Shaping a sustainable future

The IUCN Programme 2009-2012

To be adopted at

The World Conservation Congress

Barcelona, Spain, 5-14 October 2008

This document is the draft IUCN Programme 2009-2012 to be adopted at the World Conservation Congress, Barcelona, Spain, 5-14 October 2008.

This version of the IUCN Programme 2009-2012 has been prepared for consultation by the IUCN constituency.

Comments and amendments can be sent, until the 30 September 2007 to programme@iucn.org

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Executive summary

How can a 60-year old conservation organisation best contribute to modern environmental issues such as climate change, energy, poverty, world markets and security?

The World Conservation Union (IUCN) is first and foremost a conservation organisation that cares deeply about the diversity of life and whose fundamental expertise is on species habitats and the management of ecosystems. But through our work in all parts of the world we have also learned that conservation is essential to progress on many other issues.

We have learned that sustainably managed natural resources support peaceful communities. We know that we must deal with climate change if we are to safeguard biodiversity and the lives of the people who depend on it, and we also recognise the potential of biodiversity to help mitigate global warming effects or adapt to it. We have demonstrated that we can help reduce poverty by ensuring that nature continues to provide the poor with much-needed resources while sustainably managed resources can be a key to growth and development, beyond poverty reduction, indeed for the benefit of humanity regardless of economic status.

The IUCN Programme 2009-2012 – Shaping a Sustainable Future - is based on solid evidence and an assessment of political realities: we must work on the link between environmental health and human wellbeing and contribute an environmental perspective to the achievement of the Millennium Development Goals, the Plan of Implementation of the World Summit on Sustainable Development, and the 2010 target to reduce the rate of loss of biodiversity. All these have been approved by governments but none will succeed unless they are based on sound environmental principles.

Our strategy for engagement and action is to provide the required knowledge and tools to empower stakeholders to use and apply them, and thereby to improve the policies and laws, instruments and institutions that govern natural resources and their use.

Our strategy of change is based on the principle that governments agree the broad priorities for action through international negotiations (often involving multilateral and environmental agreements). IUCN can influence these priorities through contributing to these negotiations. The agreed broad priorities must then be adapted to realities at national and local levels, requiring that national and local actors (often IUCN members) have the means for doing so – capacity, knowledge, appropriate technology, and public support. Because conditions are constantly changing, conservation actions need to be monitored, with the results leading to more effective subsequent action (a process often called “adaptive management”).

Building on these principles and strategy, and in front of the continuing lack of progress toward sustainability and the ever-growing threat to the environmental health, the IUCN Programme simultaneously strengthens the Union’s heartland work on conserving the diversity of life, while developing more effective and strategic interventions linked to the global agenda for sustainable development in the areas of climate change, energy, poverty and security, and economy and markets. The five thematic priority areas of the IUCN Programme 2009-2012 are not equal: thematic priority area 1 (conserving the diversity of life) underpins areas 2 to 5 and it is the interaction between environmental policy and practice with the 4 other areas the IUCN Programme 2009-2012 focuses on:

- **Conserving the diversity of life**
  Ensuring sustainable and equitable management of biodiversity from local to global levels
- **Changing the climate forecast**
  Integrating biodiversity considerations and opportunities into climate change policy and practice
- **Naturally energizing the future**
  Implementing ecologically sustainable, equitable and efficient energy systems

- **Managing ecosystems for human well-being**
  Improving livelihoods, reducing poverty and vulnerability, and enhancing environmental and human security through sustainable ecosystem management
- **Greening the world economy**
  Integrating ecosystem conservation values in economic policy, finance and markets

The IUCN Programme 2009-2012 provides the framework to plan, implement, monitor, and evaluate actions with and on behalf of Members. It is a results-based, demand driven plan of action that tackles global issues, incorporates national level priorities, and provides a structure for detailed work plans for the Commissions and the component programmes of IUCN. The IUCN Programme 2009-2012 provides greater focus for the Union to take action and engage with other sectors and stakeholders and deliver concrete results in our pursuit of a just world that values and conserves nature.

Introduction

In 1948, as the world was awakening from a long night of war and horror and designing a new international order for peace and security, a small group of committed conservationists had the brilliant vision that 18 governments, 7 international organisations and 107 national organisations would be much stronger and achieve much more if they combined their efforts for the conservation of nature. Before the signing of the Fontainebleau Declaration that established IUCN, on 4 October 1948, the famous writer, Aldous Huxley was writing to his brother, Julian, then Director General of UNESCO and one of the founders of IUCN:

> "*Meanwhile I come to feel more and more that no system of morals is adequate which does not include within the sphere of moral relationships, not only other human beings, but animals, plants and even things. We have done quite monstrously badly by the earth we live in, and now the earth we live in, with its soil eroded, its forests ravaged, its rivers polluted, its mineral resources reduced, is doing so badly by us that, unless we stop our insane fiddling at power politics and use all available knowledge, intelligence and good will to repair the harm we have done, the whole of mankind will be starving in a dust bowl within a century or two. People still seem to believe that there is poverty in the midst of plenty, when in fact there is only poverty in the midst of growing poverty – and all through our own fault, through not treating nature morally. […]*
>
> *If we don't do something about it pretty soon, we shall find that, even if we escape atomic warfare, we shall destroy our civilization by destroying the cosmic capital on which we live. Our relation to earth is not that of mutually beneficial symbiosis; we have become the kind of parasite that kill its host, even at the risk of killing itself."*

Today, the World Conservation Union unites more than 1000 States, government agencies, international and national non-governmental organisations working together towards sustainability. The spirit that inspired its founders to sign the Fontainebleau Declaration has kept all its relevance: environmental health underpins human wellbeing. IUCN's unique structure enables democratic and open dialogues between civil society and governments; the steady growth of its knowledge and expertise, and the pooling of knowledge and resources in integrated approaches to conservation for sustainable development is having a positive impact throughout the world.

This Programme is the result of extensive consultations with and within IUCN members, Commissions, donors and other partners. It shows the practical ways in which the Union of 84 governments, 108 government agencies, 831 international and national organisations and 33 affiliates plans to shape sustainable solutions for the future.

This Programme describes how IUCN's value added and competencies will be employed in practice. It specifies what we will deliver for conservation and sustainable development on five thematic priorities from 2009 to 2012.

[text box]

Strength in numbers and diversity
The Union's strength arises from the number, diversity, expertise and actions of its members. Presently, IUCN has 1,056 members comprising 84 States, 108 Government Agencies, 831 National and International NGOs and 33 Affiliates. These members are present in 143 countries.

IUCN's Commissions

- ➢ Commission on Ecosystem Management
- ➢ Commission on Education and Communication
- ➢ Commission on Environmental, Economic and Social Policy
- ➢ Commission on Environmental Law
- ➢ Species Survival Commission
- ➢ World Commission on Protected Areas

[end text box]

Sustainability

Sustainable development has been defined as balancing the fulfilment of human needs with the protection of the natural environment so that these needs can be met not only in the present, but indefinitely in the future. The term was first used in the World Conservation Strategy, produced by IUCN, WWF and UNEP in 1980, but the 1987 report of the Brundtland Commission popularized the term with the often-quoted definition of sustainable development: "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Societies throughout the world should adopt sustainable development as an overall societal goal. However, the conventional three-pillar model of sustainable development - environmental sustainability, economic sustainability and social sustainability - fails to acknowledge that environmental constraints within which our economies and societies must operate and it also implies economic well-being can be traded off against social and environmental well-being. A stronger model of sustainability requires maintaining society, the economy and the environment in good conditions simultaneously (Figure 5).

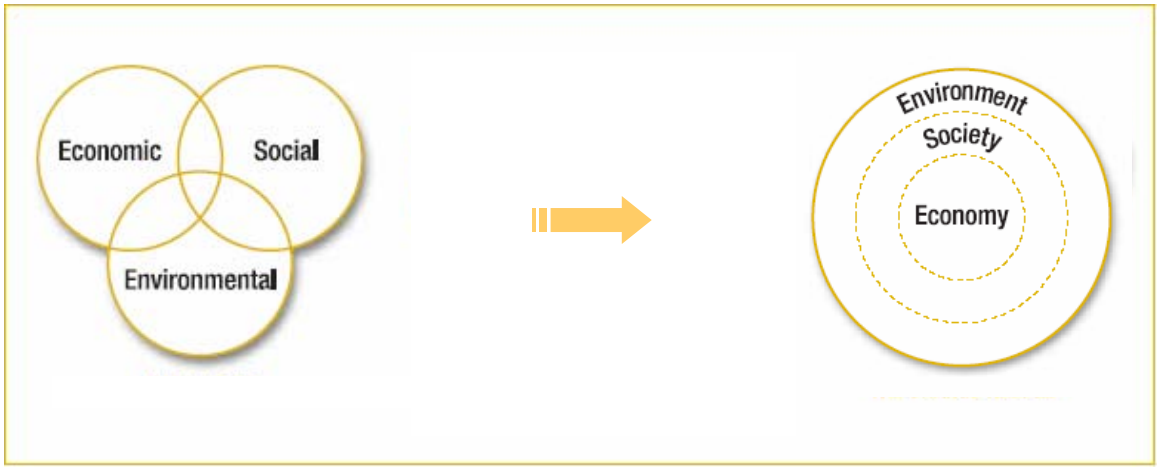


Figure 1: Shifting the sustainability model

The continuing lack of progress toward sustainability and the ever-growing threat to environmental health has prompted IUCN to develop a programme that will simultaneously **strengthen the Union's heartland work on conserving the diversity of life, while developing more effective and strategic interventions linked to the global agenda for sustainable development.**

IUCN's 2009-2102 Programme is based on the theory that IUCN can contribute effectively to the achievement of global policy goals and targets included in the Millennium Development Goals, the Johannesburg Action Plan for Sustainable Development and the 2010 targets. Our core business, conserving the diversity of life, will provide the base for IUCN to influence a limited set of thematic priorities: climate change, energy, poverty and security, and markets and economy – which are fundamental to sustainable development.

The world of 2007 through an environmental lens

Introduction

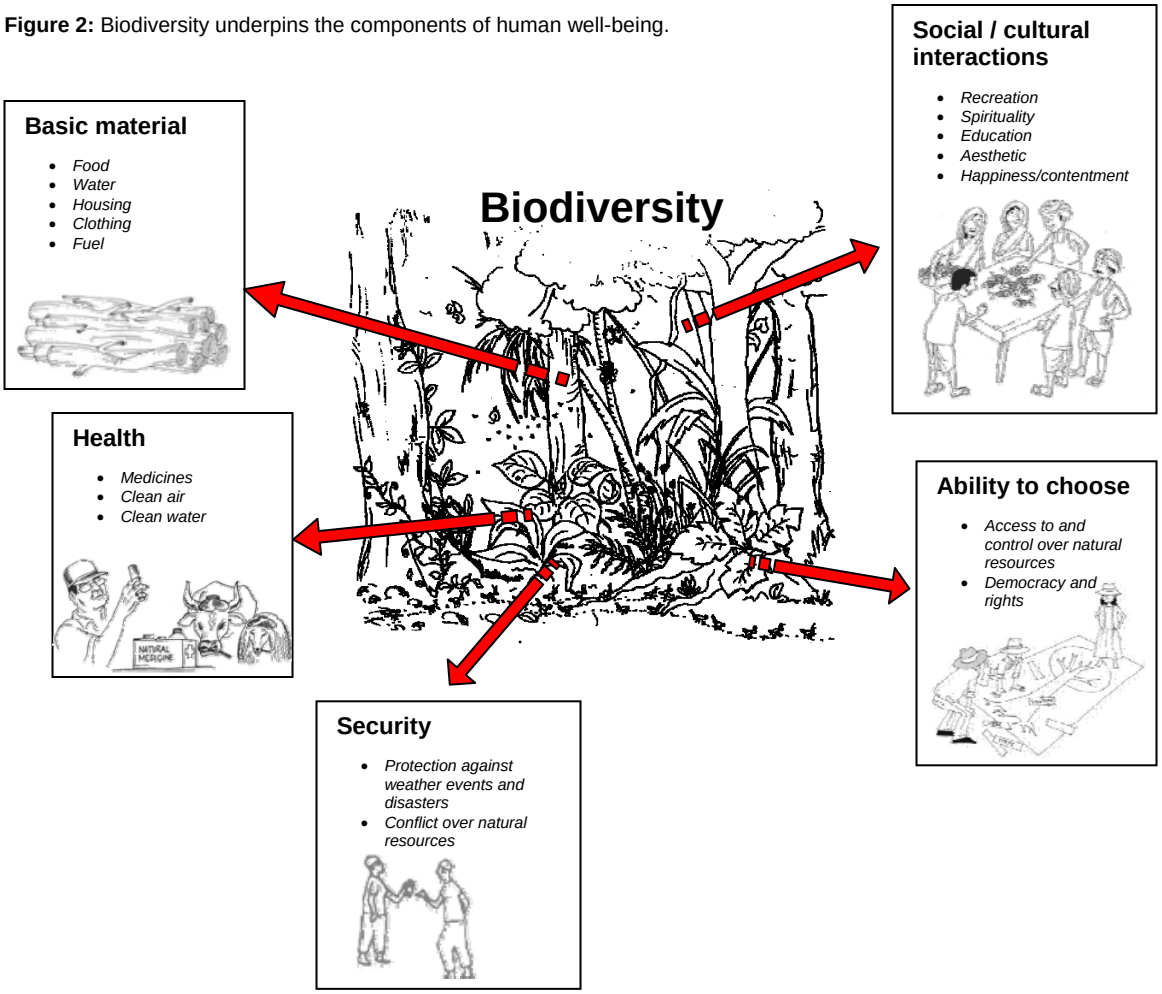
The World Conservation Union (IUCN) is the world's leading conservation network that recognises the intimate links between a healthy environment and humanity's well-being. Ecosystem health underpins human wellbeing, and the future of humanity is inextricably linked to the planet's life support systems, through the provision of environmental goods and services.

Human wellbeing has been defined by the Millennium Assessment Report as people being able to live the kind of lives they may have reason to value in terms of

i) access to basic materials for living (food, shelter, clothing),
ii) physical and mental health,
iii) security in all its dimensions,
iv) social/ cultural interactions,
v) the ability to choose how to achieve these components according to each individual's needs and wishes.

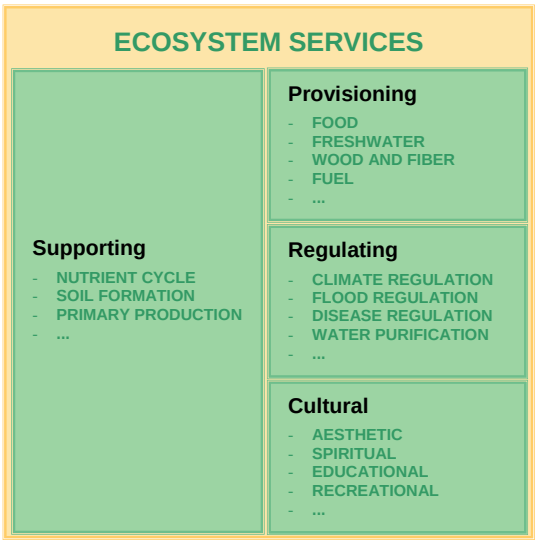
Figure 2 represents the fundamental core position of biodiversity to each of the five elements enumerated above.

Figure 2: Biodiversity underpins the components of human well-being.



Where are we today?

Figure 3: Ecosystem services



We are losing biodiversity with each passing year. Both, the IUCN Red List of Threatened Species and the Millennium Ecosystem Assessment documented declines in all biomes and across taxa with the most serious declines in islands, dry forests, polar and marine environments. The Millennium Ecosystem Assessment went further reported that 60% of ecosystem services (see Figure 3) are degraded and 30% of species globally are under threat because of climate change. At the same time, trends in the UNDP Human Development Index are improving in all regions except sub-Saharan Africa. Life is improving for many people, but at what cost?

The main threats to biodiversity continue to be the loss and degradation of remaining habitat, invasive species, overexploitation, pollution and more recently climate change. The impacts of climate change, on both biodiversity and economies, are emerging as an overarching issue that compounds the effects of the other threats. Growing political attention to climate change has focussed primarily on potential economic impacts. Despite the evident relationship of biodiversity as an economic cornerstone, attention to the effects of climate change on biodiversity is lagging.

A number of drivers of change underlie the threats to biodiversity. The global economy is a particularly potent driver. Consumption patterns and levels in North America and Europe show no signs of declining and continue to contribute disproportionately to impacts on the environment. Emerging economies, especially China, India, Brazil, Russia and South Africa, are increasing their exploitation of domestic and global natural resources to fuel their development. In China for instance, impacts of growth on forests, minerals, crops, wildlife, air quality, and water have already been felt and it is now rapidly expanding trade relationships in an effort to secure long-term supplies of critical resources.

Significant gaps in knowledge and capacity remain in linking a healthy environment and sustainable development, public health and poverty reduction. These gaps constrain support to poverty reduction through environmental conservation. The role of biodiversity has not yet been fully articulated and integrated into global sustainable development economic models and philosophy. When speaking of ecosystem services, knowledge of status and trends in key species and ecosystems that supply those services remains patchy – in particular relating to the status of plants and marine species. Conservation knowledge that has been developed and passed down over generations by indigenous peoples and women is also not being fully recognized or harnessed. Decreasing financial resources and technical capacity in the countries and regions that most need to address conservation as a means to support improved human wellbeing, including sub-Saharan Africa are compounding the problem.

Meanwhile, the number and type of stakeholders involved in environment and sustainable development issues are expanding. Besides the role of indigenous peoples and social movements, the role of many parts of the private sector in conservation is growing substantially. Building a broader constituency for conservation will be the key to success of the IUCN Programme 2009-2012 and conservation generally.

The 21st century needs urgent, new and more sustainable approaches to conserving in our natural assets, building on the principles of renewability and resilience, and employing the broader suite of stakeholders in sustainable development. These approaches should embrace traditional and local knowledge and the role of indigenous peoples, rural and urban communities and women. Improving human wellbeing will depend on addressing shortages of natural resources, many driven by climate change, and will force the need to address sustainability more seriously.

More detail on the state of the world today can be found in IUCN's situation analysis for the 2009-2012 programme (http://www.iucn.org/programme/2009_2012/situation_analysis.htm).

Driving Changes in Ecosystem Services and Human Well Being

Changes in ecosystem goods and services - and consequently in human wellbeing - are being caused by land use change, overuse of natural resources, external inputs to the environment such as agrochemicals and pollution, and introduction of native or non-native species. As well, human population dynamics, the global economy, politics and institutions and cultural values, which indirectly influence resource distribution and local ecosystem management are equally causing nefarious effects on biodiversity. Now, climate change is poised to create more havoc on biodiversity and human well-being.

All of the above drivers may work over time as pervasive slow-onset changes. They could be intermittent or linked to sudden, often catastrophic, events. They also interact across spatial, temporal, and organizational scales.

These drivers of change in ecosystem services, both positive and negative, are compounded and augmented at the ecosystem level, through cross-scale interaction and amplification of the impacts of these drivers. For example, while climate change may bring increases in rainfall and runoff to some regions, others will face cyclical drought and more intense hurricanes. Most regions will witness changes in species composition and distribution, which will have impacts at the landscape and ecosystem scale thus affecting the provision of ecosystem goods and services, with direct implications for human wellbeing. Addressing this complex interaction of factors that adversely affect biodiversity is more challenging than the individual threats themselves.

This section reviews in more detail specific causes leading to biodiversity loss and changes in the delivery of environmental goods and services, as they affect human wellbeing. The identification of these drivers is based on the analysis of past experience in IUCN, as well as internal and external on-going processes like the Global Situation Analysis for the IUCN Programme 20009-2012 or the e-discussions on the Future of Sustainability.

While the IUCN Programme 2009-2012 focuses on mitigating the negative impacts as targets for our work, these same drivers can also have positive impacts depending on the context and methods of application (see Table 1). Successful efforts at forest restoration have resulted not only in increased forest cover but also improved water quality and better livelihood opportunities for people in those areas. Conservation action, using these drivers in a positive sense, has doubled the numbers of white-tailed eagles (*Haliaeetus albicilla*) and the seabird Abbott's booby (*Papasula abbotti*). The 2006 IUCN Red list of Threatened Species reports that 139 reassessed species have improved in status in the past decade.

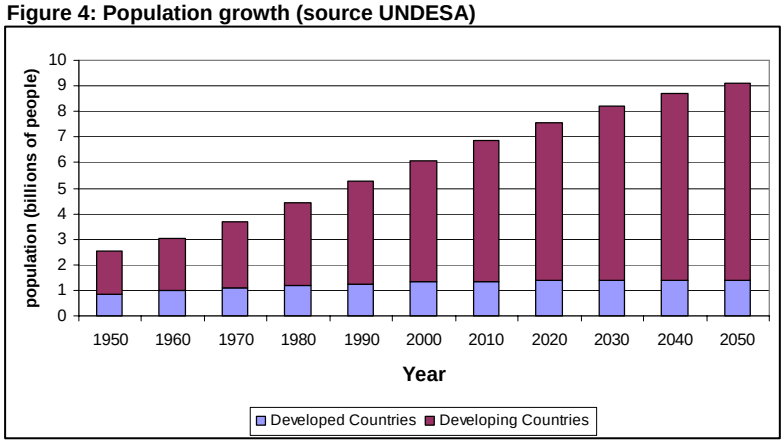
Table 1: Examples of positive and negative direct drivers leading to biodiversity change

Driver	Positive outcomes	Negative outcomes
Habitat change	Ecosystem restoration	Infrastructure development, deforestation, bottom trawling
Climate change	New range for existing species	Loss of habitat for species that are very specialised or less mobile
Natural Resource Use	Sustainable management programmes Gender equity in resource access, control and benefits	Overuse of natural resources Exceeding accepted quotas
Species introductions	Species re-introductions as part of restoration projects	Invasive species
External inputs	Controlled fires, controlled floods,	Introduction of pesticides, fertilizers, irrigation

Population demographics

Human population growth in this new millennium is continuing and is expected to continue at least until 2050 (Figure 4). The United Nations projects the world's population to increase to more than 9 billion people by 2025. Rapid population growth continues in many of the least developed countries, where a significant proportion of people depend heavily on subsistence agriculture and the use of natural resources for their livelihoods. Population pressure can lead to rapid migration, such as the mass movement of refugees from human conflict or sustained migration for economic reasons. This in turn can increase pressures on the environment and lead to permanent changes in land use.

Figure 4: Population growth (source UNDESA)



However, total population is not the sole predictor of human impact on the natural environment. Consumption patterns, population age structure, ethnic composition, household size and location, gender, health, income and education play roles too. For example, the needs of the growing elderly segments of the population may require increasing public-sector spending on healthcare and family support while reducing investments in other public goods such as environmental management. The HIV/AIDS epidemic in Africa has resulted in gender and age imbalances in many rural areas, with profound impacts on livelihoods and equity.

In addition, population growth is not uniformly distributed, but includes a significant migration from rural to urban centres in all regions. The impacts of urbanisation on biodiversity are likely to be mixed; while pressures in rural areas may decline as people move to cities, urban populations tend to consume more resources.

Global Economy

Relative human wellbeing is determined by differential access to the goods and services generated through economic activity and to the various types of capital used for production of those goods and services (see Box 1). Today's global economy has produced both the greatest concentration of wealth and the largest number of poor people in human history. The World Trade Organisation reports that on average, per capita income was 2.5 times higher in 1998 than in 1948 with world Gross Domestic Product growing at about 4% a year. Yet the UN estimates that over 800 million people remain undernourished.

Economic growth requires an expansion of manufactured and social capital, especially the physical and institutional infrastructure. Their development can have large impacts on ecosystems through waste generation, water pollution and greenhouse gas emissions – to name just a few. Global production includes inputs of materials and energy – both of which also affect the environment. The efficiency of converting those inputs into products and services is steadily increasing in industrialised countries with access to new technologies, but the poorest countries still have heavy ecological impacts through their reliance on traditional energy sources such as fuel wood.

International trade is a key component of the global economy. Increasing faster than growth if the world Gross

Box 1. Capital for production

Natural capital

available natural resources, including ecosystem services

Human capital

the number and skills of the workforce

Manufactured capital

the stock of built resources

Social capital

the institutions within which we work, both formal and informal

Financial capital

the savings available for investment

Domestic Product. International trade seems likely to increase in the years to come, with both benefits and costs for the environment.

Human wellbeing is also conditioned by income distribution and consumption patterns. As per capita income grows, the nature of consumption shifts from basic needs to goods and services that improve the quality of life, with resulting changes in the resources and capital required to produce those goods and services. Hidden gender disparities within households may affect individual wellbeing and resource use patterns, and women are often excluded from income generation opportunities. As human populations grow and economic activities intensify, we can expect a significant growth in waste, although technologies to mitigate its impacts are also being developed.

Finally, increased global interconnectedness through telecommunications and globally-integrated supply chains is leading to better lifestyles for many people. However, it is also leading to increased consumption of natural resources and associated impacts on biodiversity. The potential for overexploitation of many resources is now being recognised and strong movements to address this threat, such as payments for ecosystem services or biodiversity offset schemes, are becoming more mainstream.

Politics and Institutions

Today's international political agenda is largely focused on peace and security, including the threats of terrorism and arms proliferation. Civil unrest and armed conflict become environmental issues when they lead to the destruction of rural infrastructures, loss of livestock, deforestation, mass movements of people, widespread use of land-mines, and a cascade of conflicts between refugees and resident peoples.

Climate change has also emerged as a major global geopolitical issue and has captured the public's attention. The release of the Stern review in the UK brought its economic impact into focus and generated attention far from the private sector, many government, and civil society.

The United Nations has focused on achieving the Millennium Development Goals since their adoption in 2000, but the progress reports of 2005 suggest that we are far from reaching them by the 2015 targets in many parts of the world, especially sub-Saharan Africa. In recent years, the G8 countries have reinforced Africa in general and development in particular as central issues on the geopolitical agenda. On the other hand, the World Trade Organization Doha round talks, which were intended to be 'the development round' and deal with agricultural subsidies that harmed developing country farmers, have collapsed with no easy solution in sight.

Institutions relevant to environmental governance and management are also changing. For the environmental community, new paradigms for development and aid indicate that attention must be paid to including the environment into poverty reduction plans. In terms of the international biodiversity and development agenda, most multilateral environmental agreements and processes are focusing on implementation of existing commitments and work programmes. Some new challenges ahead include the Cartagena Protocol on Bio-safety, ongoing negotiation of an international regime on access and benefit sharing, and high seas governance beyond national jurisdiction in the context of the UN General Assembly. Effective governance underpins sustainable development and institutions play an essential role in supporting the basic conditions for the sustainable use of ecosystems.

Cultural Values

Cultural values and ethics are important foundations of human behaviour, particularly in relation to nature. In a globalized world that tends to homogenize cultures, cultural diversity provides an important safeguard for both ecosystems and social systems. It embodies the human experience of interacting with nature throughout history, civilizations and landscapes, and therefore represents the cumulative wisdom and skills of humanity to manage nature and natural resources.

The significant overlap seen in the world between biological and linguistic diversities, as exemplified in Oceania or Mesoamerica is a case in point. This geographic overlap speaks of interlinked

processes of diversification, resulting in thousand of different cultures living in diverse environments that they contribute to shape. The cultures of indigenous and traditional peoples are vivid examples of the profound and lasting connections between cultural and biological diversity.

Beyond traditional societies, cultural background and behaviour affects the drivers of biodiversity loss. These behaviours, and the resulting impact on biodiversity, can change, especially now that formal and informal networks for information exchange and learning have emerged worldwide on a range of issues, including on the valuation of nature and ecosystem services.

Gender differences and inequities

Gender differences in resource use also affect how humans value, or do not value, nature. For example, in many developing countries, women and men value and use natural resources differently and often have different knowledge and perceptions about biodiversity. Inequitable social structures also distribute benefits differentially, usually putting women at disadvantage. Thus the equitable and explicit valuing of both women's and men's uses of natural resources, and improvement in the equity of distributing the related benefits, are a requisite for conserving ecosystems.

Habitat change

Habitat change and degradation continues to cause biodiversity loss and is increasingly compounded by other direct drivers, namely climate change, extreme natural events (floods, severe draughts, earthquakes), pollution and invasive species. In addition, agriculture is gaining more attention as both a source of some ecosystem services and a driver of loss of other services.

The Millennium Ecosystem Assessment documented the dominant negative impacts of agriculture on land and freshwater use. Agriculture fragments the landscape and breaks formerly-contiguous wild species populations into vulnerable smaller units. Global demand for agricultural products is projected to rise over the next two decades. On the other hand, agricultural landscapes are critically important in providing products for human sustenance, supporting wild species diversity and maintaining ecosystem services. The need to reconcile agricultural production and production-dependent rural livelihoods with healthy ecosystems has already prompted widespread innovation to coordinate landscape and policy action.

Freshwater ecosystems are threatened by dam construction, dredging and canalization, lack of sanitation and sewage, drainage of wetlands and deforestation. Climate change can further exacerbate existing pressures and impacts.

Increasing oil prices and concerns about the limits of fossil fuels are projected to increase the production and use of bio-fuels (ethanol and bio-diesel) almost fivefold. Today, they are produced on 1% of arable land globally and support 1% of road transport demand. By 2030, that is projected to increase to 4% with the biggest increase in the USA and Europe. Growing energy needs are likely to increase the conversion of arable land from crops to bio-fuel production, leading to the creation of vast areas of biodiversity-poor monocultures, replacing low-productivity agricultural areas of high biodiversity value and increasing pressure on already scarce water resources.

Climate change and extreme weather events

Climate change has become a front-page issue throughout the world. Changing temperatures and rainfall patterns could in the medium- and long-term become the main drivers of biodiversity loss, replacing current factors such as habitat loss and fragmentation. Climate change is happening much faster than natural systems can adapt, which may lead to a massive loss of biodiversity.

It already changes species ranges and behaviours patterns of subsistence, water availability and human disease distribution are already changing, and opportunities for invasive species are increasing. Even though climate change impacts will be different for each species and region, it is clear that affected species include or will include already rare or threatened species; migratory species; polar communities; peripheral populations; genetically impoverished species; and specialized species including alpine and island endemics.

Climate change is also having impacts at ecosystem levels and it is projected that polar ecosystems and the ecosystems of the Mediterranean basin, California, Chile, South Africa and Western Australia will be especially strongly affected by climate change. The World Heritage Convention has recognized that climate change is already affecting many of the world's protected areas and is likely to affect many more in the years to come.

The direct impacts of climate change on national and global economies are also becoming evident. In late 2006, the Stern Review of the UK Government highlighted the high economic cost of inaction. It identified forest conservation as a highly cost-effective way to slow climate change and made the case for maintaining forest cover for both climate and conservation reasons. Growing political acceptance that climate change threats can be cost-effectively addressed can be an important vehicle to generate support for biodiversity conservation. However, some responses to climate change, such as poorly-planned bio-fuel plantations, can have negative impacts on biodiversity and equity.

Increasing extreme weather events due to climate change can lead to massive suffering for people and increased environmental impacts. Intact ecosystems improve resilience to and recovery from extreme weather events, and also increase the capacity to adapt to climate change more generally. Empowerment of poor communities and particularly women in disaster mitigation has also proved effective to save lives and reduce the impact on environmental resources.

Natural resource use

Natural resources provide many of the basic materials for human subsistence and wellbeing. However, over-exploitation of natural resources such as marine resources, tropical timber, water resources, medicinal plants and bush meat is widespread. Over-exploitation affects about one-third of the species that have been assessed. Unsustainable levels of exploitation clearly have significant consequences for the survival of many species and subsequently for longer-term human security.

Marine fish and invertebrates, trees, animals hunted for meat, and plants and animals harvested for the medicinal and pet trade are commonly over-exploited. It is more and more accepted that marine species are just as susceptible to extinction as terrestrial ones, yet most industrial fisheries are either fully or over-exploited. The collapse of the Canadian cod fishery demonstrates that even well-studied fish stocks can be subject to over-exploitation. Most fisheries have huge by-catches and the high value of some individual species such as tuna, groupers and wrasses result in persistent fishing and imminent biological, or at least commercial, extinction.

Although sustainable use of many species should be achievable in theory, many factors conspire to make it hard to achieve in practice. Over-exploitation remains a serious threat to many species and populations. Development of common approaches to managing these shared resources is often complicated by differences between countries and cultures in resource-use philosophy.

Species introductions and removals

Species introductions have been important in human history to produce food and materials. Our food is largely based on species that are not native to where we live (rice and water buffalo in Asia being notable exceptions). The pollination of crops sometimes is dependent on the introduction of pollinating species. For many years, agricultural management programmes have included the introduction of species for biological pest control. In most cases, these are successful tools to increase productivity and improve our lives. However, in some cases, these introduced species become invasive and harm native ecosystems.

Invasive species can be defined as non-native species that become established in a new environment, then proliferate and spread in ways that damage human interests. They are now recognized as one of the most significant threats to environmental and economic wellbeing. Most countries are already grappling with complex and costly invasive species problems, even in protected areas established to conserve native ecosystems. The problem is especially acute on islands, where unique species and ecosystems have evolved in isolation over millions of years, which makes them vulnerable to introduced predators, pathogens, and parasites.

Transport technologies have overcome natural bio-geographic barriers and allow species to travel vast distances to new habitats and become invasive. The growth of international trade and tourism provides more opportunities than ever for species to be spread accidentally or deliberately.

Invasive species have contributed to the demise of almost 40% of the species that have become extinct since 1600 AD. Invasive species also are vectors for deadly disease organisms such as malaria and the virus causing West Nile fever. Dealing with invasive species and their growing threat is urgent for both developed and developing countries. The environmental impacts are severe, and the economic damages amount to hundreds of billions of dollars annually worldwide.

External inputs

Humankind has developed technologies and materials to maximise the productivity of ecosystems with a mixture of positive and negative consequences. Fertilizers and pesticides, controlled fires and floods, and genetically modified organisms have all been developed to improve productivity, but also have resulted, for instance, in pollution that affects human health and lifestyles.

Water and air pollution are the result of waste from human activities. It includes numerous substances, including greenhouse gas emissions that lead to climate change, medications (e.g., hormones, antibiotics, analgesics, pest control agents) for livestock management, and chemicals by-products of manufacturing. One notable example of their environmental impact is the recent near-extinction of vultures in India because of Diclofenac, an anti-inflammatory drug used on cattle that are consumed by the vultures when they die. Persistent organic pollutants (POPs) can mimic natural mammal hormones and cause hormone-related diseases; beluga whales in the St. Lawrence River have suffered from polychlorinated biphenyl accumulation.

Heavy metals such as arsenic, lead and mercury have been repeatedly associated with adverse health effects following exposure through drinking water. Methyl mercury can reach toxic levels in predatory fish through accumulation in the freshwater food chain. Five Canadian provinces and over 35 USA states have issued health advisories to reduce the consumption of certain freshwater fish with excessive levels of mercury; top predatory marine fish such as tuna and swordfish have also been implicated.

While pollution does not discriminate in general, differences in access to health services, clean-air technology and real estate between the rich and poor cause distributive effects. Women in some developing countries are exposed to higher emissions of particulates from cooking and cleaning and therefore are twice as likely as men to have acute respiratory infections.

Genetically modified organisms (GMOs) are a particularly controversial recent technology, yet they are becoming more and more used in many countries and sectors, from agriculture to health and energy supplies. They may reduce biodiversity, have social impacts, or have unexpected consequences through gene transfers between plants or animals, and by creating pests or weeds that are resistant to controls. In addition to considering the scientific evidence of the impact of GMOs, other ethical issues need to be considered, including the fact that the benefits of GMOs are currently accruing primarily to the private sector and higher income countries or social groups, while poor countries and farmers are being left behind.

Additional considerations to achieve change

The IUCN Programme 2009-2012 seeks to address the drivers of environmental change to sustain the functions of ecosystems. In addition, we must consider some additional factors that affect how efficiently and effectively we can act. These factors include issues such as the impact of new technologies, gaps in current knowledge, and the need to address human rights, ethics and equity (especially gender equity).

> **Science and Technology** is a concern because of the potential impact of new technologies, such as biotechnology and nanotechnology, on biodiversity and their potential to contribute to solutions. The application of scientific knowledge on species and ecosystems, technological advances in information technologies, and innovative approaches to applied ecology in industry, land use planning and other areas of

development can have positive impacts on bio-cultural diversity and socio-environmental wellbeing.

Many knowledge gaps remain to be filled. We still have inadequate knowledge on the status of large groups such as plants, invertebrates and marine species, the contribution of biodiversity to human well-being, particularly with regards to the poor; how to achieve sustainability in the use of many resources; how to manage ecosystems in the face of climate change; how to link impacts on one level of the ecosystem to impacts in other part of the systems; and more. These knowledge gaps are impeding the development of sound intervention strategies and the setting of conservation priorities. Indicators need to be developed, agreed and applied to monitor the effectiveness of conservation and its subsequent impact on human wellbeing as well as the cultural dimensions that guarantee sustainable development.

Environmental issues are inextricably linked to **human rights** (the rights of present and future generations to enjoy a healthy life in a healthy environment). Vulnerable communities often suffer the greatest burden of environmental degradation, and, at the same time, are least able to mobilize against abuses. Linking poverty reduction with environmental objectives is at the core of a rights-based approach to conservation.

The conservation sector has yet to fully adopt **gender equity** in a comprehensive manner. Women's empowerment improves their access to resources, enhances decision-making, and leads to cumulative benefits of improved environmental management and poverty reduction for communities.

The Union's unique role

We face a paradox. Humanity's progress towards economic well-being over the past several decades contrasts sharply with our increasing global footprint on vulnerable ecosystems that undermines nature's life support systems that have fuelled our progress. Given the cultural, economic and political challenges of the twenty-first century, the conservation movement needs to rethink its approaches to achieve 'a just world that values and conserves nature'.

One source of inspiration is the ongoing innovation in many different fields, from ethics and economics to electronics. Some of these innovations provide potential solutions to conservation challenges and the incentive to build new alliances. We see:

- emerging new markets and metrics for a green economy that produce benefits for people and nature;
- innovations in governance and accountability models that override the current paralysis of multilateralism;
- new stakeholder partnerships in different sectors;
- innovative energy, bio- and eco-mimetic technologies that apply natures' own genius and provide a basis for sustainable lifestyles;
- new social networks and learning models;
- concrete solutions and new communications that provide hope for a better future rather than 'doom and gloom' scenarios.

To meet the challenges of conservation and sustainable development, IUCN must deliver high quality work at a scale and level of influence more significant than ever before. IUCN's main assets are its dedicated networks of members and volunteer experts, its constituency of both governments and private bodies, and its highly motivated world-wide Secretariat. Recognizing that nothing short of a global alliance and new ways of thinking and conceiving solutions will achieve the changes necessary for a more sustainable world, IUCN seeks to manage and deliver its work based on the following value proposition:

1) IUCN provides credible, trusted knowledge and strong technical capacities

IUCN is known for its sound scientific base in conservation and sustainable resource management, particularly in the fields of ecosystem management; marine, forest, water, and species conservation; protected area management; sustainable development linked to poverty reduction; and natural resource management and decision-making tools. IUCN derives its value as a trusted source of knowledge from its expert commission networks, its members, and its highly competent and committed staff. IUCN intends to improve its ability to produce and support the use of cutting-edge knowledge and to respond to emerging conservation and sustainable development issues.

2. IUCN builds consensus and partnerships for action

Its unique structure and credibility allow IUCN to convene a range of stakeholders to address of the most important conservation issues. The Union can bring divergent views together, build consensus and promote joint actions and solutions. That ability has been demonstrated in areas such as forestry, mining, oil and gas, and water management. Increasingly, our reputation as a 'neutral broker' allows us to also involve the private sector and encourage the application of their knowledge and expertise for sustainable development.

3. IUCN has a global and strategic reach

IUCN Members value the Union's global reach and spread, and the potential to share resources across political and cultural boundaries. Its essence is to connect governments, civil society, NGOs, science and the business communities to improve conservation policy and action. It connects the actions of its various networks in the field with global policy work. And it connects the conservation issues and achievements to wider societal objectives such as security and poverty at the national

and international level. That connectivity needs to be improved so that members, partners and Commissions receive increased benefits from their membership. IUCN also needs to extend its reach to new areas of work, new partners and new innovations to increase the influence and impact of the Union.

4. IUCN is nature's representative at the United Nations

IUCN is the only environmental organisation with a seat at the UN General Assembly. This provides IUCN members with an important and unique entry into the significant world of international debate on environment and development. Its UN Observer Status is a powerful conduit for the concerns of its members at the international level.

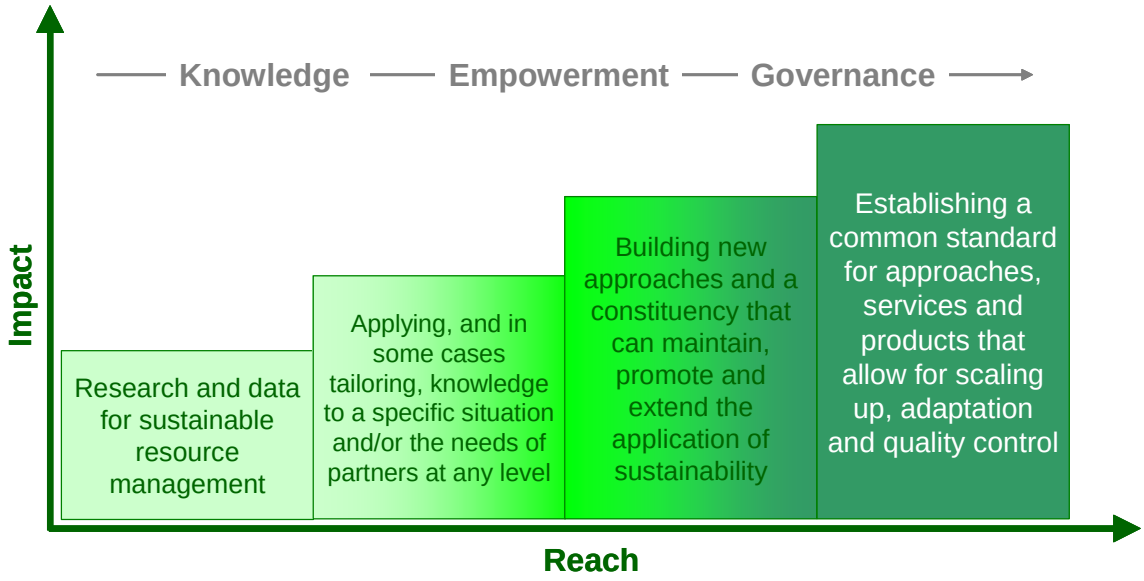


Figure 5: IUCN's value proposition and management challenge: purposefully delivering the whole value chain through partnerships, networks and a global constituency.

Through purposeful management and governance IUCN strives to ensure that the different elements of the Union contribute their knowledge, skills and expertise to achieve a level of influence and impact than would be possible as individual actors.

The IUCN Programme 2008-2012 is based on these unique strengths and seeks to improve them where possible to deliver conservation and sustainable development at both global and local scale for the benefit of people and nature.

The IUCN Programme 2009-2012

IUCN is a knowledge-based organization. It makes its knowledge on practice and policy available to allow others to make informed decisions. It provides knowledge and tools, builds capacity to use these tools, and helps others develop more effective policies and laws, instruments and institutions.

Our strategy for change in Knowledge, Empowerment and Governance combines with our value chain to influence, encourage and assist natural resource managers to develop more sustainable practices. IUCN's interventions may take place at any point along the chain and are based on the understanding that empowering people to use relevant knowledge can influence decisions that will result in change.

It is important to understand this approach, but it is not sufficient to organize and focus a large international conservation programme for a Union that seeks to add value to the extensive efforts of its members and expert networks.

IUCN's Strategy for Change

Knowledge

IUCN generates knowledge that is applied by intended users to measurably support ecosystem and human wellbeing

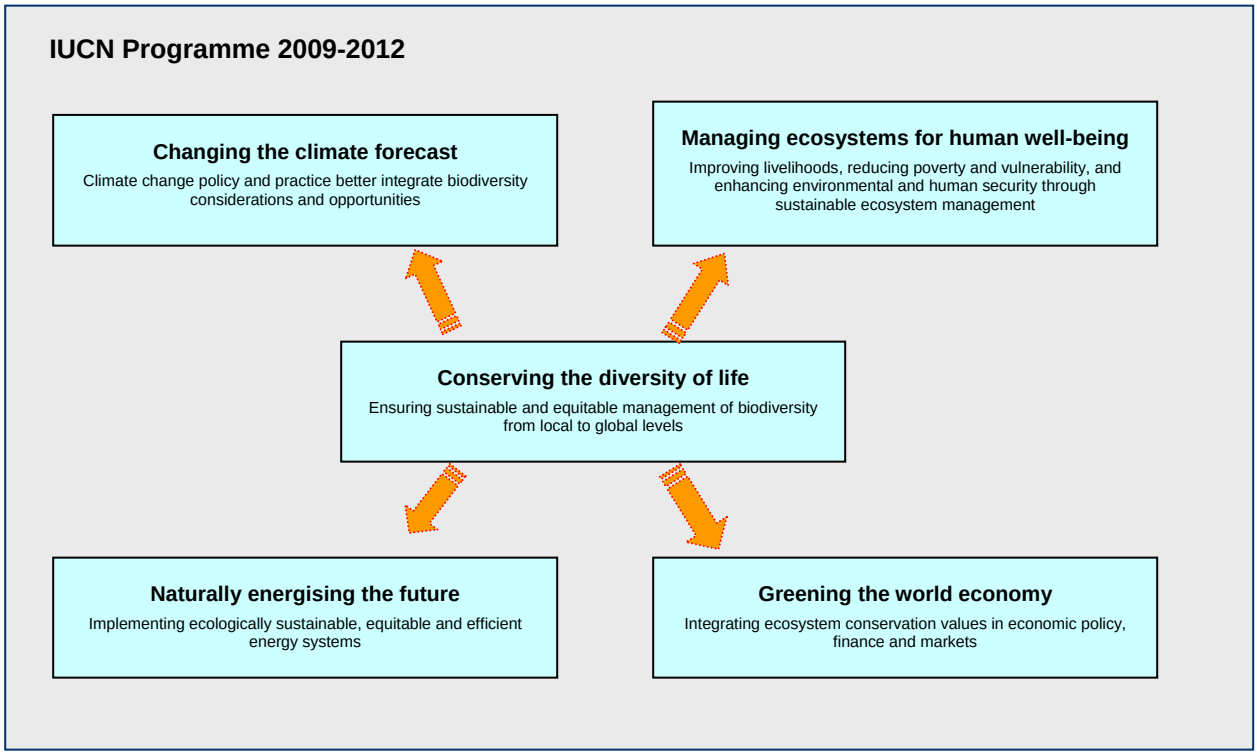
Empowerment

IUCN increase the capacity and ability of key stakeholders to participate in relevant decision making processes

Governance

IUCN delivers the evidence and guidance for improved and new policies and governance arrangements that conserve biodiversity and improve livelihoods

The IUCN Programme 2009-2012 identifies five thematic priority areas (see below). It targets issues that need to be addressed to tackle the conservation challenges identified in IUCN's Future of Sustainability discussions and the Situation Analysis for 2009-2012 (see previous sections), and reflects the lessons we have learned in the implementation of previous programmes of work. The Programme's core is the conservation of biodiversity and sustainable use of natural resources.



The 2009-2012 Programme is considerably different from previous programmes in order to ensure:

- greatly improved focus;
- better communication of important conservation messages;
- easier illustration of the IUCN Programme's contribution to conservation and sustainable development;
- better integration and understanding of the complex interface between the environmental, economic and socio-cultural components of sustainable development; and
- clearer demonstration of how the elements of IUCN's strategy of Knowledge, Empowerment and Governance are joined – and how these elements are used to influence effective biodiversity conservation at all levels while at the same time applying policy lessons to inform practice.

During the intersessional period (2009–2012), IUCN's work will be defined at two levels:

1. The activities, initiatives and projects of the Secretariat and the Commissions for which IUCN is directly accountable in terms of delivery, effectiveness and financial management.
2. The activities, processes and/or initiatives that may be catalysed or influenced by the Union, but for which the Secretariat and Commissions do not have any direct responsibility.

The Programme described in this document refers only to the global level of IUCN's work for which its Secretariat and Commissions bear responsibility. However, some suggested examples of results at component programme level are provided to illustrate the sort of practical activities that could be undertaken as part of this programme. In addition, IUCN's work in the field will also need to be planned and implemented with national and local priorities in mind. Development of regional and thematic programmes will take place with intensive consultation with relevant stakeholders to identify local needs and priorities. This ensures that the IUCN Programme 2009-2012 is demand-driven at the level of implementation, but within a strong global framework.

For the first time, the IUCN Programme 2009-2012 is fully results-based. It incorporates clear indicators and measures of success for each result at global and component programme level to monitor progress. It also explicitly recognises the importance of cross-cutting themes, including cultural sensitivity, rights-based approaches and gender equity in achieving successful conservation.

Thematic priority area 1 - Conserving the diversity of life

Ensuring sustainable and equitable management of biodiversity from local to global levels

IUCN needs to develop effective and strategic interventions to address key issues on the global agenda for sustainable development, while also strengthening its core work of conserving biodiversity. The intent of the IUCN Programme 2009-2012 is to address the insufficient progress toward sustainability and the ever-growing threat to environmental health and human well-being.

IUCN creates knowledge and understanding of the complex relationship between biodiversity and the key processes driving biodiversity loss, for instance by providing key indicators on the status and trends of biodiversity, and developing effective tools and methods for sustainable management based on its multiple sources of information. Subsequently, we empower people to use this knowledge in order to influence governance mechanisms, which together will address the challenges of sustainable development.

This thematic priority is the foundation of IUCN's work. It entails the delivery of knowledge on the status of biodiversity, the delivery of ecosystem goods and services and on the sustainable management of landscapes. Further, it translates that knowledge into pragmatic solutions and improved governance that tackle the direct causes of biodiversity loss, and provides the solid knowledge base to support results in the other four thematic priority areas.

Practically, it means the delivery of basic repositories of knowledge, standards and tools for biodiversity conservation and effective management of global and regional common natural resources. When this knowledge is directly applied to one or more of the other thematic priority areas, component programme results should be placed in the corresponding thematic priority area. For example, the production of IUCN's Red List of Threatened Species will fit into global result 1.2, but the possible uses and applications of the Red List data for climate change will fit into result 2.2.

Global result 1.1: Biodiversity-related policies and governance systems enable action towards the achievement of biodiversity conservation.

IUCN has been a key player in applying the full range of its knowledge in developing, advising and implementing biodiversity-related agreements at all levels, particularly through its Commission on Environmental Law. Such agreements include the full suite of hard and soft law instruments addressing the wide range of issues of environmental management from local to global. Of growing concern for the environmental community is governance for natural resources and regions beyond the mandate of existing national authorities (e.g. the high seas) but which require concerted and collective action for effective management. In addition, the challenge of governing resources and sites that span political boundaries including river basins and many trans-national protected areas will be addressed in IUCN's Programme.

IUCN will continue to improve its ability to influence a broad range of international, regional and national processes and institutions to support more efficient, effective and equitable biodiversity conservation and sustainable development.

Examples of Component Programme intersessional results and targets:

- *Biodiversity conservation is a key element of China's official policy toward development and investment in Africa.*
- *Trans-boundary management plans developed and implemented based on best practice endorsed by the World Commission on Protected Areas, as a demonstration, in four of IUCN's programmatic regions.*
- *Conservation action regarding threatened shark species in the Caribbean implemented.*
- *The Convention on Biological Diversity Programme of Work on protected areas is applied, as a demonstration, in key flagship protected areas in China.*
- *Sectoral policies in Malaysia clearly contain provision for biodiversity conservation objectives.*

Global result 1.2: IUCN standards, tools and knowledge for sustainable natural resource management available and used for biodiversity conservation including effective management of global and regional common natural resources.

The ability to make and implement sound decisions and choices is largely dependent on the knowledge and tools available and the capacity to use and apply them. Despite the progress made, gaps still remain in the way we generate and share knowledge for biodiversity conservation and sustainable development. A comprehensive and integrated biodiversity information resources system requires a better understanding of the complexity of natural systems, and improved means for disseminating the information. Social needs and economic realities also need to be taken into account when conserving and using natural systems according to ecosystem management principles, including the particular needs of diverse cultures, and the importance of human rights frameworks to empower disadvantaged groups in the quest for equity in natural resource use.

Examples of Component Programme intersessional results and targets:

- *National species assessments in four South American countries based on Red List .*
- *Use of landscape level negotiation tools developed by the Forest Programme successfully replicated in the Water and Marine Programmes.*
- *'Flagship' knowledge products on species, ecosystems, protected areas, law ('Ecolex') and governance, integrated into an effective and integrated information management tool*

[Text box: **World Heritage**]

The Convention Concerning the Protection of the World Cultural and Natural Heritage was adopted by the General Conference of UNESCO in 1972 with the primary mission to identify and protect the world's natural and cultural heritage considered to be of *"outstanding universal value"*. IUCN has been involved in the World Heritage Convention from the very beginning, having drafted the text with UNESCO in 1972. IUCN is explicitly recognized within the Convention as the advisory body to the World Heritage Committee on natural World Heritage sites and receives an annual contract from the UNESCO World Heritage Centre. The IUCN World Heritage work is managed by the Programme on Protected Areas, working in collaboration primarily with WCPA and other IUCN Commissions, the UNEP World Conservation Monitoring Centre (UNEP-WCMC) and IUCN Regional and Country offices.

IUCN's role under the Convention is threefold:

- evaluate all natural and 'mixed' sites nominated for World Heritage Status, and contributes to evaluations of certain cultural landscapes.
- monitor the state of conservation of existing World Heritage sites.
- contribute to training, capacity building and related initiatives, particularly at regional and field levels.

[end text box]

[Text box: **Red List**]

Biodiversity loss is one of the world's most pressing crises, causing growing global concern about the status of the biological resources on which so much of human life depends. It has been estimated that the current species extinction rate is between 1,000 and 10,000 times higher than it would naturally be. Many species are declining to critical population levels, important habitats are being destroyed, fragmented, and degraded, and ecosystems are being destabilised through climate change, pollution, invasive species, and direct human impacts. At the same time, there is also growing awareness of how biodiversity supports livelihoods, allows sustainable development and fosters co-operation between nations. This awareness is generated through products such as the IUCN Red List of Threatened Species.

The IUCN Red List is the world's most comprehensive inventory of the global conservation status of plant and animal species. It uses a set of criteria to evaluate the extinction risk of thousands of species and subspecies. These criteria are relevant to all species and all regions of the world. With its strong scientific base, the IUCN Red List is recognized as the most authoritative guide to the status of species. More information at: http://www.iucn.org/themes/ssc/redlist.htm and http://www.iucnredlist.org.

[end text box]

Thematic priority area 2 - Changing the climate forecast

Integrating biodiversity considerations and opportunities into climate change policy and practice

There is now compelling evidence that the world is warming up: polar bears are threatened, breeding patterns are changing and extreme weather events increasing. Global climate change is the most pressing concern of the 21st century. Increasing temperatures, changing rainfall patterns, increased frequency and severity of extreme weather events and sea level rise are already being observed and have serious implications for societies and the environment. Reducing greenhouse gas emissions and improving the capacity of the world's ecosystems and communities to adapt to inevitable climate change impacts are two central challenges.

IUCN is concerned with the impact of climate change on the world's biodiversity and on people's livelihoods, as well as the impacts of actual or proposed mitigation and adaptation measures. Poor and vulnerable countries and communities and others, including women, without access to information and decision-making, particularly in developing countries, will be most affected and least able to cope with the impacts of climate change. Their vulnerability is exacerbated by the fact that swift environmental changes often aggravate existing discrimination, further strain access to resources, and lead to conflict. Mitigation and adaptation are the two broad strategies currently available to respond to the impact of climate change. Through its science and expertise, IUCN has a major role to play in influencing policies, developing scenarios and making sure the best information and capacity are available for implementing these strategies.

Global result 2.1: Climate change mitigation and adaptation policies and practice include biodiversity concerns from local to global level.

Although governments and businesses are starting to take greater responsibility for their greenhouse gas emissions, the targets that have been agreed so far are too modest to have any significant impact on the warming trend. Effective and efficient sustainable development depends upon climate change mitigation becoming a significant part of natural resource policy and practice.

IUCN can contribute greatly to the post-Kyoto negotiations by monitoring the impact of climate change on biodiversity, advocating better solutions, influencing policies and laws and building capacity for effective commitments to reduce atmospheric concentration of greenhouse gases.

Examples of Component Programme intersessional results and targets:

- *Policies and implementation demonstrated in at least two top-ten CO2 emitting countries on how biodiversity loss can be mitigated in the face of climate change.*
- *Scenario techniques showing the impact of climate change on biodiversity demonstrably inform policy development and implementation in the African context.*
- *Criteria provided by IUCN to ensure that implementation of carbon offsets also contribute to ecosystem health and biodiversity conservation.*
- *Analyses of how carbon offsets contribute to ecosystem health and biodiversity conservation demonstrably inform policy development and implementation in Latin America.*

Global result 2.2: Natural resources management policies and strategies to adapt to the impacts of climate change are adopted and implemented.

Despite the growing awareness about climate change, we are now past the point where the Earth's warming can be avoided. Since we cannot prevent all climate change, and while more aggressive reductions in greenhouse gas emissions are undoubtedly needed, the key challenge facing the nature conservation community is less about dealing with specific projected impacts and more about managing the uncertainties created by climate change. A precautionary approach is needed that reduces current risk, plans for movement of species and keeps future management options

open. This means adopting a more dynamic approach that tests assumptions, monitors results and adapts management actions accordingly.

Examples of Component Programme intersessional results and targets:

- *Coastal zone management plans, water resource allocations and forest management practices in Meso America are designed to mitigate the damage from extreme weather events, based on IUCN's experience in South East Asia.*
- *Protected areas systems foster natural adaptation by species, communities and ecosystems by providing refugia and critical habitat along corridors and migration routes in all IUCN regions.*
- *Potential climate refugia identified in Natural World Heritage Areas, Biosphere Reserves and other protected area to reduce the impact of climate change on biodiversity and community livelihoods that depend on those areas.*
- *Landscape level climate-adaptive natural resource management strategies for representative freshwater, coastal marine, savannah, tropical and boreal ecosystems developed by IUCN Member States, Member NGOs and partners, in three regions.*
- *Representatives of vulnerable populations, including indigenous peoples and women, measurably involved in decision-making related to adaptation policies or programmes in selected IUCN countries.*

[Text box: **Improving Coral Reef Resilience to climate change**]

As one of the most threatened marine ecosystems in the world, coral reefs have been a centre of concern to IUCN for many years. In developing countries in particular, millions of local communities depend on them as a source of protection, income and food. As a response, the Global Marine Programme (GMP) is actively involved in improving knowledge and building capacity to improve coral reef management, and enhancing local communities' livelihoods.

At the global level, GMP's work focuses on building bridges between scientists and managers, to help improve understanding and management of coral reefs' ability to adapt to climate change. In 2006 the Climate Change and Coral Reefs Working Group (IUCN-CCCR) was formed to synthesise resilience knowledge concerning coral reefs, and expedite the development of tools that improve the protection of coral reefs under the threat of climate change. The "Reef Manager's Guide to Coral Bleaching" constitutes one of the key tools developed so far.

At the field level, IUCN, together with its partner CORDIO, is particularly active in eastern Africa and South Asia to work on coral reef monitoring and research. While this work particularly emphasises climate change impacts and resilience of reef systems, a Coral Reefs and Livelihoods Initiative, in partnership with UNEP, is developed in South Asia to enhance livelihood and diversification in association with coral reef management.

[end text box]

[text box: **The CRiSTAL Toolbox**]

IUCN, in collaboration with IISD, the Stockholm Environment Institute—US and Intercooperation, has developed a project management tool called CRiSTAL (Community-based Risk Screening Tool – Adaptation & Livelihoods). The tool is designed to help managers of sustainable livelihood and environmental management and restoration projects to: (a) understand how climate change affects their work; (b) systematically consider how their work can contribute to vulnerability reduction and adaptation; and, (c) use this understanding to develop and incorporate climate risk-reduction and adaptation measures in their programming.

[end text box]

Thematic priority area 3 - Naturally energizing the future

Implementing ecologically sustainable, equitable and efficient energy systems

Energy plays a role in everything we do and humanity's growing requirements for energy are resulting in significant impacts on biodiversity. Energy supply systems both depend on and influence ecosystems. Ecosystems, such as watersheds and forests, are critical for the provisioning of energy services such as water flows for hydro-electricity and biomass for bio-energy. However, current energy production can also cause species and habitat loss along the entire energy cycle from exploration to production and distribution to final use. The very biodiversity that provides energy services is under threat by the growing demand for energy.

At the same time, globally, energy systems are changing. These changes are driven by factors such as development imperatives, security and environmental concerns. It is increasingly recognised that energy choices are also having an impact on the world's ability to respond to and mitigate climate change. The options to meet energy demand are expanding to include renewable sources such as wind, solar and geothermal energy while recognising that traditional sources such as coal, gas and oil cannot completely be eliminated in the near future. No one energy source is completely biodiversity-neutral and energy choices will need to be made with a full understanding of the trade-offs involved in any specific situation.

IUCN will support processes that accelerate the transition to energy systems that are ecologically sustainable, socially equitable, and economically efficient while making full use of the best available technologies and governance arrangements.

Global result 3.1: Energy policies and strategies mitigate the impact of the growing energy demand on biodiversity.

The International Energy Agency predicts a 50% growth in demand for energy by 2030 with 80% of that demand to be met by fossil fuels. The World Energy Council has produced several scenarios and most of these predict a considerable expansion in biomass energy especially between 2050 and 2100. This demand is mainly driven by population dynamics, development needs and consumption patterns. Each of these possible futures has significant potential and likely repercussions on biodiversity, the ecosystem services it supports and subsequent impacts on human well-being.

Industrialised countries are slowly shifting towards alternative sources of energy to decrease their dependence on imported fossil fuels. But whether with the actual energy system relying on exploration, production and distribution technologies that are environmentally harmful or with the progressive conversion to alternative energy schemes, any energy model will unavoidably have some impacts on biodiversity. Energy policies and strategies, including at the corporate level, need to recognise and minimize any negative impacts in order to avoid further degradation of ecosystem services and subsequent repercussions on human well-being.

On the other hand, about 1.6 billion people currently lack access to electricity and over 2 billion people depend on traditional biomass fuels for cooking and heating. Often women suffer most from 'energy poverty' because they are responsible for gathering food, fuel and water. The world's poor people have a legitimate right to and need for increased energy services which are affordable, healthier, more reliable, and more sustainable.

Examples of Component Programme intersessional results and targets:

- *Methods for balancing trade-offs at the landscape level between biodiversity conservation and meeting local level energy requirements demonstrated in landscapes characterized by extreme poverty.*
- *Based on IUCN's experience and guidance, at least three major energy corporations revise and implement extraction/distribution guidelines in order to support the conservation of biodiversity.*
- *Based on IUCN's experience and guidelines, at least three major energy corporations invest in alternative energy technology that will not harm biodiversity.*

Global result 3.2: Ecosystem services that underpin sustainable and equitable energy, are incorporated in energy policies and strategies.

Ecosystems provide the raw material for several types of energy production: examples include biomass (wood, grasses, seeds for oils, plant material for sugars) and water flows for hydropower from the micro to the large scale. Ecosystems also provide supporting services which underpin many of the energy options - such as the creation of productive soils, nutrient cycling and photosynthesis which are all critical for biomass production. Water is essential to provide cooling for nuclear power plants, and extracting usable fuels from tar sands requires vast amounts of water. Unfortunately, the services which ecosystems are providing to energy systems are rarely formally recognized by energy producers or consumers – meaning that they are not owned, valued, paid for, or otherwise integrated in energy decisions. Yet the positive role of biodiversity in supporting delivery of energy is dependent on responsible approaches to energy – such as implementing biodiversity offsets or locating energy production in areas of least harm to ecosystems.

New and emerging technologies (e.g. “clean coal”) and alternative energy sources (wind, solar, geothermal, etc.) can all play a role in reducing the impact of conventional energy, particularly by reducing greenhouse gas emissions. However each may have its own implications and impacts with regard to biodiversity and equity. Developing and implementing sustainable energy strategies based on ecosystems will require a more thorough understanding of those implications and impacts.

Examples of Component Programme intersessional results and targets:

- *Policies guiding the production of ethanol fuel are revised and implemented to measurably improve ecosystem function in selected landscape in Brazil.*
- *At least two major forest concessions reworked to support both timber extraction and ecosystem services for energy production in Ghana.*
- *EU policy promoting the use of alternative energies do not support technologies deemed by IUCN to harm biodiversity or biodiversity conservation efforts.*
- *At least three major energy corporations invest in alternative technologies using ecosystem goods and services as energy sources.*

Thematic priority area 4 - Managing ecosystems for human well-being

Improving livelihoods, reducing poverty and vulnerability, and enhancing environmental and human security through sustainable ecosystem management

Increasing desertification, loss of soil fertility, changing climatic conditions, depletion of fisheries, deforestation and other environmental changes contribute to the declining capacity of ecosystems to meet human needs, often resulting in deepening poverty and declining human security.

Poverty is defined by low levels of income, poor health, lack of access to education and information, high vulnerability, limited influence on decision-making, lack of essential freedoms, and lack of rights and opportunities to access resources, financing, and other economic assets. Approaches to reduce poverty must provide tools and other means for people to enhance and secure their economic assets, and consider the special needs of indigenous peoples and other distinct or marginalized groups. Since two-thirds of the poor are women according to UNDP's Human Development report, approaches should also incorporate gender equity standards and ensure that women are direct beneficiaries of poverty reduction. This involves increasing women's capacity and participation in decision-making, including equitable access and control over natural assets.

Basic security and livelihood security are critical to long-term human wellbeing and lasting conservation outcomes. Increasing demands on natural resources are likely to spawn human conflicts at local, national, and international levels. Climate change is also expected to expose human populations in vulnerable locations to an increase in extreme weather events, another form of insecurity.

Conservation actions that take into account equity, equality, rights, and vulnerability issues, and promote stakeholder dialogue and conflict management, can contribute to cooperation and conflict prevention. In post-conflict situations, restoration of ecosystems and livelihoods and landscape management planning become priorities. Environmental insecurity, human insecurity and rural poverty are intimately linked, and unless they are tackled together, efforts to reduce poverty and conserve biodiversity will fail in the long run.

IUCN has been playing a leading role in integrating environmental concerns into development strategies, but significant gaps still remain. The link between conservation and human wellbeing is not yet fully accepted by decision makers. The concept of ecosystem goods and services provides a new perspective to more convincingly express and implement IUCN's commitment to both conservation and development, including in post-disaster rehabilitation and interventions on environmental emergencies.

Global result 4.1: Development policies and strategies support vulnerable and poor stakeholders, especially women, to sustainably manage ecosystems for improved livelihoods.

Enhanced livelihood security will be achieved through innovative approaches that improve management of ecosystems and create new opportunities for increasing the availability and quality of productive assets for women and men in rural communities and urban contexts. This result requires an approach that combines tools needed to address the four dimensions of poverty – assets and opportunities, power and voice, security, and capabilities – and includes considerations of gender equity and cultural diversity.

Natural resource governance systems need to enhance effectiveness and equity if they are to deal with the range of issues involved in the links between ecosystems, human well-being, and environmental security. Greater effectiveness and equity are achievable through rights-based approaches and democratic decision-making on the use of and access to ecosystem goods and services, markets, technology and capital.

Environmental decision-making needs to maximize the contributions of ecosystem services to poverty reduction, and to minimize adverse impacts of conservation on livelihoods.

Examples of Component Programme intersessional results and targets:

- *Measurably increased access to and control over natural based assets by rural communities, especially women, in 50 project areas.*
- *Working with the Uganda State Member and other relevant Ministries, the Poverty Reduction Strategy Papers is revised to clearly integrate ecosystem management into poverty reduction strategies.*
- *Working with selected UNDP Country Offices where IUCN is most active, UNDP Country Strategies are revised to clearly integrate ecosystem management as a key component supporting poverty reduction.*

Global result 4.2: Sustainable environmental management reduces vulnerability to natural hazards and conflicts.

Building more secure and sustainable livelihoods depends on multiple elements like integrating approaches and tools for risk management and reduction, enhancing the resilience of ecosystems and human communities to unexpected change (including considerations of gender equity and cultural diversity), and building greater capacity to respond to threatening events.

IUCN is expanding its capacity to respond to natural hazards, starting with a better understanding of the challenges they create, the needs of ecological and livelihood rehabilitation, and the potential contributions conservation can make. IUCN will seek to expand partnerships and promote greater consistency of interventions of the humanitarian sector, governments and development cooperation, to better integrate the environment in relief and mitigation operations as well as in preventive and post-conflict strategies.

Examples of Component Programme intersessional results and targets:

- *Ecosystem management principles and practices clearly incorporated into major disaster preparedness in all relevant regions where IUCN works, through partnerships and collaborative work with humanitarian and development communities.*
- *Lessons from existing examples of successful peace parks replicated and adapted to local situation in at least 20 other transboundary conflict zones.*
- *Working with UNHCR, ecosystem management principles incorporated and implemented in refugee relocation efforts leading to a measurable improvement in livelihoods as well as key ecosystem and biodiversity indicators relative to UNHCR's previous refugee work.*
- *Working with CARE International, key principles for ecosystem management clearly incorporated into CARE's work on preparing disaster preparedness plans.*

[text box: **The Conservation for Poverty Reduction Initiative**]

In September 2005, the World Conservation Union (IUCN) launched the Conservation for Poverty Reduction Initiative (CPRI) to harness and focus the institutional capacity in biodiversity conservation as a tool for improving human well-being and to provide a facility to mobilize needed complementary skills through partnerships and alliances. IUCN, with its Membership, expert networks in Commissions and world-wide Secretariat is uniquely placed to contribute to supporting that link. More information at: http://www.iucn.org/themes/spg/portal/index.htm.

[end text box]

[text box: **Mangroves For the Future**]

Mangroves for the Future is a partnership-led initiative aimed at promoting investment and action in ecosystem conservation as essential infrastructure for sustainable coastal development. The Initiative is founded on a vision for a more healthy, prosperous and secure future for all Indian Ocean coastal communities, where all ecosystems are conserved and managed sustainably. In order to ensure ecosystem productivity and continued support to human development, they need to be maintained and improved to meet both today's needs as well as future demands and pressures just like any other component of infrastructure. Degrading this valuable stock of natural capital puts a serious strain on the economy and society, at local, national, regional and even global levels — as has become all too apparent in the aftermath of the 2004 Indian Ocean tsunami.

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Thematic priority area 5 - Greening the world economy

Integrating ecosystem conservation values in economic policy, finance and markets

Today's economies generally fail to support the sustainable management of ecosystems, primarily because the full value of biodiversity is not taken into account. Despite significant progress in many countries, much work remains to be done to widen and deepen the incorporation of environmental values and related livelihood concerns in economic policy, markets and finance, particularly with respect to biodiversity, intangible ecosystem services, and poverty reduction. A related priority is to develop new sources of finance for biodiversity conservation, together with improved allocation mechanisms to ensure more cost-effective and more equitable conservation.

The challenge is not so much conceptual or technical as political, namely to persuade the public and policy-makers that economic policies and markets can and should be reformed to support ecosystem conservation. The starting point is to build capacity within government agencies and private business to assess and reduce adverse environmental impacts. Further steps typically involve efforts to internalize environmental values in economic policy and markets through the use of economic incentives.

Global result 5.1: Economic, trade and investment policies better integrate biodiversity values.

Growth in global economic output, driven in large part by the globalization of trade and investment, is putting increasing pressure on natural resources everywhere. The pace of economic globalization may be outstripping the capacity of local and national governments, and multilateral institutions, to monitor and regulate markets in the public interest. IUCN will help by providing information and analytical tools for assessing the impacts of trade and investment flows on natural resource use, and by offering alternative policy proposals which can help ensure that global trade and finance support rather than undermine biodiversity conservation and sustainable use.

Examples of Component Programme intersessional results and targets:

- *Free Trade of the Americas agreement influenced to clearly integrate biodiversity conservation and ecosystem management as a key principle.*
- *Guidelines synthesized from a range of IUCN experience integrated into at least three major mainstream global investment funds and further six claiming to be ethical investment funds.*
- *Countries preparing national development plans during the intersessional period clearly incorporate objectives and measures to halt biodiversity loss and support ecosystem management.*

Global result 5.2: Companies, industry associations and consumer groups incorporate ecosystem values into planning and action.

Modern economies consume vast quantities of energy and raw materials, and produce high volumes of wastes and polluting emissions. Emerging economies, especially China and India, will have a significant and increasing influence on biodiversity globally in the coming decades. Fuelling development in these economies will certainly involve exploitation of natural resources both domestically and globally. Impacts of this growth have already been felt within China, which is now expanding trade relationships with the rest of the world, in an effort to secure long-term supply of critical resources. At the other end of the scale, millions of small and medium-scale entrepreneurs and investors across the globe continue to rely on natural resources and ecosystem services for their livelihood.

Continued globalization of capital markets and supply chains, combined with mounting regulatory pressure from governments and increasingly effective NGO campaigns, is likely to foster wider environmental awareness by companies throughout the world and corporate social and environmental responsibility strategies are one of the results of this growing awareness.. The challenge for IUCN is to hasten this trend by mobilizing public and political opinion, strengthening

government regulatory capacity and policy frameworks, and assisting companies and industry associations that demonstrate a real commitment to change in mainstreaming the environment in their wider activities.

IUCN will work to support full integration of biodiversity concerns and opportunities into business planning at all scales.

Examples of Component Programme intersessional results and targets:

- *Working with key actors in the private sector, tools and methods developed and demonstrated to internalise environmental costs and benefits in at least six different supply chains linking production to consumption.*
- *The South Africa Tourism Association integrates new practices aimed at measurably reducing environmental impact, based on IUCN's guidance and advice.*

[Text box: **GISP**]

Since 1997, a coalition of scientists, economists, lawyers, social scientists, conservationists and resource managers have worked together to develop a new comprehensive strategy for addressing the growing problem of adverse effects of invasive species on both natural as well as managed ecosystems. It now has been well documented that invasive species are one of the greatest threats to biological diversity globally and the most serious threat on many island systems. There are also enormous economic losses incurred due to the impacts of invasive species and they have impacts on human health and development.

IUCN, along with several partners, formed the Global Invasive Species Programme (GISP) in 1997. The main partners at the outset were SCOPE, United Nations Environment Programme (UNEP), and CAB International (CABI) who developed awareness and understanding about invasive species and developed several important works including the Global Invasive Species Strategy and a toolkit for the management of invasions. More recently, IUCN has partnered with CABI, The Nature Conservancy (TNC) and the South African National Biodiversity Institute (SANBI) to take GISP further into the realm of spreading information about invasive species and the ways of addressing threats by invasions as well as addressing the global policy environment on this issue. GISP has also implemented a series of projects related to the understanding of invasions and their costs to biodiversity and development supported by a range of donors. CABI, IUCN and TNC are presently providing some staff support to enhance the secretariat of GISP as well as to expand its membership.

[End text box]

[text box: **WBCSD**]

The World Business Council for Sustainable Development (WBCSD) is a CEO-led, global association of some 190 companies dealing exclusively with business and sustainable development. The Council provides a platform for companies to explore sustainable development, share knowledge, experiences and best practices, and to advocate business positions on these issues in a variety of forums, working with governments, non-governmental and intergovernmental organizations. Members are drawn from more than 35 countries and 20 major industrial sectors. The Council also benefits from a global network of about 60 national and regional business councils and regional partners.

The Council's objectives are to:

- Be a leading business advocate on sustainable development;
- Participate in policy development to create the right framework conditions for business to make an effective contribution to sustainable human progress;
- Develop and promote the business case for sustainable development;
- Demonstrate the business contribution to sustainable development solutions and share leading edge practices among members;
- Contribute to a sustainable future for developing nations and nations in transition.

In order to achieve this, the Council focuses on three key areas:

- Energy and Climate
- Development
- The Business Role

[end text box]