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Biodiversity and Poverty: Ten Frequently Asked Questions – Ten Policy Implications

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Key highlights in sustainable agriculture and natural resource management

This paper is intended to stimulate discussion about the linkages between biodiversity, conservation and poverty reduction. What do we know, what do we not know, and what do we need to know? These ten questions provide a quick—hence simplistic—insight into a complicated and convoluted issue. We would therefore be very interested in your feedback. Are these the right questions? And the right answers? What else should we be asking—and trying to answer—to better understand (and enhance) the biodiversity-poverty relationship? Please send your ideas to pclg@iied.org. To find out more about this subject visit the Poverty and Conservation Learning Group website: www.povertyandconservation.info

The gatekeeper series of the Natural Resources Group at IIED is produced by the Food and Agriculture Team. The series aims to highlight key topics in the field of sustainable natural resource management. Each paper reviews a selected issue of contemporary importance and draws preliminary conclusions for development that are particularly relevant for policymakers, researchers and planners. References are provided to important sources and background material. The series is published three times a year and is supported by the Swedish International Development Cooperation Agency (Sida). The views expressed in this paper are those of the author(s), and do not necessarily represent those of the International Institute for Environment and Development (IIED), the Swedish International Development Cooperation Agency (Sida) or any of their partners.

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Executive Summary

Biodiversity conservation and poverty reduction are two of the most pressing global challenges of our time. But could the solutions to these challenges be mutually reinforcing? Parties to the Convention on Biological Diversity (CBD) have long called for improved integration of these two issues. However there is a diversity of opinion as to the nature and scale of biodiversity conservation-poverty reduction links, a vast number of claims and counter-claims, and often very patchy evidence on which to base assertions. This paper aims to cut through the confusion by providing answers to 10 frequently asked questions (FAQs) and highlighting the resulting policy implications.

QUESTION	ANSWER	POLICY IMPLICATIONS
1. What is biodiversity, and what is poverty?	There are many definitions and no agreement on the exact meaning of either term. Biodiversity relates to the diversity of life on earth – but is often used in a narrower context of species or natural resources. Poverty relates to absolute or relative levels of human deprivation – but is often equated solely with a lack of money.	Absolute clarity is needed on how different definitions of poverty and biodiversity, as well as conservation and others, are being used and interpreted in different contexts to ensure that complex issues are not confused and misrepresented.
2. In what ways is biodiversity relevant to poor people?	Biodiversity can be a route out of poverty for some people, but more commonly it plays a vital role as a social safety net preventing people falling into— or further into—poverty.	Greater policy attention to how biodiversity can help prevent poverty would be valuable. In many cases its contribution to poverty reduction has tended to be overstated but its major contribution to poverty prevention has been somewhat overlooked.
3. Which components and attributes of biodiversity are important to poor people?	Different components and attributes of biodiversity are important in different ways or different contexts. The relative abundance—or availability—of a comparatively limited set of natural resources is often the critical in the short term, but over the longer term a diverse range of resources is essential as a risk management strategy and for maintaining the flow of critical services.	International conservation efforts often target endangered species or threatened habitats. Ensuring that as much attention is given to species important for food and medicines and to 'intangible' biodiversity such as soil microbes, invertebrates, and plant genetic resources would increase the relevance of conservation to the poor.
4. Do the poor rely more on biodiversity than other people?	Yes. We all ultimately depend on biodiversity in its broadest sense, but poor people are more directly dependent, because of their limited ability to purchase alternatives (e.g., food, medicines, insurance).	Ensuring that conservation contributes to poverty alleviation means conserving biodiversity in the places where poor people live, ensuring that poor people are not denied access to the biodiversity-based goods and services on which they depend, and putting in place policies which conserve the components of biodiversity on which poor people's resilience is based.

QUESTION	ANSWER	POLICY IMPLICATIONS
5. Can biodiversity conservation actions benefit the poor?	They can, but only if designed with the poor in mind.	Including safeguards in the design of conservation policy and projects will ensure that poor people are not made worse off, or their rights infringed.
6. Can poor people reap the potential of biodiversity?	They can, but only if they have clear (and enforceable) access and/or ownership rights.	Pro-poor conservation requires good governance (or 'good enough' governance) at all levels – international, national and local – in order to address perverse political structures and processes. In particular: a) stronger local land and resource rights; b) improved local participation in, and transparency over, decision making; and c) stronger national and local resource management institutions.
7. How can poor people benefit more from biodiversity?	If rights, capacity and governance are favourable there are a number of opportunities at different scales – from scaling up successful local initiatives to taking advantage of new international policies and protocols such as those agreed by the United Nations Convention on Biological Diversity (CBD) and UN Framework Convention on Climate Change (UNFCCC).	Improving national and international policy frameworks, combined with conducive governance and institutional arrangements can help scale-up the benefits that poor people derive from biodiversity. At national level, the integration, or 'mainstreaming', of biodiversity-friendly objectives into different sectors is a key opportunity for integrating the maintenance of biodiversity with local economic development and poverty reduction.
8. Does poverty contribute to biodiversity loss?	At the global level the main driver of biodiversity loss is consumption and demand from developed countries. But in specific rural areas it can also be caused by the poorest, who are forced to prioritise short-term survival over longer-term sustainability.	Clarity is needed on the balance of global and local pressures driving biodiversity loss in any given context in order to design effective conservation interventions. It may be easier to use policy and legislative mechanisms to target those drivers fed by local poverty, but the impact of global consumption patterns cannot be overlooked.
9. Does lifting people out of poverty lead to biodiversity loss?	Not necessarily—it depends on whether biodiversity is appropriately valued and targeted in the process.	There are good examples of countries increasingly using biodiversity in a sustainable way to achieve development goals. These can be drawn upon to minimise the possible negative effects of development and increasing consumption on biodiversity
10. Can measures to conserve biodiversity and reduce poverty reduction go hand in hand?	Yes, although in many cases trade-offs are inevitable—the better these are understood the easier they will be to manage.	It is not possible to achieve 'win-win' from all situations. A more realistic aim is to 'win more' and 'lose less', being prepared to manage the trade-offs inherent in many conservation-poverty interventions.

Biodiversity and Poverty: Ten Frequently Asked Questions – Ten Policy Implications

Dilys Roe, David Thomas, Jessica Smith, Matt Walpole & Joanna Elliott

Every year the world spends around US$126 billion of official aid tackling global poverty.[1] It also spends between US$8 and 12 billion on addressing biodiversity loss. In neither case are these resources considered to be sufficient to solve these global challenges, a task only made harder by the effects of climate change and associated natural disasters. But what if the solutions to these challenges were mutually reinforcing? On practical grounds alone, around the world the richest areas of biodiversity often tend to overlap with some of the poorest human populations. Furthermore, evidence already suggests that healthy environments are often more resilient to climate change, whilst poor people are often more vulnerable (IPCC, 2007). If poverty alleviation and biodiversity conservation could help to meet each other's goals then the global efforts to achieve them, and to buffer the world against climate change, could be much more efficient and effective.

A high level meeting at the September 2010 UN General Assembly noted that *"preserving biodiversity is inseparable from the fight against poverty"* (UN General Assembly, 2010). But in practice this is a hotly debated topic. There is a diversity of opinion as to the nature and scale of biodiversity conservation-poverty reduction links and the most appropriate ways to enhance them. There are also many generalisations and assumptions about these links. As a result there are usually more questions than answers, and plenty of confusion.

This paper aims to cut through the confusion by providing answers to 10 frequently asked questions about the links between biodiversity conservation and poverty alleviation:

1. What is biodiversity, and what is poverty?
2. In what ways is biodiversity relevant to poor people?

1 Official data from the OECD (Organisation for Economic Co-operation and Development): www.oecd.org/document/0,3343,en_2649_34447_44981579_1_1_1_1,00.html, accessed 20 April 2011

3. Which components and attributes of biodiversity are most important to the poor?
4. Do the poor rely more on biodiversity than other people?
5. Can biodiversity conservation actions benefit the poor?
6. Can poor people reap the potential of biodiversity?
7. How can poor people benefit more from biodiversity?
8. Does poverty contribute to biodiversity loss?
9. Does lifting people out of poverty lead to the loss of biodiversity?
10. Can measures to conserve biodiversity and reduce poverty reduction go hand in hand?

While many of these questions do not have straightforward answers, our aim is to indicate where the weight of evidence is pointing. This paper draws predominantly on a number of international studies that have reviewed the evidence base, as well as our own experience and that of a number of experts who participated in a conference on this theme in 2010 (Roe, Walpole and Elliott, 2010).[2] Key references provide sources of further information to support our answers. More detailed insights into specific aspects of the conservation-poverty relationship are provided in the two other *Gatekeeper* papers published alongside this one (Elliott and Sumba, 2011; Thomas, 2011) which explore the role of conservation enterprise and of local organisations in linking conservation and poverty reduction.

Q1: What is biodiversity, and what is poverty?

A1: **Biodiversity** is a scientific term used to describe the variety of life, the sum total of the Earth's living resources. It is the variability among living organisms from all sources, including diversity within species, between species and of ecosystems (CBD, 1993). It is this variety, as well as the complex, dynamic relationships between its components, that makes biodiversity so important and so much more than simply a list of species. In the short term variety provides us with more options – different species that might be useful medicines or foods; different crop varieties that can adapt to different soil types or different climates. It also provides us with an effective risk management strategy – if one crop or genetic strain is wiped out by disease there are others to fill its place; if one pollinating insect species declines, others are available. It can also underpin the delivery of a number of other 'ecosystem services' upon which humankind depends. Soil fertility, breakdown and absorption of pollutants, water quality and supply are just some examples (discussed further in A3).

Biodiversity *conservation* can be taken to mean the protection, maintenance and/or restoration of living natural resources to ensure their survival over the long term. But it is variously defined depending on different values, objectives and world views. These vary from place to place, culture to culture and even individual to individual. The way in which biodiversity is conserved also varies hugely from place to place—from strict preservation to commercial consumptive use—with much debate about the relative merits and effectiveness of these different approaches.

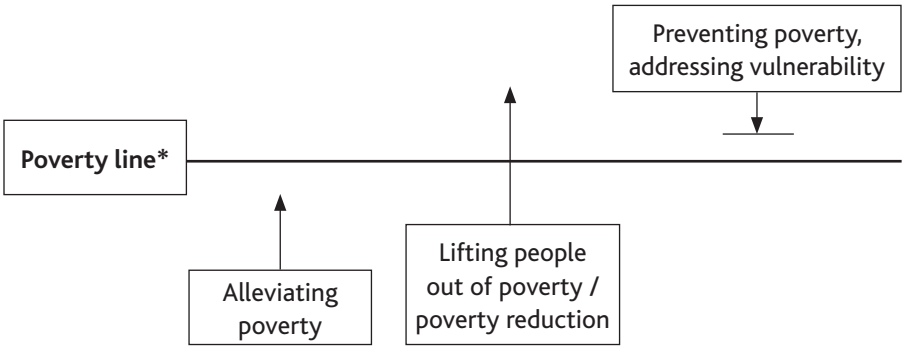
2 See http://povertyandconservation.info/en/meeting_7.php for details.

Poverty is another term with many different definitions (Box 1). The simplest usually relate to some level of material wealth – for example the Millennium Development Goal to *"eradicate extreme poverty"* refers to more than a billion people whose income is less than US $1 a day. However, poor people often do not define themselves in cash income terms – indeed the concept of cash is completely meaningless for some indigenous communities who live outside of the cash economy. In many cases, issues such as power and voice, opportunity and a healthy environment are valued more highly than money. It has therefore become increasingly recognised that poverty is multi-dimensional, and according to the Development Assistance Committee of the Organisation for Economic Co-operation and Development (OECD), "*The dimensions of poverty cover distinct aspects of human capabilities: economic (income, livelihoods, decent work), human (health, education), political (empowerment, rights, voice), socio-cultural (status, dignity) and protective (insecurity, risk, vulnerability)*" (OECD, 2001).

BOX 1: POVERTY ALLEVIATION, REDUCTION AND PREVENTION – WHAT'S THE DIFFERENCE?

'Poverty reduction' implies lifting people beyond a defined poverty line—transforming them from poor to non-poor. But often poverty is alleviated (i.e. some of the symptoms of poverty are addressed but people are not actually transformed from poor to non-poor) or it is prevented (i.e. people are prevented from falling into – or further into – poverty) rather than actually being reduced (Figure 1).

FIGURE 1: POVERTY REDUCTION, ALLEVIATION AND PREVENTION



Source: adapted from King and Palmer, 2007

* The poverty line, or poverty threshold, is the minimum level of income or resources deemed necessary to achieve an adequate standard of living in a given country. In practice, it is a useful but somewhat arbitrary measurement. As with definitions of poverty itself, the definitions of poverty lines can vary widely, and poverty lines are set differently by different countries. Thus significant effort has been invested to identify the most appropriate measurements for given objectives or circumstances.

Q2: In what ways is biodiversity relevant to poor people?

A2: Biodiversity can provide a route out of poverty for some people. More commonly, it plays a vital role as a social safety net preventing people falling into—or further into—poverty.

Billions of poor people living in rural areas of developing countries are directly dependent on biodiversity and ecosystem services for their day-to-day livelihoods and immediate survival. Biodiversity—or some elements of biodiversity—is often freely available and acts as a form of natural capital—particularly important for individuals and households with little financial or physical capital. Although the specific benefits vary from context to context and household to household, biodiversity can variously act as:

- An emergency lifeline: a measure of last resort, for example in times of failed harvests. The term 'famine food' accurately captures the role that some elements of biodiversity can play in this context.
- A social safety net: a 'natural health service' providing food, medicines, clean water and so on. It also acts as a natural insurance policy or risk management strategy, extending options when crops fail or when fisheries are depleted. The safety net role of biodiversity is of particular significance in the context of climate change, helping to build both ecological and social resilience.
- A stepping stone out of poverty: a source of income generation and jobs through trade, tourism, food production for example.

In other cases, however, dependence on biodiversity can be a poverty trap for poor people (Roe, 2010). While it is clear that the poor make extensive use of natural resources that are freely available to them, the *poorest of the poor* can lose access to, or be actively excluded from, the most valuable resources (such as charismatic wildlife, timber and other tradeable commodities) or lack the means to derive benefits from them – such as processing, marketing and transport. Where rights, access and relations of power over resources disadvantage the poor, this can trap the poorest in low value extractive uses, unable to make the transition out of this resource-dependent mode. A livelihood dependent on low-value biodiversity can thus reproduce or reinforce existing patterns of poverty.

Q3: Which components and attributes of biodiversity are important to poor people?

A3: Different components and attributes of biodiversity are important in different ways or different contexts.

In some cases it is the *abundance* or availability of specific components of biodiversity that is important – providing food, medicine, fuel, and tradeable goods that form the basis for income-earning opportunities. These may comprise a comparatively limited set of natural resources. Wildlife tourism in Africa, for example, directly depends on a remarkably few, mainly mammal, species (lion, leopard, elephant, rhino, buffalo) and large migrations or populations of single species. However, we should remember that these

species do not exist in a vacuum – their survival depends on the continued presence of the ecological complexes they inhabit, and these complexes themselves depend on a diverse, resilient resource base. Nevertheless, the current body of evidence suggests that, in terms of *direct uses* of biodiversity, the poor benefit from the existence of, and access to, biological resources rather than *biodiversity* in its strict sense (Roe, 2010).

There are, however, clear cases where it is *diversity* itself that is important (Box 2). A diverse *range* of resources provides poor people with a risk management strategy—extending their options when crops fail or when fisheries are depleted. Meanwhile, diversity *within* the species on which poor people rely (both wild and cultivated) enhances their resilience to stresses such as climate change. For example traditional varieties of agricultural crops have a higher degree of genetic diversity than modern varieties (as well as requiring fewer inputs of labour and chemicals). This high genetic diversity can result in higher, and more consistent, yields (especially on the marginal land typically occupied by the poor; Roe, 2010).

BOX 2. A DIVERSITY OF RESOURCES IS IMPORTANT ON A DAY-TO-DAY BASIS

Research by IUCN (the International Union for the Conservation of Nature) found that villagers in northeast Lao relied on over 56 types of medicinal plants, 40 species of trees, 34 different kinds of wild vegetables, 15 different bamboos as well as a variety of mushrooms, wild fruits, grasses, palms and vines to meet their everyday needs.

Source: Emerton, 2005.

In other cases it is biodiversity's (a) 'regulating services', such as flood and disease control; (b) 'cultural services' such as spiritual and recreational benefits; and (c) 'supporting services' like nutrient cycling that are important. And largely overlooked is the role of the many millions of microbes and invertebrate species, representing perhaps 95% of total species and genetic biodiversity, critically underpinning the services that biodiversity provides, and the linkages between them. It is microbes and invertebrates (e.g. pollinating insects like bees), as well as plants, that underpin agriculture, forestry, and fisheries—delivering productive ecosystem goods and services in the sectors relied on by the poor. Loss of biodiversity can affect these support systems and the interactions among them.

Q4: Do the poor rely more on biodiversity than other people?

A4: We all ultimately depend on biodiversity in its broadest sense, but poor people are more directly dependent, because of their limited ability to purchase alternatives (e.g., food, medicines, insurance policies).

Evidence from The Economics of Ecosystems and Biodiversity (TEEB) initiative[3] shows that if the economic value of biodiversity is calculated, its relative contribution to poor people—referred to as the 'GDP of the Poor'—is far greater than its contribution to national economies in general.

3 A major international initiative to draw attention to the global economic benefits of biodiversity, to highlight the growing costs of biodiversity loss and ecosystem degradation; see www.teebweb.org.

In developing countries the majority of the poor (75%) live in rural areas where their dependence on biodiversity is even more pronounced because of their physical location and the nature of their livelihood activities: small scale farming, hunting, collecting and trading in forest products and so on. Drylands, for example, are home to some of the poorest people on the planet; the average infant mortality rate (one of the Millennium Development Goal—MDG—indicators) in dryland developing countries is at least 23% greater than in non-dryland countries. The two billion dryland inhabitants—at least one million of whom are considered poor or severely poor—are directly affected by the quality and maintenance of biodiversity and ecosystem services, and face high levels of climatic risk (UNDP/UNCCD, 2010). Similarly, the world's 300 million or so indigenous people are amongst the most cash poor. Almost one million depend almost entirely on forests for food, shelter, clothing, fresh water, medicines and other basic necessities.

Within these broad categories of 'poor people' there is mixed evidence as to whether it is the *relatively* richer or poorer groups that are the most dependent on biodiversity. In terms of direct, consumptive or commercial use of biodiversity, the poorest of the poor tend to rely most on products that have limited commercial value—usually because they are often denied access by more powerful groups to more commercially valuable resources. However, it seems that the poor have a higher dependence on biodiversity as a *risk* management strategy or *insurance* mechanism. For example, levels of conservation of agricultural biodiversity and crop genetic resources tend to diminish as incomes and/or connectedness to markets increase (Roe, 2010).

The **urban poor** are less directly dependent on biodiversity but are still reliant on ecosystem services—particularly waste processing and detoxification, regulation of water and air quality, as well as those that support small-scale agricultural production.

Q5: Can biodiversity conservation actions benefit the poor?

A5: They can, but only if designed with the poor in mind.

The debate about whether or not *biodiversity* benefits the poor is often confused with whether biodiversity *conservation* benefits the poor. The two are not the same. Because many of the rural poor depend directly on biodiversity for their day-to-day livelihoods, it would seem logical that protecting biodiversity can ensure it continues to support livelihoods. However, any conservation intervention may make poor people worse off if it is not carefully designed. For example, unless local land and resource rights are strong and clear, strict enforcement of protected areas and bans on resource use may actually increase local incidence of poverty through the loss of resource access. If conservation is to take account of the needs of the poor then there must be appropriate safeguards to ensure that poor people are not made worse off, or their rights infringed.

Even where conservation actions are designed to benefit the poor, there may still be winners and losers among the poor—for example men may be better able to take advantage of some opportunities than women; certain castes or other social groups may take precedence over others; some activities, like tourism, may be adversely affected by others, like hunting; the least-well connected may be overlooked for job opportunities.

Figure 2 provides examples of different approaches to conservation that have greater or lesser poverty impacts. These are not necessarily mutually exclusive.

FIGURE 2: A TYPOLOGY OF PRO-POOR CONSERVATION

Overarching objective moves from conservation to poverty reduction

Approach	Description	Examples
Poverty reduction as a tool for conservation	Recognition that poverty is a constraint to conservation and needs to be addressed in order to deliver conservation objectives	Alternative income generating projects; many integrated conservation and development projects; many community-based conservation approaches
Conservation that 'does no harm' to poor people	Recognition that conservation can have negative impacts on the poor and that compensation is required where these occur and/or to mitigate their effects	Social impact assessments prior to protected area designations; compensation for wildlife damage; provision of *locally acceptable* alternatives or compensation when access to resources lost or reduced
Conservation that generates benefits for poor people	Conservation still seen as the overall objective but designed so that benefits for poor people are generated	Revenue sharing schemes around protected areas; employment of local people in conservation jobs; community conserved areas
Conservation as a tool for poverty reduction	Poverty reduction and social justice issues are the overall objectives. Conservation is seen as a tool to deliver these objectives	Conservation of medicinal plants for healthcare, wild species as food supplies, sacred groves; pro-poor wildlife tourism

Source: Updated from Roe and Elliott (2006)

Furthermore, a focus on cash benefits can obscure the real poverty-reduction potential of conservation. It has been widely documented that communities' reasons vary for engaging in conservation from economic to environmental, political, social and cultural. This is consistent with the idea that poverty does not simply mean low income, but also a deprivation of the many requirements for meeting basic human needs. Participation in conservation can also help promote gender equality—for example if women secure employment in tourism enterprises, participate in community conservation committees

and so on, they gain access to cash and an increase of status in the community. This knowledge should help design more appropriate community incentives for conservation partnerships that go beyond cash, and lead to more effective ways of measuring the real human impacts of conservation actions.

Q6: Can poor people reap the potential benefits of biodiversity?

A6: They can, but only if they have clear (and enforceable) access and/or ownership rights.

Although biodiversity has been described as *"the wealth of the poor"* (WRI, 2005), power imbalances, corruption and inequality generally mean that poor people fail to capture its benefits. In particular, weak land rights so often enable the powerful to ride roughshod over the poor.

Policy and legal frameworks—as well as powerful, vested interests—govern how biodiversity is used and by whom, and often these do little for poor people.

In some cases inappropriate policies or weakly enforced legislation allow the benefits of biodiversity to be 'captured' by those far away from the origin of the biodiversity resource, to the detriment of the poor who are stewards of the resource. For example, plant and animal genetic resources might be exploited by international agriculture and pharmaceuticals industries or other 'bioprospectors'. In these cases the company shareholders reap the benefits with little of the wealth flowing back to the originating countries or the communities whose traditional knowledge has conserved and maintained those valuable resources for generations.

In other cases, the benefits from valuable resources, such as timber and wildlife species with tourism potential, are captured by *national* governments with little trickle down to the local level. Even when there is a conducive policy which should provide for local benefits, central governments can be reluctant to release control over the most valuable resources (Box 3).

BOX 3: TOURISM BENEFITS CAPTURED BY NATIONAL GOVERNMENT DESPITE A WILDLIFE POLICY FAVOURABLE TO COMMUNITIES

Tanzania's 1998 Wildlife Policy calls for devolution of wildlife management to the community through collaborative natural resource management. This is implemented through the creation of Wildlife Management Areas (WMAs) on village lands. However, because of the value of wildlife resources for tourism and hunting the government has taken control over revenues generated by tourism ventures on community lands. This reduces the potential revenues communities are able to capture from these enterprises, and therefore reduces local incentives for conservation.

Source: Nelson *et al.*, 2007.

Addressing governance failures at the international and national level to ensure benefits reach the local level is not the end of the problem. Despite rights over biodiversity resources being devolved to the local level, often the richer members of the community tend to take advantage of them—a phenomenon known as 'elite capture' (Q4). Local communities may lack the capacity to effectively manage and benefit from these rights.

To address these governance challenges it is particularly important to: a) clarify and strengthen local land and resource rights; b) improve local participation in, and transparency over, decision making; and c) strengthen national and local resource management institutions.

Q7: How can poor people benefit more from biodiversity?

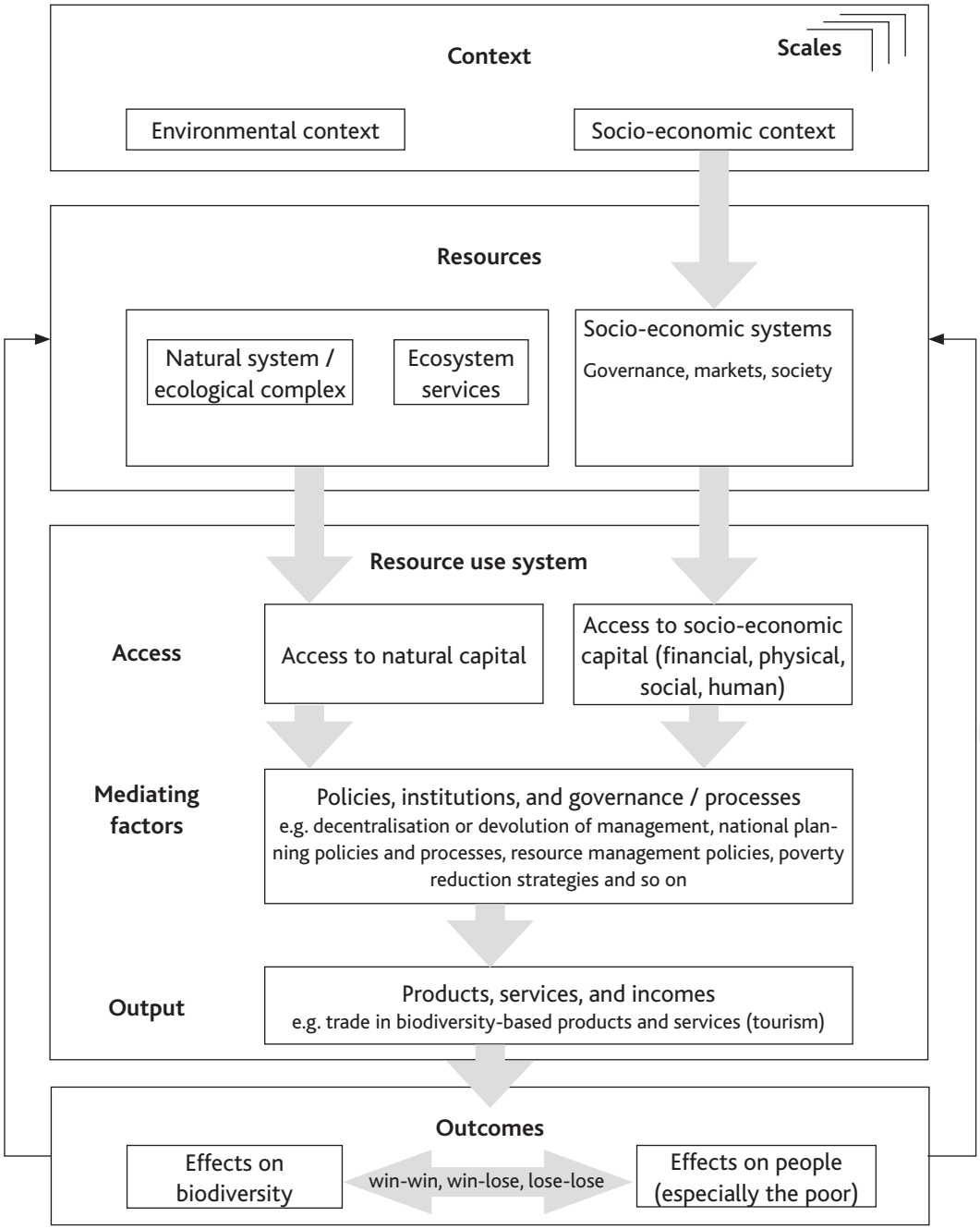
A7. If rights, capacity and governance are favourable, there are a number of opportunities at different scales—from scaling up successful local initiatives to taking advantage of new international policies and protocols such as those agreed by the CBD and UNFCCC.

At the local level, there are many examples of small-scale initiatives such as eco-tourism and other community-based enterprises that have been very successful and which—under the right conditions—could be replicated elsewhere, or scaled up (see Elliott and Sumba, 2011). The commercialisation of biodiversity-based products, or BioTrade,[4] is increasingly recognised as one of a number of strategies for improving livelihoods opportunities, especially in rural areas where opportunities can otherwise be limited.

At the national level, policies, institutions and processes are amongst the most important mediating factors in the biodiversity-poverty relationship (Figure 3), not least because they are keys for enabling economic development. Since most of the world's biodiversity occurs outside protected areas in lands dedicated to various economic production activities—including agriculture, forestry, fisheries, mining and tourism—the integration, or 'mainstreaming', of biodiversity-friendly objectives into these production sectors constitutes an important opportunity for reducing biodiversity loss while maintaining local economic development. But as the OECD (2008) points out, better management of biodiversity will not necessarily lead to poverty reduction: "*what is needed are conducive political, institutional and governance frameworks.*" These mediating factors at different levels must be well-understood and addressed for interventions to reach their intended objectives.

4 See www.biotrade.org.

FIGURE 3: SOCIAL AND ENVIRONMENTAL FACTORS ALLOWING THE POOR TO BENEFIT FROM BIODIVERSITY



Source: Adapted from Tekelenburg *et al.*, 2009.

There are also significant opportunities to be unlocked through various international frameworks that a re being implemented in individual countries via national legislation (Box 4).

BOX 4. RECENT INTERNATIONAL MOVES FOR ENABLING THE POOR TO BENEFIT FROM BIODIVERSITY

The Nagoya Protocol on Access and Benefit Sharing **is an international agreement for sharing the benefits from the use of genetic resources fairly to ensure sustainable use. This will include creating appropriate access to genetic resources, the transfer of relevant technologies and funding, while taking into account all rights over those resources and technologies. It was adopted by the Conference of the Parties to the Convention on Biological Diversity at its 10th meeting on 29 October 2010 in Nagoya, Japan. See www.cbd.int/abs.**

Deforestation and forest degradation, through agricultural expansion, conversion to pastureland, infrastructure development, destructive logging, fires etc., account for nearly 20% of global greenhouse gas emissions. The international instrument known as *REDD*—short for *Reducing Emissions from Deforestation and forest Degradation*—is being promoted by the UN Framework Convention on Climate Change (UNFCCC) to reward developing countries for forest conservation in order to prevent these emissions. Depending on how the payment system is structured there is potential for forest dwellers to benefit from their conservation efforts—so long as the governance and institutional challenges indentified in Q6 are addressed. See the Center for International Forestry Research (CIFOR) website: www.forestsclimatechange.org/

Q8: Does poverty contribute to biodiversity loss?

A8: At the global level the main driver of biodiversity loss is consumption and demand from developed countries. But in specific rural areas it can also be caused by the poorest who are forced to prioritise short-term survival over longer-term sustainability.

Globally, the world's richest 20% of people account for 80-90% of total private consumption expenditures, while the poorest 20% account for a minuscule 1.3% (UNDP/UNCCD 2010). Per capita use of resources is far higher in the United States, Europe and Australia than it is in poor, biodiversity-rich countries. It is this consumption that is driving the conversion of natural habitat to provide the world with cheap tropical timber, cattle-feed, and edible oils—often with little if any benefit accruing to local poor people in the process. The growing demand for soya, beef, timber and palm oil is accelerating the loss of tropical forests, for example.

However, extreme poverty can force the poorest to damage biodiversity when their immediate survival depends on it. At the local scale this can result in a vicious cycle of dependency and degradation, particularly in areas of high population density and in places experiencing climatic stress. Poor people's reliance on natural resources, and the lack of alternatives to which to turn in times of stress, can lead to levels of use which degrade the very assets on which their survival depends. Improved local governance and control over resources may help address such situations, but ultimately solutions lie in either developing technologies which can enhance productivity (Box 5) or providing alternatives (employment, substitute goods and services) which help take the pressure off natural systems.

BOX 5: NEW TECHNOLOGIES CAN HELP MEET BIODIVERSITY AND POVERTY OBJECTIVES

Collaboration between Nature Uganda and BirdLife International has improved the lives of poor fishing communities on Lake Victoria's Musambwa Islands, whilst conserving the globally important breeding colony of Grey-headed Gull (*Larus cirrocephalus*). Over-harvesting of eggs was threatening the gull population, and the limited availability of wood for smoking fish to preserve them whilst awaiting transport to the mainland was creating both environmental and economic difficulties. The project helped the fishermen with new technology (refrigeration and ice boxes) which has reduced the need for fish smoking and hence for fuelwood. Institutional strengthening helped to create a local organisation that was able to negotiate and enforce rules on egg harvesting. As a result of these and other measures, fishermen's net incomes have increased, vegetation is regenerating, and the number of gulls breeding on the island has increased three-fold.

Source: Thomas, 2011

Q9: Does lifting people out of poverty lead to biodiversity loss?

A9: Not necessarily—it depends on whether biodiversity is appropriately valued and targeted in the process.

Neither the *process* of poverty reduction (development) nor the *outcome* (greater well-being, often through more wealth) need necessarily lead to biodiversity loss. Whether they do or not depends on the choices made—in policy, planning, and at the individual level. Some development strategies—such as the massive clearance of tropical forests for oil palm plantations—are at the expense of some of the richest biodiversity in the world. The infrastructure often associated with development, such as roads, provides important access to markets and services for poor people, allowing them to add value to local resources. However, they can—and do—also open up natural areas and their resources for settlement and exploitation.

There are, however, promising examples of national development strategies that are founded on the conservation and sustainable use of biodiversity. For example, biodiversity is considered a comparative advantage in national development and economic growth by Costa Rica, Namibia (Box 6), Bhutan, Peru and Viet Nam, among others. Tourism, wildlife and protected areas, indigenous natural products, various forms of agriculture and fisheries, sustainable forestry, and other approaches are increasingly used in mainstream development strategies. In such countries, biodiversity has increased alongside economic growth and poverty reduction, demonstrating that these are not necessarily inversely related.

Beyond the national context and within specific localities, the impacts of poverty reduction on biodiversity depend on the choices people make when they are less poor. There is evidence, however, that where local institutions for natural resources management are strong, where people have rights over their resources, and where biodiversity has value (economic, social, cultural) people will often seek to ensure that biodiversity is conserved over the long term.

BOX 6: WILDLIFE KEY TO ACHIEVING NAMIBIA'S THIRD NATIONAL DEVELOPMENT PLAN
Namibia's 3rd National Development Plan (NDP3) rests on 8 *"key result areas"* including one on natural resources and environmental sustainability. Wildlife-based tourism is seen as fundamental to achieving the plan, which describes it as *"a viable vehicle for poverty reduction, rural development, bio-diversity protection and overall economic growth"*. **Source: National Planning Commission, 2008.**

Q10: Can measures to conserve biodiversity and reduce poverty reduction go hand in hand?

A10: Yes, although in many cases trade-offs are inevitable—the better these are understood the easier they will be to manage.

At the local level it is clear that the relationship between biodiversity conservation and poverty reduction is played out differently in different contexts and different localities. It is naïve to expect win-win solutions everywhere. In every context and each location there are likely to be trade-offs—both between conservation and poverty reduction goals and within each of those goals. These may be temporal (e.g. benefits now, costs later); spatial (benefits here, costs there) or beneficiary-specific (some people, species or ecosystem services win; others lose). How significant these trade-offs are depends largely on how aligned or misaligned the interests of conservation and of poor people really are. Yet ensuring a less antagonistic and more supportive relationship between the two is possible. It is often the way in which conservation is carried out, as much as the components of biodiversity that are targeted, that can determine the effect on poverty (Q5). For example, protected areas are highlighted time and again as a potential threat to poor people, but there are many different types of often under-recognised protected areas, including community conserved areas, biosphere reserves and sustainable development reserves, that do not exclude people and which provide benefits for poor communities.

The nature of trade-offs will also be affected by the scale at which conservation interventions occur. Adopting a landscape-level approach to conservation enables trade-offs to be more effectively managed, balancing strictly protected areas at one end of a continuum (in which poor people are compensated for any loss of access to resources) with sustainably-managed production areas at the other (recognising that much of the world's biodiversity occurs outside of protected areas).

Equally as important is collaboration amongst the different organisations that have either conservation or poverty reduction at the core of their mission. Given the scarce financial resources for both biodiversity conservation and poverty reduction, working together and sharing responsibility for both agendas are likely to be the most effective ways to balance trade-offs and ensure different voices are heard and different priorities met.

Policy implications

The importance of sustaining the environment for development has been recognised for decades, but only relatively recently have the more specific links between biodiversity, conservation and poverty reduction been explored and debated in policy circles. The Con-

vention on Biological Diversity (CBD)—and its 193 signatory countries—have been at the forefront. The Preamble recognises that *"economic and social development and poverty eradication are the first and overriding priorities of developing countries"* (CBD, 1993). In 2002, ten years after its inception, parties to the CBD agreed *"to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on earth"* (CBD, 2010). This target was integrated into the MDGs in 2006. Poverty continues to be central to the new CBD Strategic Plan for the period 2011-2020. Its mission is *"to take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human well-being, and poverty eradication…."* (CBD, 2010).

However, not only are many development choices (e.g. maximising food production) often incompatible with biodiversity conservation, on a purely biophysical level, but also current economic models mean that the environment is not fully valued in decision-making (Millennium Ecosystem Assessment, 2005; Tekelenburg *et al.*, 2009). Many strategies for addressing poverty goals are thus likely to accelerate biodiversity loss unless the values of biodiversity and ecosystem services are factored in.

Integrating biodiversity in all such choices ('mainstreaming') requires not just better dialogue between environment and development communities at the national and international level, and better integration of agendas, but also vertical co-ordination and coherence between global and regional agreements, national policies and local implementation. The approach being taken by the UNDP-UNEP Poverty Environment Initiative[5] is an example of this beginning to happen. However, both biodiversity conservation and poverty reduction are highly political issues, and it is important to bear in mind the political context when thinking about the conditions for success, or when processes for achieving integration and trade-offs are being promoted and used.

Ten conclusions for policy makers

Our 10 questions highlight 10 conclusions and policy implications—relevant at all levels and to a variety of different actors:

1. Absolute clarity is needed in how different definitions of poverty, biodiversity and conservation are being used and interpreted in different contexts to ensure that complex issues are not confused and misrepresented.
2. Greater policy attention to how biodiversity can help prevent poverty would be valuable. In many cases its contribution to poverty *reduction* has tended to be overstated but its major contribution to poverty *prevention* has been somewhat overlooked.
3. Ensuring that conservation efforts give as much attention to 'intangible' biodiversity (e.g., 'production' biodiversity such as microbes, invertebrates and also plant genetic resources) as to endangered species—which are most often prioritised by conservation interventions—would increase their relevance to the poor.

5 See www.unpei.org.

4. Ensuring conservation contributes to poverty alleviation means conserving biodiversity in the places where poor people live, ensuring that poor people are not denied access to the biodiversity-based goods and services on which they depend, and putting in place policies which conserve the components of biodiversity on which poor people's resilience is based.
5. Including safeguards in the design of conservation policy and projects will ensure that poor people are not made worse off, or their rights infringed.
6. Pro-poor conservation requires good governance (or 'good enough' governance) at all levels—international, national and local—in order to address perverse political structures and processes. In particular it requires: a) stronger local land and resource rights; b) improved local participation in, and transparency over, decision making; and c) stronger national and local resource management institutions.
7. Improving national and international policy frameworks, combined with conducive governance and institutional arrangements, can help scale up the benefits that poor people derive from biodiversity. At national level, the integration, or 'mainstreaming', of biodiversity-friendly objectives into different sectors constitutes a key opportunity for integrating the maintenance of biodiversity with local economic development and poverty reduction.
8. Clarity is needed over the balance of global and local pressures driving biodiversity loss in any given context in order to design effective conservation interventions. It may be easier to use policy and legislative mechanisms to target those drivers fed by local poverty, but the impact of global consumption patterns cannot be overlooked.
9. There are good examples of countries increasingly using biodiversity in a sustainable way to achieve development goals. These can be drawn upon to minimise the possible negative effects of development and increasing consumption on biodiversity.
10. It is not possible to achieve 'win-win' from all situations. A more realistic aim is to 'win more' and 'lose less', being prepared to manage the trade-offs inherent in many conservation-poverty interventions.

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