland areas and poverty densities are highest in the highly populated delta and coastal lowland areas. There are important geographic variations in poverty-environment relationships.

Decentralisation and local livelihoods

Research by the Nepal group on "Nature conservation and local livelihoods in Nepal, Department of Geography, University of Zurich" explores the local interests of human welfare and the global interest in **sustainable nature conservation** and their linkages and trade-offs. The study proposes, among other things, insurance for farmers' losses. Another study by the University of Zurich on "Balancing Conservation and Livelihood Needs in Protected Areas, Nepal" aims at providing results, based on a survey in the Kangchenjunga Conservation Area, able to influence conservation projects in general. Initial results show

[115] *Research on "Syndrome mitigation as a societal learning process in Bolivia, the Swiss Alps and India" of the CDE; "Understanding Peasants for Sustainable Development Planning, in semi-arid contexts" of the CDE.*

[116] *(1) Ecosystem Biodiversity: The Vision of Andean Indigenous Farmers (CDE): a presentation and classification of the visions of Andean Indigenous farmers as a basis for intercultural dialogue and as part of a sustainable management strategy; (2) Transformation of values at the social interfaces of the National Park, the underlying diversity of competing discourses on territory and biodiversity among local and external actors; (3) Governance and management of biodiversity highlighting the potential of local community-based and municipal government and trying to avoid the inconsistent legal norms of local institutions.*

the need for participatory conservation, the importance of a long-term approach and the predominance of external factors such as national conflicts (e.g. the Maoist movement) over project interventions.

Empowerment and the role of NGOs

IP 8 provides interesting elements on aspects of security and empowerment as key elements of the poverty-environment nexus.

Empowerment is considered in the thematic issues dealing with **indigenous citizenship** and knowledge and the role of local institutions. Results from this area of research tend to find ways of overcoming the current regulations that do not sufficiently take into account indigenous knowledge.

The analysis of the role of NGOs both at local and global level in the frame of biodiversity governance is a very central question in order to assess **the influence of NGOs** on the implementation of the Convention on Biodiversity and specifically on the issues of access to genetic resources.

Vulnerability to conflicts and natural disasters

IP 7 contributes to clarifying poverty-environment linkages in the security dimension by identifying pathways to **conflict mitigation**. The IP is coordinated by Swisspeace. It deals with conflict over land and water, especially in frontier areas and for shared river waters. The aim is to develop conflict-sensitive research methods and conflict transformation methods such as dialogue workshops and negotiation round tables. For instance the research "Water and regional security in Northeastern Africa" aims at understanding the concept of regional security with a proposal to develop bilateral or multilateral conventions for transboundary resources, based on the positive experience of the Nile Basin Initiative.

Security is also the key focus in research on the social regulations of natural risks in IP 8. Research on "The Social Regulation of Urban Natural Risks in Bolivia" (IUED) attempts to understand the **social aspects of natural risks**, in particular floods and landslides in two Bolivian cities. It does not focus on specific poverty aspects, but results show that risk perception and risk management are socially differentiated and highlight the specific difficulties of people with less political power in drawing attention to their situation.

Other thematic issues

Environmental health and **urban** issues have not been considered in the clustering and screening.

5.5 The role of IUCN and proposals for further investigation and cooperation

Several experts from different research and implementation organizations consider IUCN as an organization well suited to being active at the policy level. IUCN could be the main advocate of indigenous

Annex 5A: Lessons from environmental management in artisanal mining in Ecuador, Peru and Bolivia

The goal of the projects (implemented by Projekt-Consult GmbH) is the mitigation of pollution through environmental management in small-scale mining.

Development of project implementation in Ecuador and Bolivia

Environmental projects in the field of small-scale mining started in Ecuador in 1993 with the support of SDC.

In the south of **Ecuador**, a regional environmental management plan has been developed for the area of Portovelo-Zaruma. In order to gain the confidence of the miners' communities, the project started with basic advice on mining techniques, good housekeeping and worker's safety measures. Some low-cost technologies for mitigating mercury and other chemicals like cyanide have been developed and applied in a comprehensive cleaner production approach. The project aimed at reducing the use of mercury and other chemicals and emissions into the air and water. The technological development has been based on mutual learning and on adaptation of traditional practices. The project has great significance because of the pollution of the southern trans-frontier river basin through mining activities. Some impacts on pollution reduction and health have been measured with the support of the Canadian International Development Agency (CIDA). The project results have been put in the light of the negotiation of a biodiversity protection project in the transboundary area between Ecuador and Peru. Nevertheless, mining activities are a small economic sector in Ecuador and this fact did not motivate the central authorities to prioritise the issue.

In 1994, the project started in **Bolivia**, where almost 200,000 families live from artisanal gold mining all over the country. The project has been successful in aTJ0.0dev7(. 0.0008 [illegible]

Set-up of the project in Peru

Based on the lessons from Ecuador and Bolivia, a new project started in **Peru** in 2001 with direct interventions in the regions of Puno and the Sur-Medio. The project GAMA (Gestion Ambiental en la Mineria Artesanal) was conceived as an environmental project with a broad holistic focus. From the beginning, lines of action for social development, health improvement and formalisation have been included. The project does not aim to implement basic infrastructures but to play a catalytic role for investment in basic infrastructure and community development. The frame has been favourable in that there are several Peruvian NGOs working on social aspects of mining communities (social development, basic education, alternatives to child labour).

The four components of the first phase (2000-2002) are the following[118]:

1. Legal component and work on land tenure and formalisation.
2. Technological component: technological transfer from Ecuador and Peru and new technological adaptations and working practices, especially to ease the workload of women and children.
3. Health component: work on environmental health aspects.
4. Social component: social community development.

For the sake of prioritisation, the environmental health component has not been developed. Instead, the legal component became very prominent. The actions were eased due to the fact that the MEM-Ministry of Energy and Mining had already addressed small-scale mining in creating a special unit for it. The project developed policy dialogue activities in order to achieve the adoption of a **Law of promotion and formalisation of artisanal mining** in 2003. The Law of formalisation was a basis to address land tenure schemes. It also helped to improve the image of "artisanal miners" in society and to consider them as an officially recognized profession. The Law is also a basis for conflict mitigation and mediation in situations of unclear property rights. The policy dialogue has been based on the work of the miners associations. Miners associations have been strengthened through the activities of the project.

The overall aim of Phase 2 is the empowerment of the artisanal mining sector through business management and environmental management. Based on the new Law of formalisation and the development of environmental protection activities, phase two (2003-2005) prioritises the three following lines of action:

1. Capacity building among the regional administrations that have been assigned responsibilities for mineral sector management by the decentralisation of the Peruvian Government.
2. Entrepreneurial development of miners' organizations and associations (including marketing and business management); this line of action also focuses on decentralisation and the strengthening of local institutions (especially the regional governments). The project offers comprehensive advice and consulting services comprising negotiation with clients and legal aspects of the formalisation.
3. Further technical development.

Main lessons of the projects

A clear overall objective of reducing pollution can be a good entry point for synergies between poverty alleviation and environmental protection.

The elaboration of regional environmental plans was preferred to a case-by-case approach.

The need to work on cadastres and the need for advice on legal/proprietary aspects is a starting point, due to unclear and controversial property conditions.

[118] *See the Annual Operational Plans of the GAMA project under www.gama-peru.org.*

Organizational strengthening is a basis for tackling conflict prevention and land use patterns.

Annex 5B: Main issues on the Swiss support in Africa in the frame of the Convention on Desertification

Main messages

There has not yet been any thematic clustering of activities to combat desertification.

In many cases, effective NRM and poverty reduction is achieved through the reinforcement of productive activities (diversification of production, access to markets).

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