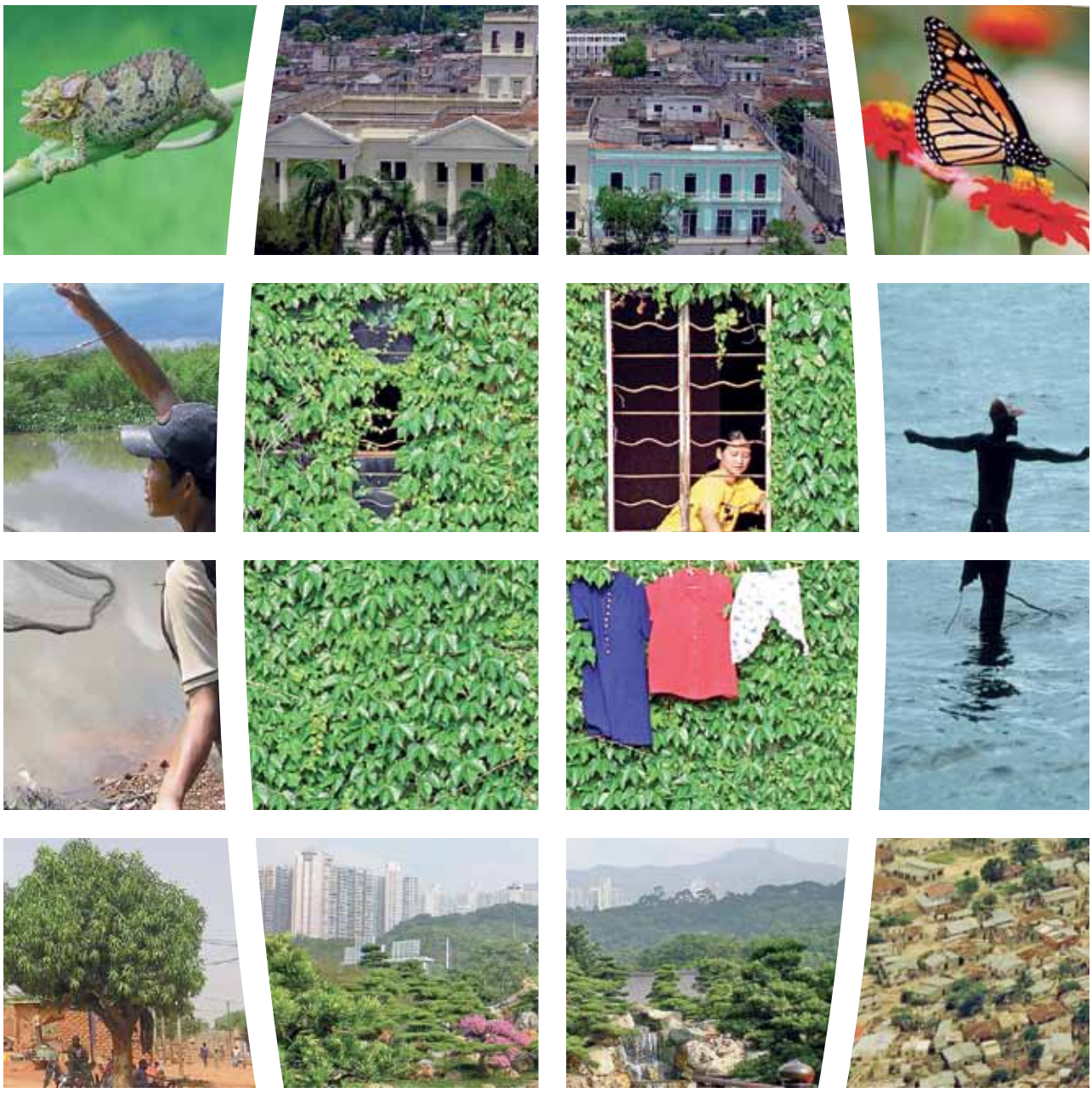
SUPPORTING LOCAL ACTION FOR BIODIVERSITY
THE ROLE OF NATIONAL GOVERNMENTS



UN HABITAT
FOR A BETTER URBAN FUTURE

Convention on
Biological Diversity

Supporting Local Action for Biodiversity:

The Role of National Governments

UN HABITAT

Convention on Biological Diversity

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Foreword

The need for city governments to tackle the challenges of biodiversity loss is more important than ever as the world's population has grown enormously in recent decades, particularly in developing countries. Urbanisation processes are undoubtedly responsible for some of this loss. Yet strategic urban planning can make cities more compact, reducing the spatial footprint of development and allowing for more shared infrastructure. This in turn reduces per capita resource use. Biodiversity reciprocates by providing ecosystem services crucial to the functioning of cities such as flood prevention, which in turn promote adaptation to climate change. The historic decision made at the 10th Conference of the Parties (COP10) to the Convention on Biodiversity to adopt the 2011-2020 *Plan of Action on Sub-national Governments, Cities and Other Local Authorities for Biodiversity* acknowledges the important contribution cities can make to stemming this loss, and defines multi-level cooperation between different levels of government.

The present publication helps those in every tier of government around the world as they manage biodiversity in cities. It has been written for national focal points, departments and ministries dealing with the urban environment to provide practical advice on supporting biodiversity action at the local level. With nearly 50 interesting case studies from around the world, it provides a consolidated series of actions toward implementing the COP10 Plan of Action. This publication also complements ICLEI's Local Action for Biodiversity Guidebook, which demonstrates how local authorities can incorporate biodiversity into urban planning and management.

As the world's premier sites of innovation, cities play a crucial role in reversing the loss of biodiversity. And as cities are some of the biggest beneficiaries of biodiversity and ecosystem services, their citizens – particularly the poor -- and their economic activities are inextricably linked to the wider urban environment. The interest of cities in the biodiversity agenda is growing fast, and we must seize this opportunity to make them more effective actors in the implementation of the Convention. It is my hope, therefore, that this guidebook will inspire national governments to achieve their targets for 2020. There is no time to lose.

Joan Clos
Under-Secretary General and Executive Director

On October 29, 2010, in Nagoya, Japan, the 193 national governments of the Convention on Biological Diversity adopted a decision with deep strategic implications: basically, the Parties recognize that they will not be able to meet the ambitious goals defined in the new 2011-2020 Strategic Plan of the Convention without the effective help of their sub-national and local authorities. Faced with the steep rate of biodiversity loss which jeopardizes the chances of achieving most of the Millennium Development Goals, Parties have decided to invite sub-national and local governments to help them, involve them when revising their national biodiversity strategies and action plans, and include their achievements in their regular reporting duties to the Convention.

The 2011-2020 Plan of Action on Subnational Governments, Cities and Other Local Authorities for Biodiversity adopted at COP 10 defines the ways and means for collaboration between levels of government, proposes a governance system, a monitoring and reporting structure, provides indicative activities and suggested fundraising mechanisms for Parties. The Plan reflects a 4-year long outreach and consultation process with Parties, networks of local authorities such as ICLEI, NGOs and many UN agencies including first and foremost UN-HABITAT, an active member of the CBD Global Partnership on Cities and Biodiversity since 2007. The present publication is part of our concerted effort to provide Parties, sub-national and local governments with guidelines and best practice cases to implement this historical decision. While ICLEI's excellent "Local Action for Biodiversity Guidebook" provides all the necessary information for local authorities to incorporate biodiversity into urban planning and management, this guidebook is intended to advise national governments on how to mobilize and support their sub-national and local governments to help achieve the 2020 targets of the Convention, improve the quality of life of their citizens and bring biodiversity back into cities. In this light, I commit the Secretariat to continue working with UN-HABITAT and many others on this important subject – as we know, the campaign for life on Earth will be won, or lost, at the local level.

Dr. Ahmed Djoghlaf
CBD, Executive Secretary


Photo Credit: UN-HABITAT

1 Introduction

Background

Loss of biodiversity is one of the world's most pressing crises. Apart from its intrinsic value, biodiversity matters because it sustains the ecosystem services upon which human societies depend. According to the recently published Global Biodiversity Outlook 3, despite the 2010 target to significantly reduce the rate of the loss of biodiversity, we continue to lose the diversity of living things by every measure.

It is estimated that the current species extinction rate is between 1,000 and 10,000 times higher than it would naturally be[1], largely as a result of human activities such as habitat destruction.

As noted in the Millennium Ecosystem Assessment, this loss has been substantial and largely irreversible, with some 10 to 30% of mammal, bird and amphibian species currently threatened with extinction.

Human activities associated with cities such as converting natural areas to farming and urban development, introducing invasive alien species, polluting or over-exploiting resources such as water and soils and harvesting wild plants and animals at unsustainable levels all play a disproportionately influential role in the loss of species and their habitats.

"Biodiversity is the variety of life and its processes; and it includes the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur".

The Convention on Biological Diversity (CBD) defines biodiversity as "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems" (Article 2, CBD).

The Convention on Biological Diversity is one of the three "Rio" conventions along with the United Nations Convention to Combat Desertification (UNCCD) and the United Nations Framework Convention on Climate Change (UNFCCC). It is also one of six biodiversity-related conventions with the other five being: the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Wetlands of International Importance (Ramsar), the Convention on Migratory Species (CMS), the International Treaty on Plant Genetic Resources for Food and Agriculture and the UNESCO World Heritage Convention.

Each country that signs one of these conventions, becoming a Party to that convention, has a responsibility to respect the objectives and provisions of these multilateral agreements and to adjust its own domestic legislation to ensure the conventions are implemented in their own countries.

Although cities occupy just 2% of the Earth's surface[2], they are home to more than half of the world's population, and they use 75% of the world's natural resources. They are also responsible for 70% of all the waste produced globally[3].

The ecological footprint[4] of city dwellers clearly extends beyond the boundaries of urban areas. This is most true of urban residents in the developed world whose environmental impact is disproportionately high. For example, the average North American living in a city such as Boston or New York has an ecological footprint of 8.4 hectares which dwarfs that of the average person in India, whose footprint is just 1.98 hectares.

Furthermore, the planet is urbanizing at an unparalleled rate. The United Nations estimates that, by 2030, almost 5 billion people worldwide will live in cities which is more than double the total in 1995[5]; of them, two billion will be living in slums[6].

Decision IX/28 of the 9th Conference of the Parties to the Convention on Biological Diversity encourages Parties to recognize the role of cities and local authorities in their national strategies and action plans, to integrate biodiversity considerations into urban infrastructure development, to build the capacity of local authorities to assist in the implementation of the CBD decisions, and to report on local action on biodiversity.

The number of highly urbanized zones or megalopolises continues to grow and in 2007 there were 22 cities with more than 10 million inhabitants, and another 400 with more than 5 million. The majority of these "megacities" are and will continue to be in the developing world where resources are strained.

Also noteworthy is the growth of small and medium cities and the rapid urbanization of rural settlements which often encroach into valuable agricultural land or important natural habitat[7]. If not managed adequately, the current activities and growth of especially the world's urban population will continue to accelerate the unprecedented loss of our planet's biodiversity.

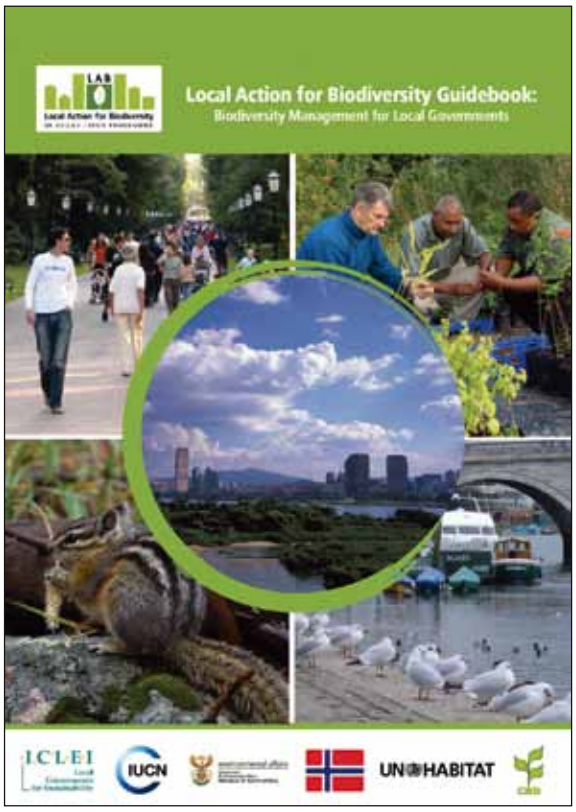
Recognizing that many of the key drivers of this loss are human activities in urban areas, the Global Partnership on Cities and Biodiversity was formally established at the International Union for Conservation of Nature (IUCN) World Conservation Congress in October 2008. This partnership brings together key United Nations (UN) agencies — the Secretariat of the Convention on Biological Diversity (SCBD), UN-HABITAT, United Nations Environment Programme (UNEP) and United Nations Educational, Scientific and Cultural Organization (UNESCO) - international organisations, including ICLEI-Local Governments for Sustainability and the International Union for Conservation of Nature (IUCN), and academic networks (URBIO, URBIS), with the aim of supporting local authorities in meeting the three objectives of the CBD: conserving Earth's biodiversity, sustainably using its components and ensuring the fair and equitable sharing of its benefits.

While Parties are the primary implementers of a Convention, local authorities are increasingly playing a complementary and growing part in the achievement of the CBD objectives.

Working with different arrangements: Memorandum of Understanding between the Province of Manitoba and the City of Winnipeg

In Canada, municipal and environmental affairs fall under provincial jurisdiction so provincial governments are full partners in the Canadian Biodiversity Strategy and have an important role in raising awareness and building capacity at the local level.

The City of Winnipeg and the Province of Manitoba signed a Memorandum of Understanding (MoU) to agree to work cooperatively with other stakeholders and levels of government to identify "areas of mutual interest and opportunities for collaboration" in the conservation, restoration and management of natural areas and habitats. A first of its kind in Canada, this MoU recognizes the interconnectedness of actions being taken at all three levels - national, provincial and local-and the need to develop mechanisms for enhanced dialogue and coordination.



As the world continues to urbanize, cities are increasingly centres of population, consumption, innovation and decision-making power. Local authorities therefore play a crucial role in biodiversity conservation and restoration: they design and implement land-use planning and zoning tools, produce urban development and infrastructure guidelines, licence businesses provide a panoply of services from water and sewerage management and waste disposal to recreation and housing, promote investment and conduct public education and awareness campaigns all of which have direct effects on biodiversity within and beyond their borders. Furthermore, urban biodiversity is often the only opportunity many city inhabitants have to experience and appreciate nature.

With local knowledge and close community ties, local authorities are ideally placed to take positive action at the local level to protect our natural resources for the future. Successful biodiversity conservation will depend on the close coordination of, and open communication between, different levels of government from national to sub-national to local.

There is no single solution to the crisis of biodiversity loss, as each country faces different challenges in biodiversity conservation and management, and each country functions with different types of government structures and different relationships between levels of government.

Sometimes responsibility for local government rests with the sub-national level, as is the case in Canada, Germany, and Mexico. Sometimes, as in Brazil, there is a more direct connection between the national government and cities and towns. Or, as in the French example, there are three sub-national government levels. For this reason, *Supporting Local Action for Biodiversity: the Role of National Governments* offers the reader examples of best practice that reflect the variety of institutional and legislative arrangements that exists, from a range of urban contexts.

Supporting Local Action for Biodiversity: the Role of National Governments[8] was conceived to assist CBD national focal points as well as other departments or ministries involved in areas that influence environmental and biodiversity management and protection such as housing, land-use development, transportation, finance and so on to encourage and support the critical contribution of local authorities in implementing the CBD. To achieve this, *Supporting Local Action for Biodiversity: the Role of National Governments* presents biodiversity decision-makers at the national level with practical information and advice on how to support and encourage biodiversity action at the local level.

Supporting Local Action for Biodiversity: the Role of National Governments is intended to complement the publication entitled *Local Action for Biodiversity Guidebook: Biodiversity Management for Local Governments*, which was produced by ICLEI and IUCN, members of the Global Partnership on Cities and Biodiversity, under their Local Action for Biodiversity (LAB) Programme. That publication is designed to help practitioners working at the local level to improve the

way in which biodiversity is managed within and beyond their jurisdictions.

This guidance document is organized in three chapters.

Chapter 1: Introduction

This describes the need for cooperative action from all levels of government to halt biodiversity loss; the influential role national governments can play in encouraging and supporting local authorities in achieving this goal; and a set of effective legislative, technical, financial and policy instruments available to national government decision-makers working to preserve and restore nature in urban areas.

Chapter 2: Understanding cities and biodiversity

This describes biodiversity in a local government context, the wealth of ecosystem goods and services that nature provides to people living in urban areas, and the impact of urban activities on the natural world and ecosystem functioning.

Chapter 3: Biodiversity action areas

This presents:

- examples of national-level (or federally supported) policies, programmes and laws that promote local action for biodiversity
- examples of successful cooperation between government levels and government ministries towards local action on biodiversity
- challenges in supporting cities in biodiversity conservation

The guidebook draws on information from a variety of sources. These include experience and lessons learned in CBD National Reports (NR), biodiversity reports produced by the *21 LAB Pioneer Local Governments[9], a variety of publications in the literature, internet searches and interviews with actors working at the national and sub-national levels.

Ten actions national governments can take for local action on biodiversity

The list of actions below summarizes lessons from the best practice examples presented in Chapter 3 of this document and is based on discussions with specialists and government officials working to protect the natural world. They are ten actions that can be started today.

Action One – Send the Message that Biodiversity Matters (Raising awareness and education)

Convey the message to all levels of government and to the public of the crucial role biodiversity plays in creating a healthy and just economy and society.

Action Two – Create a Strong Regulatory and Institutional Framework

Make biodiversity a high priority at all levels of government by legislating and institutionalizing the requirement to consider biodiversity in government operations and by providing the necessary financial and technical support. Adopt enabling legislation to give a broader role and responsibilities to local authorities in promoting social, economic, and environmental wellbeing of communities.

Action Three – Facilitate Mainstreaming of Biodiversity into Local Decision Making and Operations

Encourage and enable government agencies, local authorities and developers to integrate biodiversity considerations into all aspects of local planning, decision-making and functioning from regulations, plans, programmes, and urban design guidelines to policies such as public procurement. It's vital to ensure that all local authorities have a biodiversity strategy and action plan in place and a "Biodiversity Champion" among their senior management who has responsibility for implementing the strategy and plan.

Action Four – Collaborate and Coordinate with Local Authorities

Recognize that, as the level of government closest to citizens and whose operations have the most immediate impact on the natural world, local authorities must be seen as a critical partner in stemming the loss of biodiversity globally.

The need for an integrated, holistic, ecosystem approach to biodiversity protection calls for an open two-way flow of communication between national and local governments as well as coordination between environmental and other planning sectors, and different tiers of government.

Action Five – Foster Decision Making at all Ecological Scales

In recognizing that most species, ecological communities and ecosystems depend on a much larger domain, foster and support coordination and cooperation of biodiversity protection and management activities at the regional and international scale.

Action Six – Provide Training and Capacity Building

Build the capacity for biodiversity management at the local level by providing the necessary tools - information sharing networks, guidance, training, and technical, financial and human resources - and making them accessible and affordable. Maximize resources and ensure sustainability by setting up an easy-to-follow process and a centralized body with specialized knowledge and expertise for guidance and technical advice to local authorities, thereby guaranteeing sustainable access to information and resources whether times are good or bad.

Action Seven – Ensure Access to Information

Ensure that local authorities have access to the up-to-date information they need for biodiversity conservation and management including their country's national biodiversity strategy and action plan, CBD National Reports and regional biodiversity strategies.

Action Eight – Encourage Participation and Partnerships
Create opportunities for greater participation and empowerment of all stakeholders - local authorities, community and non-profit groups, the private sector and business and citizens

Action Nine – Recognize Leadership and Innovation, and Support Pilot Projects

Recognize leadership and proactive engagement of local authorities for biodiversity through awards, labels and other incentives. Take the next step by adding to activities like data collection, reporting and planning, by encouraging the development and implementation of on-the-ground projects at the local level. To this end, national governments can provide templates and best practices of projects that have been tested and work for a variety of contexts.

Action Ten – Provide Financial Support for Biodiversity Action

Ensure that local authorities have the financial resources to assist in the implementation of the CBD, particularly when required by national biodiversity-related legislation, strategies and plans.

Photo Credit: UN-HABITAT/ L Petrella

2 Understanding Cities and Biodiversity

Urban biodiversity

Urban areas include natural and semi-natural habitats on the one hand and artificial or created habitats on the other. These spaces and the biodiversity contained within them, play an important role in maintaining the overall quality of life in the city. Nature provides ecosystem services vital to human well-being such as the provision of food, fibre, fuel, medicine and clean air and water; the regulation of climate, water and the spread of disease and protection from natural disasters not to mention the cultural, aesthetic, recreational, and educational benefits that people hold dear.

The poor tend to be particularly vulnerable to localized environmental threats such as poor air quality, inadequate sanitation and lack of safe water so their direct dependence on functioning local ecosystems is even greater[10]. Too often, these ecosystem services are not considered in urban planning and development decisions or given economic value.

Consideration of biodiversity in planning should go beyond the protection of threatened and endangered species and habitats. It should embrace the idea that it is better to build or conserve a pond than to store storm water in underground tanks. Or that grass verges are better along roads than tarmac pavements.

Furthermore, healthy and sustainable ecosystems create economic benefits by, among other things, increasing land value through improved landscape amenity, by providing a valuable tourism and recreation resource, and by absorbing costs that would otherwise be borne by the local government. In the eThekwini Metropolitan Municipality (Durban), South Africa, environmental goods and services were valued in 2003 at R3.1 billion per annum (excluding the contribution of the tourism sector which is R3.5 billion per annum)[11]. In short, sound local environmental policy is also sound long-term economic policy and good social policy[12].

Cities tend to be in areas that are biologically rich and diverse such as river valleys and flood plains[13] and some contain highly significant and uncommon habitats.

Garry oak woodlands – the most diverse terrestrial ecosystem of the province of British Columbia, Canada

Ecological "goods and services" underpinned by biodiversity include:

- Food, fuel, fibre, and medicine
- Shelter and build ing materials
- Air and water purification
- Waste detoxification and decomposition
- Climate regulation
- Moderation of floods, droughts, temperature extremes and the forces of wind
- Generation and renewal of soil fertility
- Pollination of plants, including many crops
- Pest and disease control
- Cultural and aesthetic benefits
- Ability to adapt to change

– are found in its capital, Victoria[14]. Of the 21 national vegetation types in South Africa that have been assigned the highest conservation status of Critically Endangered, 11 occur with the city of Cape Town, of these, three occur nowhere else but within the city borders.

Cities also manage urban parks, national or regional parks, greenbelts and important protected areas, sometimes with significant biodiversity. The two Municipal Environmental Protection Areas, 33 urban municipal parks, seven natural parks and the Biosphere-Reserve-classified greenbelt of São Paolo, Brazil, make up 21% of the city's territory and are home to 58 wild mammal species, 47% of them endemic, and 288 species of bird. Many urban areas are also included within the 34 biodiversity hotspots identified by Conservation International[15]. The fact that cities are frequently the site of some of the world's most important biodiversity, is one reason why they need to be recognized as a critical partner for the full implementation of the CBD, including its Programme of Work on Protected Areas.

Furthermore, urban biodiversity is often the only opportunity most city inhabitants have to experience and appreciate nature. Urban areas, according to the vision in the National Biodiversity Strategy of Japan 2010, contain spacious green areas that include forests, and are dotted with smaller nature spots that allow children to play on the soil and touch living things.

Biological diversity in city parks and green spaces has also been shown to have measurable mental and physical health benefits for humans such as enhanced recovery time of patients, reduced blood pressure and feelings of happiness. Urban trees improve air quality, lower air temperature and reduce the effects of greenhouse gases among other benefits.

The link between urban activities and biodiversity loss

Although cities maintain more habitat than if their populations were spread across the land, they have

Case Study 1

East London Green Grid: Valorizing Urban Trees and Green Spaces

Cities house a collection of street trees, urban parks, recreational areas, semi-natural spaces and, sometimes, agricultural land. We need to begin to see these urban green spaces as a single asset with a range of aesthetic, social, economic and ecological values.

This is the approach of the Greater London Authority (GLA) embodied in the East London Green Grid Framework, which "aims to create a network of interlinked, high-quality open spaces that connect town centres with public transport nodes, the Green Belt, the Thames and major employment and residential areas". The GLA contends that a well-maintained Green Grid will..." help to promote healthy living and community spirit through access to recreational and cultural opportunities, while at the same time promoting biodiversity and acting as a 'green lung' for East London". Within the Green Grid there is potential to create a wide variety of landscapes. These might include a combination of deep green zones where land is given over to wilderness; areas for sport and more intensive recreation; and quiet escape areas mixed with agriculture. Developing the Green Grid will also make East London more resilient in the face of predicted climate change".

Photo: East London Green Grid Primer. Permision to use granted by M. Thomas

One of the six Green Grid Areas across East London

For more information see Design for London's website: www.designforlondon.gov.uk/what-we-do/#/east-london-green-grid.

profoundly disproportionate ecological "footprints", demanding resources from surrounding areas and much further afield, and releasing pollution into the air and water. Biodiversity in cities therefore has a critical educational role to play — a second and perhaps even stronger reason for national governments to better support the efforts of local authorities to carry out their functions with ecological considerations in mind.

Biodiversity loss in urban areas is mainly caused by the following:

Loss, degradation and fragmentation of habitats due to land use change - whether for urban and industrial expansion, agriculture, infrastructure or tourism - is undoubtedly the main cause of biodiversity loss in cities, towns and urban settlements as it is elsewhere. Moreover, urban sprawl increases the proximity of urban areas to valuable natural areas, increasing indirect human impacts such as noise, disturbance and pollution. In southern California, sprawling development has wiped out 90% of the coastal sage ecosystem, resulting in a drastic loss of native species of birds and small mammals[16].

The construction of road and highways can have a particularly negative impact on wildlife. Plans to construct a commercial highway across Tanzania's Serengeti National Park will fragment one of the world's most celebrated and unique ecosystems, disrupting the massive migration of over 1.3 million wildebeest and zebra, which has occurred annually for thousands of years.

Pollution - damages ecosystems by making an environment toxic to all or certain species. Many urban activities pollute the air, water and soils upon which biodiversity depends. Industrial and urban run-offs can pollute wetlands, rivers and even aquifers, adversely affecting the aquatic food chain and the diversity of fish and water bird species. Compounding the problem is inadequate sewer and storm water infrastructure in urban areas in many developing countries and aging, deteriorating infrastructure facing many developed nations.

Invasive alien species which are mainly introduced through transportation paths in cities can alter the structure and chemistry of ecosystems and out-compete native species. In many parts of the world where the supply of fresh water is a concern, invasive plants pose a direct threat to water security in urban areas.

The South African government implemented its Working for Water Programme (see Action Area Nine), employing people to rid waterways and wetlands of invasive plants, such as the water hyacinth. The IUCN estimates that populations of this South American native plant, which can double in as little as 12 days, have dramatically reduced biological diversity in aquatic ecosystems[18].

Overuse of resources. The consumption behaviour of urban residents in developed countries tends to have global impact while in the developing world urban inhabitants have a smaller, but strong local impact on resource use such as utilising wood as fuel. A significant threat to biodiversity conservation in some developing countries is the illegal trade of wild animals. In Brazil, for example, it is a US$2-billion-a-year industry, removing about 38 million animals from nature each year[19].

Case Study 2

Singapore: Central Catchment Nature Reserve

Occupying a 455ha area in the centre of Singapore is the Central Catchment Nature Reserve. The Reserve houses several recreational sites to encourage public appreciation and understanding of nature and it is home to over 1,600 species of flora and 500 animal species, some of which, like the Banded Leaf Monkey, are critically endangered.

For more information see Design for London's website: www.designforlondon.gov.uk/what-we-do/#/east-london-green-grid.

Case Study 3

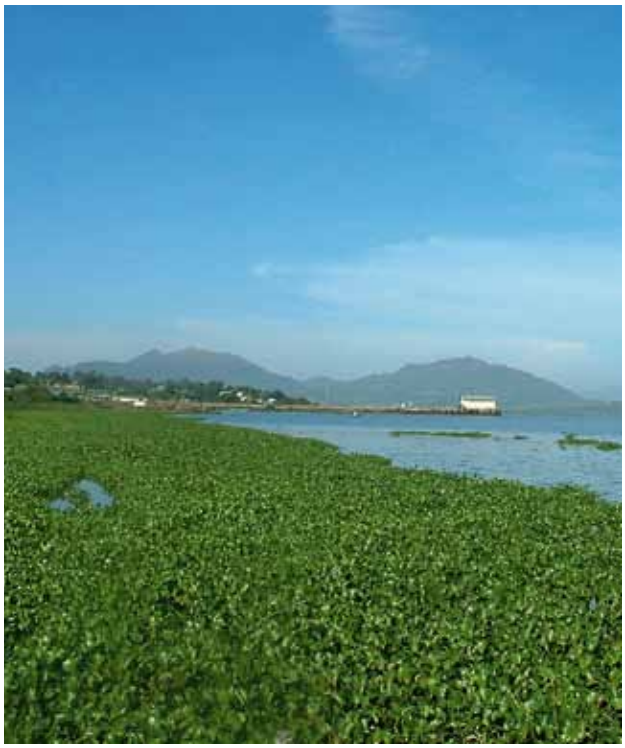
Brazil: Sustainable Timber Purchasing Policy

Purchasing decisions and policies made by local authorities can have impacts on natural resources, both positive and negative, felt many kilometres away. Recognizing that local timber purchasing practices were largely responsible for the deforestration of the Amazon rain forest, Greenpeace is working in partnership with city governments in Brazil such as the City of São Paulo to institute policies which have significantly curbed illegal logging. Greenpeace's Friends of the Amazon Cities program elicits commitments from municipalities to only use timber of legal origin in their construction projects and public tenders.

Uncontrolled use of natural spaces. Recreational pressures can damage fragile habitats. Uncontrolled access into natural areas by humans and pets in urban surroundings is a threat to biodiversity that is more predominant in cities than most other areas, and can cause disturbance to ecosystems, soil compaction and introduction of weeds and diseases into natural areas.

Negative public perception of open spaces left natural. In urban areas there can be a conflict between policies to leave natural areas untouched for the ecological services they provide such as wildlife habitat and corridors, water conservation and storm water management and residents' perceptions that these areas can be havens for crime and other anti-social behaviour and fears about wildlife.

Climate change resulting from human activities is predicted to be one of the major drivers of species extinctions of this century[20]. It is already having a significant impact on species and ecosystems around the world. According to the Intergovernmental Panel on Climate Change (Fourth Assessment Report), approximately 20

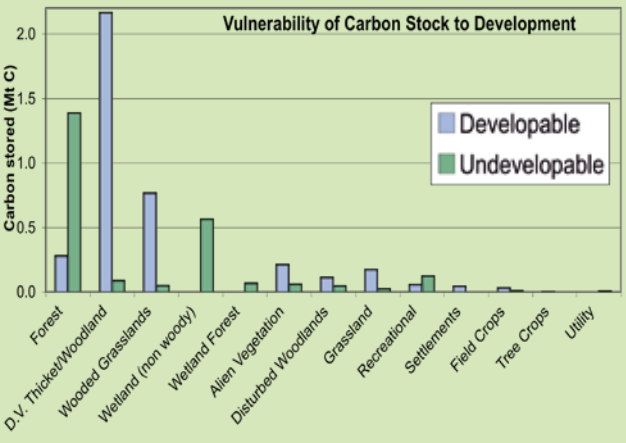


Case Study 4

eThekwini Metropolitan Municipality, Durban, South Africa: Assessing the Mitigation Advantages of Maintaining the Open Space System Intact

The Durban Metropolitan Open Space System (DMOSS) contains a variety of ecosystems that include grasslands, woodlands, wetlands and forests, both publically and privately owned. Natural spaces in urban areas can play a key role in climate change adaption and mitigation by storing carbon that would otherwise be released as carbon dioxide, a greenhouse gas.

With help from the University of Stellenbosch, the Environmental Planning and Climate Protection Department conducted an open space carbon storage inventory of the DMOSS area to assess its contribution to climate change mitigation and how effectively individual ecosystem/habitat types store carbon. It was found that DMOSS stored about 6.6 million tons of carbon and sequestered 8,400 to 9,800 tons of carbon each year. Forests and wetlands are the best at storing carbon[1].



1 eThekwini Municipality and ICLEI Africa Secretariat (2007) LAB Biodiversity Report: Durban.

to 30% of plant and animal species are "likely to be at increased risk of extinction" if greenhouse gas emissions remain at or above current rates.

Global and local changes in weather patterns and increases in extreme weather events will disrupt wildlife and the natural environment. As argued in the GBO3, "the linked challenges of biodiversity loss and climate change must be addressed by policy makers with equal priority and in close coordination"[21].

Pressure on freshwater resources is linked to rising human populations, particularly in urban areas, evolving consumption and higher energy needs and the effects of climate change. This leads to over abstraction, the 'thirst' for energy heavy technologies associated with desalination, the building of reservoirs and dams, and hydrological, and consequently biodiversity, impacts encountered well beyond the urban area.

The regions most vulnerable to domestic water shortages include those where water is already limited, population is growing rapidly, urban centres are spreading and the economy is weak[22].

Local authorities have at their disposal a number of planning, financial, and regulatory instruments that can be used for biodiversity conservation and management such as:

- Local biodiversity strategies and action plans
- Local government plans including plans for land-use, housing development, environmental management, infrastructure and economic development
- Zoning and land-use by-laws
- Public consultation
- Financial incentive measures including tax incentives, property tax rebates, grants
- Non-financial incentive measures including recognition and local award schemes, training and technical support
- Market-based incentives such as procurement policies, biodiversity offsets and sustainable ecotourism
- Disincentive measures to discourage activities that are harmful to biodiversity such as imposing fines and penalties
- Environmental levies to raise revenue for biodiversity conservation initiatives and land purchase
- Acquisition of conservation worthy land
- Establishment of protected natural spaces
- Development concessions
- Conservation covenants or legally binding voluntary agreements that limit types of uses or prevent development on a private property to protect its biodiversity

Summarized from: Local Action on Biodiversity Guidebook: Biodiversity Management for Local Governments.

Photo Credit: UN-HABITAT

3 Biodiversity Action Areas

Action Area One — Raising awareness and education

A major obstacle to the mainstreaming of biodiversity planning at the local level is the lack of awareness on the part of both public officials and citizens of the value and importance of biodiversity and the essential ecosystem services its supports. It is no surprise that biodiversity conservation and management is a low priority for many local authorities.

The low level of awareness is closely connected to the lack of training and education of public officials and personnel, extending to both the importance of biodiversity for maintaining human well-being and the ability to identify or create opportunities to protect or enhance it. Another contributing and allied factor is the resistance to change in the public sector, on part of elected officials, administration and employees.

Photo Credit: UN-HABITAT/ K.Buhren

Action 1.2: Integrate biodiversity conservation values into communication, education and public awareness programmes.

Case Study 5

Canada: The Cities and Biodiversity Engagement Strategy

Preliminary research indicates that there are a growing number of Canadian municipalities that are implementing initiatives to protect biodiversity. ICLEI Canada, with support from Environment Canada, has undertaken a multi-phase initiative to develop a cities and biodiversity engagement strategy and prepare case studies of initiatives undertaken by municipalities leading the way in nature protection.

The Cities and Biodiversity Engagement Strategy reviews how local governments and associated stakeholders are currently addressing biodiversity, their level of awareness and capacity to take biodiversity actions, and makes recommendations for improvement. The second phase -Canadian Urban Biodiversity Case Study Series- will share biodiversity initiatives across the country to further engage municipalities as partners in reducing the rate of biodiversity loss in Canada.

For further information visit:
http://www.iclei.org/index.php?id=11305.

Case Study 6

France: The Local Biodiversity Atlas

In 2010 the French Ministry of Ecology, Energy, Sustainable Development and the Sea introduced a new initiative called the Local Biodiversity Atlas[1] (ABC) to help local authorities better understand, protect and enhance biodiversity in their jurisdictions.

ABC is coordinated at the regional level by the Regional Department of Environment, Land-Use Planning and Housing. Its objectives are to sensitize and mobilize elected officials, key stakeholders and citizens and to improve the quality of biodiversity knowledge.

The project aims to facilitate the integration of biodiversity into municipal policies. Interested municipalities apply to the project and, if successful, they receive a set of tools, including a packet of online sensitization and mobilization tools, the help of a regional sensitization and mobilization team, standards and templates to conduct inventories of local biodiversity, access to a national science platform based on the involvement of citizens and funding for training two to three young interns in biodiversity-related fields.

1 L'Atlas de la biodiversité dans les communes.

Photo credit: Florence Clap, IUCN France.

Commune de Saint André de Roquepertuis (Gard-France)

:For more details on this initiative see
.www.biodiversite.2010.fr

Germany/Japan: Hosts of a CBD event

Cities have also hosted meetings of the CBD Conference of the Parties (COPs) and the Cartagena Protocol, events that gather thousands of delegates and civil society representatives for several weeks and require local residents to assist and collaborate. To ensure a successful meeting and mobilize support, local authorities, in close cooperation with national governments, have invested in public awareness campaigns.

At COP 9 in Bonn, Germany, the city government promoted a successful campaign aimed at residents, proposing the concept of "diversity" taken broadly, as an element for resilience and social and economic strength, and using posters with charismatic megafauna to engage citizens. The main message was that as social and ethnic diversity is one of Bonn's (and Germany's) political strengths, biodiversity also allows nature to be resistant to climate change and other threats.

The city of Nagoya and Aichi Prefecture, in taking the same challenge, is using an equally compelling theme, "Life in Harmony, into the Future", building on Japan's traditional philosophy of balance and pertinence.

Action 1.2: Integrate biodiversity conservation values into communication,education and public awareness programmes.

A recent survey by the European Environment Agency found that two-thirds of EU citizens do not know the meaning of the word 'biodiversity', nor do they understand what the threats and challenges to its conservation are.

To change people's attitudes so that they consider biodiversity in their daily lives, it is important to make biodiversity relevant to people and to communicate a vision that describes our co-existence with and dependence on nature. Local communities are the natural arena for mobilizing and engaging the public. Recognizing this, many national governments have integrated the value of nature conservation into communication, education and public awareness programmes. Here are a few examples.

The CEPA (Communication, Education and Public Awareness) Toolkit was developed by the IUCN Commission on Education and Communication (CEC) for the Secretariat of the Convention on Biological Diversity. The toolkit is meant for CBD focal points and those to whom the implementation of a NBSAP is delegated. The toolkit offers information to update knowledge and skills with fact sheets, checklists and practical examples from all over the world. For any questions or suggestions about the CEPA toolkit, please contact cec@iucn.org.

For more information visit:
www.cbd.int/cepa/toolkit default.html.

Photo Credit: UN-HABITAT/ B.Oballa

Case Study 7

The United Kingdom: Breathing Places Campaign

Breathing Places is the campaign led by the British Broadcasting Corporation (BBC) to encourage millions of people across the UK to take action to maintain and enhance local biodiversity. It aims to accomplish this by raising the public's level of awareness of the importance of nature and wildlife to their daily lives by getting people involved in nature conservation and education events and activities enabled through an online Event Finder of some 10,000 "breathing places", to bring people close to nature.

The database was developed in collaboration with Natural England1 with contributions from hundreds of organizations participating in the campaign including government departments and agencies, county councils, environmental NGOs, schools and community groups. Visitors to the website (www.bbc.co.uk/breathingplaces/) can search the database by location for places to explore. Each window provides a map, legend to services and activities, and a description of the place's habitat(s) and species.

1 Natural England is England's government advisor on the natural environment. (http://www.naturalengland.org.uk)

An excerpt from the window for Lackford Lakes-Suffolk Wildlife Trust

"Lackford Lakes lie beside the River Lark and have been created from former gravel pits. The potential list of birds here seems never ending, with rarities like Black Necked Grebe occurring alongside more common species such as shelduck. A superb site for wildfowl in both winter and summer, Lackford attracts tufted duck, teal, pochard, gadwall, shoveler and goosander... Passing birds of prey include the majestic osprey, whilst buzzard and sparrowhawk can be seen regularly...This is one of the best places in Suffolk for kingfisher, and cormorant are often seen fishing at the sailing lake or roosting in the tall trees by the river. Almost any migrant bird can turn up - black terns are regulars but species like Little Egret and the more uncommon waders are also seen. The Visitor centre has a range of facilities to enhance your visit to Lackford Lakes including an information desk, gift shop, viewing gallery, light refreshments and toilets".

See: www.breathingplaces org/public/place_by_name/Lackford-Lakes-Suffolk-Wildlife-Trust?id=10600.

Photo Credit: Robyn Bromley

Case Study 8

Ireland: Notice Nature

Created by the country's Department of the Environment, Heritage and Local Government, Notice Nature is Ireland's public awareness campaign for biodiversity[1]. The aim of the campaign is to raise awareness of the importance of biodiversity and to encourage everyone to play their part in its protection.

The campaign's website (www.noticenature.ie/) provides visitors with a wealth of information and links, as well as special pages for children and information on invasive alien species. The website gives individuals and communities, public bodies, business, agriculture, tourism and construction sectors, ideas on actions they can take to protect biodiversity. For the construction industry, for example, Notice Nature identifies the impacts of construction projects on wildlife, plants and their habitats, and provides "Guidelines for the Protection of Biodiversity in Construction Projects". Guidelines have also been produced for the business, tourism and extraction industry sectors[2].

The initiative also provides opportunities for people to get close to nature such as the 80 looped walks developed by Fáilte Ireland with support from the Department of Community, Rural and Gaeltaeht affairs.

For the children's page visit; www.noticenature.ie/kids_area.html and for information on invasive alien species, see: www.noticenature.ie/Invasive-Species_Homepage.html.

1 Ireland also has a number of on-line national public awareness campaigns, including: the CHANGE campaign (www.change.ie) which offers information on climate change and practical advice on how to live with a reduced carbon footprint; and the ENFO website (www.enfo.ie) which provides information on Ireland's environment.

2 Pdf files are available for all four documents.

Action 1.3: Support museums and other institutions focused on biodiversity education and research

Many governments fund museums, botanical gardens and other institutions dedicated to educating people about the natural world.The Canadian Museum of Nature in Ottawa, Ontario, was opened to "connect people with nature" and accomplishes its mandate in two principal ways: sharing its collection of natural history objects and outreach programs including community-based research (see the Rideau River Biodiversity Project, Case Study 34).

Mainstreaming biodiversity into planning and development

Planning and developmental decisions made at the local level have direct biodiversity impacts yet national conservation priorities and objectives are not always transmitted to lower-tier governments. Real cooperation and synergy between the various decision-making levels - international, national, sub-national and local - is crucial to stem the loss of biodiversity.

The CBD Global Partnership on Cities and Biodiversity, supported by select Parties, proposes to complement Decision IX/28 of the CBD (on Cities, Local Authorities and Biodiversity) with a Plan of Action[23] on this theme to fully realize the potential benefits of coordinating government action on biodiversity.

There are a number of ways in which national government actors can engage cities and local authorities in the realization of national biodiversity strategies and action plans, support the development of local biodiversity strategies and action plans consistent with national strategies and action plans, and facilitate the adoption by cities and local authorities of plans, policies and practices that support the three objectives of the Convention. The conservationand enhancement of biodiversity should seek to become a multi-sector responsibility which facilitates improved human well-being.

To mainstream biodiversity considerations into decision making at all levels national governments must take a multi-pronged approach, which includes the development of a strong regulatory and institutional framework (Action 2), the provision of guidance for integrating biodiversity at the local level (Action 3) and the coordination of governance across sectors and geographic scales (Actions 4 and 5).

Photo Credit: UN-HABITAT/ L Petrella

Case Study 9

Canada: Urban BioKits

The Biosphère Environment Museum (www.ec.gc.ca/biosphere), located in Montreal, is an Environment Canada facility dedicated to environmental action and education. Last year, the Biosphère approached cities across Canada including Vancouver, Edmonton, Calgary, Regina, Montreal, Toronto and Halifax and held workshops to develop a series of Urban BioKits. Their aim is to encourage families, through interactive, outdoor activities, to discover the diversity of animals and plants in local urban spaces and natural areas.

There is also a Canadian Urban BioKit that can be used by families across the country to appreciate biodiversity in their own backyard and understand the importance of protecting it. The BioKits are available on a website (www.ec.gc.ca/biotrousses-biokits), which also offers participants an opportunity to provide feedback on the parks they visited and provides resources to incite participants to become involved in protecting biodiversity.

Action Area Two — Creating a strong regulatory and institutional framework

National legislation sets the framework for local governance. Effective enabling legislation can take many forms from a requirement for public authorities to mainstream biodiversity in their day-to-day functions to the devolution of responsibility for biodiversity protection to the local level. It lays the foundation for raising the level of engagement and awareness of public authorities at the local level.

Many governments have adopted national environmental legislation that provides a legal framework to protect and manage biodiversity in their territories such as Australia's Environmental Protection and Biodiversity Conservation Act 1999, and some give local authorities a clear statutory responsibility for protecting biodiversity on private land such as New Zealand's Resource Management Act.

Action 2.1: Make consideration of biodiversity in policy and decision — making a legal requirement for all public authorities

Action 2.2: Adopt legislation to encourage and ensure the preparation of biodiversity strategies and action plans for sub-national levels

Action 2.3: Adopt or revise laws to ensure that nature protection and enhancement is integrated into municipal planning legislation

Case Study 10

The United Kingdom: the "Biodiversity Duty"

One of the key priorities of the UK Biodiversity Action Plan and the 2007 framework document Conserving Biodiversity - the UK Approach is embedding proper consideration of biodiversity and ecosystem services in all relevant sectors of policy and decision-making.

Section 40 of the Natural Environment and Rural Communities Act 2006 gives legal effect to this aim in England and Wales by placing a statutory duty on all public authorities, including regional bodies and local authorities, schools, government offices, public health and social welfare authorities, to have regard for biodiversity conservation during the exercise of their functions. In the UK, this is commonly referred to as the "Biodiversity Duty".

A May 2010 review1 of the impact and effectiveness of the duty published by Defra concluded that, although the duty is not the only driver influencing public authorities' work relating to biodiversity conservation, it has been responsible for much work in this regard. Furthermore, it found that better integration of biodiversity across the whole suite of public authorities' functions is one of the main areas for improvement.

For more information on the "Biodiversity Duty" see: www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/duty.aspx.

1 For more information consult the final report: Entek UK Ltd. (2010) Defra CTX 0811: Review of the Biodiversity Duty contained in Section 40 of the NERC Act 2006. Available at: www.biodiversitysouthwest.org.uk/docs/BiodiversityDutyReviewFullReport.pdf

Case Study 11

Japan: Article 13 of the Basic Act on Biodiversity

Article 13 of the Basic Act on Biodiversity describes fundamental policies on the conservation and sustainable use of biodiversity, and promotes the comprehensive and systematic implementation of biodiversity-related policies. The Act obliges prefectural and municipal governments to prepare local biodiversity strategies and action plans.

As a result, local biodiversity strategies or plans have been developed in several sub-national governments, such as the prefectures of Shiga, Chiba, Nagasaki, Aichi, Saitama and Hyogo as well as the city of Kitakyushu.

France has also adopted legislation[1] aimed at ensuring the development of regional and local biodiversity strategies and their alignment with national strategies.

1 Article 23 of Loi no. 2009-967 du 3 août 2009 de programmation relative à la mise en oeuvre du Grenelle de l'environnement. For the text in French see: www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000020949548.

Case Study 12

South Africa: Integrated Development Planning

All local authorities in South Africa must prepare a five-year Integrated Development Plan which is reviewed annually in consultation with the community and other stakeholders. The Integrated Development Plan aims to coordinate the work of local and other spheres of government in a coherent plan to improve the quality of life of all people living in an area. As such, each municipality's Plan has to be aligned with, among other things, provincial Environmental Implementation Plans and national environmental legislation such as the National Environmental Management: Biodiversity Act (2004)[1].

This Act requires that municipalities align their Integrated Development Plans with the national biodiversity framework and the applicable bio-regional plan. Some feel this system is problematic in that local authorities are responsible for implementation but have limited funding and power to legislate.

For a guide to Integrated Development Plans, see: www.etu.org.za/toolbox/docs/localgov/webidp.html.

1 For a copy of the Biodiversity Act see: http://faolex.fao.org/docs/pdf/saf45083.pdf.

Local authorities often lack sufficient legislative power to implement biodiversity protection measures within their jurisdictions. The city of Seoul, South Korea, identified the lack of consideration of the natural environment in urban planning and lack of legal mechanisms to protect biodiversity as two important causes of biodiversity loss within Seoul[24].

Action 2.4: When appropriate, delegate the responsibility to protect and manage natural resources and spaces at the local level from national agencies to local authorities, accompanied by relevant funding

Environmental management has become increasingly decentralized over the past few decades, giving local authorities greater responsibilities in this domain[25]. In the United Republic of Tanzania, one of the national government's strategic actions with regard to mainstreaming environmental issues into planning and administration, is to "empower local governments through decentralization and the devolution of central government powers". This action gives local authorities the responsibility for environmental oversight through Village and District Environment Committees[26].

Similarly, in Kenya, game reserves are now under the management of County Councils and in Ecuador, the federal Ministry of Tourism and Environment has transferred management rights of the El Cajas National Park to the local level, creating the El Cajas National Park Municipal Corporation (Corporación Municipal Parque Nacional Cajas) to plan, manage, develop, protect, and control the site[28].

Below are some additional examples of the devolution of conservation management responsibilities to local authorities.

Photo Credit: UN-HABITAT

Case Study 13

Philippines: Puerto Princesa Subterranean River National Park

Located just outside the city of Puerto Princesa, Palawan, Philippines, the Puerto Princesa Subterranean River National Park is the first national park devolved to and successfully managed by a local authority. Since 1992, when the national government granted management of the National Park to the City Government of Puerto Princesa, the site has been recognized as an example of best practices for biodiversity conservation and sustainable tourism.

The Puerto Princesa Subterranean River National Park contains the world's longest navigable underground river, a full mountain–to-sea ecosystem and some of the most important forests in Asia. It is a UNESCO World Heritage Site and recognized as a core part of the Palawan Island Biosphere Reserve.

For more information visit:
www.puerto-undergroundriver.com/.

Case Study 14

Ecuador: Decentralized System of Efficient and Participatory Environmental Management

The government of Ecuador has set up a decentralized system of efficient and participatory environmental management *(Sistema Descentralizado de Gestión Ambiental (SNDGA) eficiente y participativo)*. This aims for a transfer of competencies from the national government to local authorities in areas related to forest management, forestry, forest monitoring, wildlife management, and environmental quality. This system is part of the national Environmental Management Law.

The Ministries of Tourism and of Environment are the governing bodies that coordinate and supervise the decentralization processes. However, the program has been weakened by political difficulties[1].

1 Ecuador's 4th National Report to the CBD, 118.

Action 2.5 Remove legal barriers to the conservation and enhancement of biodiversity at the local level

It is also important to review existing environmental laws to remove legal barriers to the implementation of biodiversity action. In Namibia, for example, integrating biodiversity considerations into local level decision-making is made challenging by the centralization of the National Biodiversity Strategy and Action Plan and the lack of laws such as a Parks & Wildlife Management Bill to mandate capable local authorities to manage biodiversity in their jurisdictions.

Photo Credit: UN-HABITAT

Local Action for Biodiversity (LAB) is the first biodiversity program to be conducted by ICLEI-Local Governments for Sustainability, and represents a partnership between ICLEI and the IUCN. Between 2006 and 2009, 21 local government bodies from around the world from Amsterdam to Curitiba to King County piloted LAB by taking part in an intensive, coordinated process of biodiversity assessment, planning and implementation underpinned by political commitment through the signing of the internationally recognized Durban Commitment.

In recognition of the critical role of local governments in global biodiversity conservation, the aim and result of this process was to strengthen biodiversity management in these participating cities. LAB has now expanded from a pilot project into a full programme.

For more information visit the Local Action for Biodiversity website: www.iclei.org/lab.

Case Study 15

Japan: Guide to the Local Biodiversity Strategy

In 2009 Japan's Ministry of the Environment issued the Guide to the Local Biodiversity Strategy, which is based on the Biodiversity Basic Law and the Third National Biodiversity Strategy of Japan. The guidance aims to provide local government officials with a practical approach to biodiversity conservation. It describes the need for local biodiversity strategies and a framework for planning, promotion, and project management, as well as relevant methods.

For more on the Guide see:
www.japanfs.org/en/pages/029583.html.

Action Area Three — Facilitating mainstreaming of biodiversity into local decision-making and operations

Councils, communities and other agencies seek practical guidance on how to tackle biodiversity management at a local government level. A great starting place is the ICLEI *Local Action for Biodiversity Guidebook: Management for Local Governments.*

This publication is designed to help practitioners in local government to plan for and manage their local biodiversity drawing on the experiences of 21 LAB Pioneer Local Governments.

Many national governments have developed guidance materials to ensure that local biodiversity strategies and action plans are in line with national strategies and to help actors at the local level integrate biodiversity concerns into planning and development projects.

Action 3.1: Provide guidance for the development of local biodiversity strategies and action plans and mainstreaming biodiversity considerations into local decision-making

Local biodiversity strategies and action plans are the local level version of national biodiversity strategies and action plans in that they detail broad strategies and

Ireland: Local Biodiversity Action Plan Process

Local biodiversity plans are required under Ireland's National Biodiversity Plan, adopted in 2002. A guidance document, Guidelines for the Production of Local Biodiversity Action Plans, was prepared by the Department of the Environment, Heritage and Local Government in cooperation with Heritage Council to assist local authorities.

The process is laid out as follows:

- Establish a Biodiversity Working Group
- Promote and raise awareness of the conservation of biodiversity
- Consult with individuals and organizations
- Assess the role and impacts of the local authority in the conservation of biodiversity
- Establish a database on local biological diversity
- Prepare an audit of the local biodiversity resource
- Identify information gaps
- Establish priorities and set targets
- Produce draft Local Biodiversity Action Plan
- Agree and publish the Local Biodiversity Action Plan
- Monitor and review

Available at: www.heritagecouncil.ie/wildlife/heritage-council-initiatives/local-biodiversity-action-plan/.

Case Study 16

Spain: The Local Government Network + Biodiversity 2010

The Local Government Network + Biodiversity 2010 (La Red de Gobiernos Locales +Biodiversidad 2010) is a collaboration between the federal Ministry of the Environment and Rural and Marine Affairs, its public foundation, the Biodiversity Foundation, and the Spanish Federation of Municipalities (Féderacion espanola de municipios y provincias (FEMP)), dedicated to promoting local policies aimed at the conservation and sustainable use of biodiversity and the conservation of Spain's natural patrimony.

Created in 2007, the Network integrates 219 local authorities in Spain, totaling almost 22 million inhabitants. The FEMP Network offers members technical support in promoting biodiversity conservation and improvement. For their part, members of the Network undertake to carry out a number of nature conservation objectives. These include: promoting municipal strategies, plans, programmes and projects which are grounded in sustainable development and ecosystem functioning, and conserve and increase biodiversity in natural areas and sensitizing and educating the public about the vital importance of biodiversity and nature to human health and well being. The Network also carries out a variety of conservation activities at the local level including an annual competition of biodiversity improvement project.

Visit the websites (in Spanish) at: www.redbiodiversidad.es; www.fundacion-biodiversidad.es; and www.mma.es.

specific actions that a local government plans to implement to protect and enhance its biodiversity. When coordinated appropriately, they facilitate stakeholder engagement in biodiversity conservation and increase public awareness of biodiversity value and loss.

Action 3.2: Develop and implement building guidelines that seek to maximize opportunities for biodiversity protection and enhancement

Case Study 17

The United Kingdom: Design for Biodiversity

Design for Biodiversity is an initiative established by the London Development Agency in partnership with Natural England, Greater London Authority, Groundwork London and London Wildlife Trust to promote the conservation of wildlife as part of the design and management of buildings and urban landscapes in London. The project provides guidance for developers, architects, landscape designers and planners and other interested parties on how ecologically sensitive designs and features can be integrated into new and existing developments.

Further details on the approach can be found on the Design for Biodiversity website (www.d4b.org.uk). Visitors to the site can also download a number of useful guidance materials including, Design for Biodiversity, Biodiversity by Design, and CABE Space: Start with the Park.

Action Area Four — Laying the groundwork for cooperative governance

The conservation of biological resources requires cooperative efforts by all spheres of government across all sectors. Natural resource managers and those assigned responsibility for biodiversity protection can only achieve so much working alone. It is incumbent on all sectors across governments to recognise that biodiversity protection and enhancement is essential to secure improved human well-being and that opportunities to deliver on this goal are not missed.

There is a need for greater consideration of the potential impact of policies implemented in one sector on biodiversity management at the local level. For example, people may be encouraged to migrate to urban areas for housing, jobs and education without taking into account the potential impact on irreplaceable, terrestrial and wetland areas. Many instruments are being used to bridge gaps between sectors and scales: including the creation of pan-governmental bodies with a mandate to protect biodiversity and the environment, the involvement of citizens and cities in National Parks management and the devolution of biodiversity protection to sub-national levels.

Case Study 18

Belgium: Coordinating Committee for International Environment Policy

The coherence of international environmental policy at the national level in Belgium is ensured by a mechanism called the Coordinating Committee for International Environment Policy which is composed of representatives from the federal government, the regions and the communities. This body functions under the high level authority of the Inter-ministerial Conference for the Environment. Under the Coordinating Committee, different convention related or thematic committees have been established such as for Biodiversity, Climate Change, Forests, Nature and so on[1].

1 Belgium's 4th National Report to the CBD.

Case Study 19

Mexico: Clean Beaches Programme

Beach contamination is a complex and serious problem for Mexico with wide-ranging impacts on many areas such as tourism, industry, public health and ecosystem functions. Recognizing that the issue necessitated a coordinated cross-sectoral approach, the federal government formed an inter-institutional group comprised of health, tourism and environment agencies to devise a strategy to promote technical and administrative solutions for the protection of coastal ecosystems and public health.

This led, in 2003, to a nation-wide cooperative endeavor called the Clean Beaches Programme (Programa Integral de Playas Limpias). This Programme brings together several key federal departments including the Secretariat of Environment and Natural Resources, the Secretariat of Health, and the Marine Secretariat, as well as state and municipal governments, and diverse community organizations. The primary goal of the Clean Beaches Programme is to promote the cleaning of beaches and the river basins, ravines, water-bearing and associated receiving water bodies, as well as prevent and ameliorate contamination, protect and preserve Mexican beaches, respect the native ecology, improve the quality of life of local populations, and promote tourism.

For more see: www.semarnat.gob.mx/informacionambiental/Pages/playas.aspx.

Action 4.2: Facilitate the active participation of local communities and citizens in biodiversity management and decision-making

Action 4.3: When appropriate, facilitate the efforts at the sub-national level to support local authorities in biodiversity conservation and management

In some contexts, sub-national governments are better placed to provide support to local authorities. In South Africa for example, the city of Cape Town most often receives support from provincial agencies such as CapeNature and the Provincial Government of Western Cape's Department of Environmental Affairs and Development Planning.

Photo Credit: UN-HABITAT

Case Study 20

Brazil: Tijuca National Park Management[1]

The Tijuca National Park stretches over more than 3,900 hectares, making it the largest urban forest in the world, and is home to 30 waterfalls, hundreds of plants and tree species and more than 300 different species of animals. Tijuca lies inside the municipality of Rio de Janeiro, surrounded by more than 100 informal settlements and fragmented by highways and roads passing through it. In 1996, catastrophic rains left an already abandoned and poorly maintained park severely damaged.

Recognizing the crucial role of local communities, the first Shared Management Agreement between the federal, state and municipal governments was signed in 1999 to try to restore and manage the unique nature park better. Until 2005, Tijuca National Park was managed by a intergovernmental council with a municipal representative as chair. Following a four-year hiatus due to political differences, a new agreement was signed in 2009 between the federal and municipal authorities.

Today, the Park continues to face challenges such as crime, poaching, squatting and illegal logging. The park director has reached out to and established close relationships with city stakeholders, including schools and poor communities who can visit and use the park.

See: biodivercities.files.wordpress.com/2010/09/santos-celso-biodivercities-2010-powerpoint-presentation-city-of-rio-de-janeiro.pdf

1 Notes from Workshop on Cities, Ecosystems and Biodiversity held 21 September 2006 in Nairobi, Kenya. See: www.unep.org/urban_environment/PDFs/CitiesEcosystemsNotes.pdf.

Case Study 21

France: Natureparif

The political landscape of France is multi-layered. Local government, therefore, is many times removed from the national level and has a more direct affiliation with the region.

Natureparif is the Regional Agency for nature and biodiversity in Île-de-France (which include Paris). The executive body of Natureparif counts among its member's environmental organizations, research bodies, chambers of commerce, companies, local authorities, the French State and the Île-de-France Region. Its mission is to promote the conservation and restoration of biodiversity in the Region using a number of approaches: networking existing information and expertise, collecting and sharing regional biodiversity information, establishing a regional biodiversity observatory, educating the public on biodiversity in the Île-de-France Region and supporting local authorities and institutions, particularly in terms of regional development policy and the inclusion of biodiversity considerations in economic and social planning.

For more information on Naturparif see: www.natureparif.fr/.

Action Area Five — Decision making at the habitat, ecosystem and landscape scale

The natural world does not operate along geo-political boundaries like cities, regions or nations. As most species, ecological communities and eco-systems depend on a much larger domain, regional cooperation and coordination is essential for wildlife and nature protection.

Similarly, biological systems operate on different timelines to individual governments. Ecosystems need time to recover and changing political mandates can compromise biodiversity. It is important to recognize that political decisions made for short-term objectives can result in long-term ecological damage.

Action 5.1: Support and facilitate the coordination of municipal and other entities at a regional level

Case Study 22

U.S.A.: Chicago Wilderness — Collaborative Model for Urban Conservation

Established in 1996, Chicago Wilderness is "a regional alliance dedicated to protecting nature and enriching life" in the region encompassing parts of four states-Illinois, Indiana, Wisconsin and Michigan. The organisation now has 250 members, including representation from local, state and federal agencies, large conservation organizations, cultural and education institutions, volunteer groups, municipalities, corporations, and religious groups.

Chicago Wilderness has four broad, long-term initiatives:

- Climate Change
- Green Infrastructure Vision: Bringing Nature to People
- Leave No Child Inside
- Restoring the Health of Local Nature

The Green Infrastructure Vision initiative is built on the idea that healthy natural areas are as vital to a region's economic vitality and people's quality of life as transportation systems. The Vision's aim is to expand the network of protection and restoration areas across the Chicago Wilderness Region from nearly 150,000 to over 725,000 hectares.

For additional information visit: www.chicagowildernes.org.

Case Study 23

Belgium: Flemish Region Policy Plan for Environment and Nature 2003-2007

The three Belgian regions — Flemish, Walloon and Brussels-Capital — each have their own strategic documents and action plans related to biodiversity. In the Flemish regional plan, for example, the Policy Plan for Environment and Nature 2003-2007 (extended to 2010)[1], contains major objectives focused on the local level, including support of local authorities (provincial and municipal authorities), regional landscape groups, and non-governmental organizations to enhance local actions for conservation measures and participation.

See www.lne.be/themas/beleid/beleidsplanning.

Action 5.2: Foster and support intersectoral and intergovernmental cooperation at large spatial scales

Action 5.3: Foster trans-national cooperation at addressing shared environmental objectives at the local level.

Case Study 24

Australia: Australia's National Landscapes

Launched in June 2008, Australia's National Landscapes is a partnership between Tourism Australia and Parks Australia to identify, protect and market the country's many iconic landscapes which attract tourists from around the world.

Regions that apply to become a National Landscape must meet a set of tough selection criteria and show a high degree of stakeholder interest and commitment. To date, ten National Landscapes have been identified reflecting the diversity of Australia natural and cultural heritage and these include including Flinders Ranges, Australia's Wilderness Coast, Kakadu, the Great Ocean Road and the Kimberly region.

Each National Landscape must establish a local steering committee responsible for implementation at a regional level to ensure that tourism contributes to the protection of the region's natural and cultural values and returns benefits to the community. The initiative's success, in large measure, depends on aligning the plans and actions of the tourism industry, the conservation sector, communities (including indigenous) and government stakeholders.

Photo Credit: Robyn Bromley

Kangaroo Island, one of Australia's National Landscapes

For more information visit:
www.tourism.australia.com/nl.

Case Study 25

The Nordic Council of Ministers: Network of Nordic Municipalities

A network of 14 Nordic municipalities of the five Nordic countries (Sweden, Norway, Finland, Iceland and Denmark) was set up in 2006 to undertake specific projects with the aim of achieving the Convention for Biological Diversity's 2010 target to significantly reduce the rate of biodiversity loss. The Nordic Project[1] is a forum where local politicians and civil servants can exchange their experiences in implementing biodiversity conservation projects which range from habitat restoration, invasive alien species control and the use of municipal plans as instruments.

See: www.dirnat.no/2010-malet

1 See also http://nordbio2010.dmu.dk/ for information on another Nordic Council of Ministers project to develop indicators that describe the state of biodiversity in Nordic countries.

Case Study 26

East Africa Cross Borders Biodiversity Project

East Africa Cross Borders Biodiversity Project is a co-operative trans-national endeavor involving Kenya, Uganda and Tanzania and which is operated and funded by the Global Environment Facility (GEF) and UNDP.

The aim of the project is to reduce the loss of forest and wetland biodiversity in four cross-border sites of national and global significance. One of these sites, the Eastern Arc Forests, is one of 25 Global Hotspots for plant diversity with exceptional levels of endemism.

The project has two specific objectives: "to help communities and local district authorities work in partnership with wildlife and environmental agencies on both sides of borders and to encourage sustainable use of natural resources, including biodiversity, by developing alternative economical activities and livelihoods for local communities"[1]. These objectives were achieved by establishing an enabling environment (policy, legislation and awareness) that permits the collaboration of sectoral and development agencies and local communities.

1 See: www.undp.org/gef/documents/writeups_doc/bio/EastAfricaCrossBorders_notes_BD1.doc.

Case Study 27

The European Union: Green Belt Initiative

After the fall of the Iron Curtain in 1989, the former border zone between East and West left behind a natural corridor of largely preserved and rare European habitats and ecological areas: coastal habitats, natural floodplains, grasslands, wetlands and forests. Driven by the IUCN, the EU's Green Belt Initiative joins these areas together in an ecological network running the length of Europe from the Barents to the Black Sea[1].

1 For more information consult the publication by Terry A, K Ullrich and U Riecken (2006) The Green Belt of Europe: from vision to reality. IUCN: Gland, Switzerland and Cambridge, U.K.

This model of transboundary cooperation in nature conservation supports a variety of projects with an aim to promote knowledge and information exchange, education activities and the harmonization of nature conservation and management methods. For example, local and national authorities collaborate to protect one of Europe's Biodiversity Hotspots, the Central Danube Floodplain, whose 57,000 ha of protected wetland is home to many EU species.

For more information visit the website at: www.greenbelteurope.eu.

Action Area Six — Capacity building and information sharing

Effective biodiversity action at the local level requires that local authorities have the necessary skills and knowledge to develop, implement and assess policies, programmes and projects. This is particularly critical when nature conservation and management becomes a statutory responsibility at the local level.

A workable national approach is simply not possible without addressing capacity issues at the community and council level, especially in developing countries. Capacity can be built and strengthened in a variety of ways: information exchange activities such as workshops, national and regional forums, network building; developing and disseminating resources like new planning tools and guidance materials, templates for tendering documents and procurement contracts; sharing and replicating successful approaches; and developing training packages.

Below are some examples of what is working in various contexts.

Action 6.1: Support the creation of biodiversity networks and platforms for information exchange

Case Study 28

Austria: Local Biodiversity Network

In 2009, the Austrian Ministry for Agriculture, Forestry, Environment and Water Management launched a national campaign on biodiversity called Vielfaltleben (Living Diversity) in partnership with the Austrian NGO Naturschutzbund, WWF and BirdLife. Within this campaign, a network of Austrian municipalities was set up to support local governments in meeting the 2010 target to reduce the loss of biodiversity.

As of 2010, 30 municipalities had joined the network. Although the Local Biodiversity Network is new, it is successfully bringing the topic to the local arena[1].

In order to become a member of the network, municipalities have to commit themselves (by signing a declaration[2]) to certain activities, including raising awareness on biodiversity, integrating biodiversity aspects in their local policies and operations, informing citizens about importance of biodiversity, and actively contributing to the protection of the natural environment.

They also agree to prepare and implement a biodiversity action plan. To this end, the Ministry has produced "Guidelines for local biodiversity activities" which includes information on: where to find data on local biodiversity and endangered species; financing instruments; and best practice examples. The national government also provides other tools such as an e-newsletter, a dedicated homepage and special meetings to raise awareness and assist local authorities in their work.

For more information visit www.vielfaltleben.at.

1 The Local Biodiversity Network is supported by the Austrian Association of Municipalities ("Gemeindebund"), which represents interests at the local level and to which 99 percent of all Austrian local governments belong.

2 A copy of the declaration in German is available.

Case Study 29

South Africa: Biodiversity Planning Forum

Initiated in 2004, the Biodiversity Planning Forum is an annual forum organized and subsidized by the national government's South African National Biodiversity Institute (SANBI). The Forum provides an opportunity for individuals involved in spatial biodiversity planning - people from conservation organizations, provincial and municipal environmental and conservation departments, NGOs, universities and research institutes and consultants - to share and synthesize lessons from projects and initiatives across South Africa.

The focus on the technical aspects of biodiversity planning and project implementation makes it a useful forum for biodiversity and environmental management staff to obtain guidance in fine-scale biodiversity planning at a municipal level. Each year the Forum is held in a different province and co-hosted by SANBI and the relevant provincial conservation authority and/or agency.

Action 6.2: Provide appropriate training and capacity building of staff in biodiversity-related functions, especially when decentralizing environmental management to sub-national levels

Linked to this should also be a programme of raising the awareness of the importance of biodiversity to staff in indirect biodiversity-related functions.

Case Study 30

New Zealand: Action Bio-Community Programme

The Ministry for the Environment through Local Government New Zealand supported the Action Bio-Community (ABC) Programme with the aim of building local capacity for biodiversity management and of strengthening partnerships of local, regional and national actors.

It targets councillors, planners, senior management, information managers and users, parks, biosecurity and ecology staff, and community groups and the Programme was built upon four pillars: leadership, collaboration, enhancing capacity at the community level, and a balanced mix of tools.

The "toolbox", available at www.biocommunity.org.nz, provides an online source of technical information as well as educational materials including:

- Key reference materials and contacts
- Case studies of successful approaches
- Inventory of Local Biodiversity Strategies and Action Plans
- Threatened Environment Classification Maps
- Video interviews with councils and community groups working in nature conservation

A 2004 programme evaluation found that ABC had contributed significantly to growing the skills and know-how of local governments for biodiversity management[1].

Regular forums and national workshops which contribute to networking and the coordination and pooling of knowledge and experience across local authorities continue. The current focus of these workshops is to coordinate biodiversity monitoring and the review of regional policy documents.

1 Local Government New Zealand (2004) Action Bio-Community, Final Report: A Project sponsored by Local Government New Zealand and funded by the Sustainable Management Fund.

Case Study 31

Brazil: Decentralized Environmental Management for 5500 Municipalities

The Brazilian Ministry of the Environment, with funding and technical support from the World Bank, developed an e-learning program with the goal of decentralizing environmental management through capacity building and training of municipal environmental managers[1].

This initiative has three main delivery tools: monthly seminars on selected environmental management issues to foster a network for information exchange; distance learning for a 54-hour course on solid waste management reaching 200 students in six states and distance learning for a 70-hour course on environmental licensing reaching 800 students in 17 states. Some of the concrete lessons learned from the program are that the distance learning tool proved effective in responding to the large-scale capacity building demand from municipal environmental managers; the participation of several states offered an excellent opportunity for knowledge exchange among participants and the piloting of two distance learning courses opened new horizons to the municipal technical staff about the benefits of distance learning[2].

1 The link to the course is: ead.mma.gov.br.

2 http://web.worldbank.org/WBSITE/EXTERNAL/WBI/WBIPROGRAMS/ENRLP/0,,contentMDK:22105477~menuPK:460994~pagePK:64156158~piPK:64152884~theSitePK:460957,00.html.

Action 6.3: Support the creation of offices or posts with a biodiversity specialist(s) on staff to implement key national biodiversity policies and legislation.

A review of the UK Biodiversity Duty found that a key aspect to promoting the duty to integrate biodiversity considerations into all public functions was the availability of an adequately trained member of staff with the responsibility for biodiversity[29].

Photo Credit: NACOMA

Case Study 32

South Africa: Skills for Biodiversity

To address the critical need for people trained in biodiversity conservation and management, the South African National Biodiversity Institute, with the support of the Lewis Foundation, has formulated a draft Human Capital Development Strategy for the biodiversity sector.

The strategy aims to increase the pool of biodiversity professionals and conservation managers through collaborative sector-wide initiatives to attract and retain qualified staff. According to the 4th National Report (CBD), despite gains in training and skill building, the environmental management sector still struggles to attract and retain enough skilled people.

See: www.skillsforbiodiversity.org.za.

Action Area Seven — Collecting and disseminating biodiversity information

Information about biodiversity is essential for developing policies and actions to conserve biodiversity, for monitoring and reporting, for assessing progress towards targets and for developing indicators. Indicators show changes in aspects of biodiversity such as the population size of important species or the area of land managed for wildlife. Indicators specific to the urban context would measure points such as the number of native species or the percentage of natural/semi-natural areas.

National governments can communicate to local authorities the importance of monitoring biodiversity in urban areas, promote the application of urban specific indicators and support the development of measurable targets at the local level.

Action 7.1: Develop and apply biodiversity indicators for local authorities.

Action 7.2: Share specialised technical expertise and scientific knowledge with local communities

Action 7.3: Link local government decision-makers to research and development in universities, and the public and private sectors

Case Study 33

The Singapore Index on Cities' Biodiversity or City Biodiversity Index

The idea for a monitoring tool to assist national governments and local authorities in benchmarking their progress in reducing the rate of biodiversity loss in urban areas was proposed at the CBD's 9th Conference of the Parties in Bonn, Germany, by Singapore's Minister of National Development.

The City Biodiversity Index (CBI)[1] was developed by a Technical Task Force of experts in biodiversity indicators as well as city representatives. The CBI provides cities with a set of indicators which they can use to assess their efforts in three areas: conservation of native biodiversity; the state of ecosystem services provided by native biodiversity and environmental governance and management. More than 15 cities worldwide have tested the draft index with their experiences helping to refine and improve this important evaluation tool.

For more information see: www.cbd.int/authorities/gettinginvolved/cbi.shtml.

The UK government has also developed a set of indicators to help measure nationwide progress towards the 2010 target. See the publication UK Biodiversity Indicators in Your Pocket 2010 (www.jncc.gov.uk/page-4229.) for the results of this work.

1 For more information: www.cbd.int/doc/groups/cities/cities-draft-user-manual-singapore-index-2009-07-01-en.pdf.

Case Study 34

Canada: Canadian Museum of Nature's Rideau River Biodiversity Project

The Canadian Museum of Nature, a federal agency, initiated the Rideau River Biodiversity Project in 1995 in collaboration with the then Municipality of Ottawa-Carleton, Ontario, in response to residents' concerns about the quality of the River's water. The Rideau River Biodiversity Project along with the similar Frenchman River Biodiversity Project in Saskatoon are recent examples of the Museum's leadership role in providing scientific expertise to develop a biological inventory in partnership with the local community.

It is a model of connecting formal science with local knowledge holders to foster stewardship and biodiversity monitoring. Since its inception, the Rideau River Project has involved community volunteers, museum researchers, municipalities, public and private corporations and businesses working together to assess the health of the river, identify its biodiversity and work towards its preservation.

See: www.nature.ca/rideau/index-e.html and nature.ca/research/rvfrnchmn/index-e.cfm.

Action Area Eight — Facilitating partnerships and participation

One of the most effective ways to promote biodiversity conservation is to engage all stakeholders, including private, public and people sectors (government agencies, academia, schools, conservation groups, amateur naturalists and private corporations) in a comprehensive partnership. National programmes and legislation can be crucial in creating a favourable environment to support effective bottom-up initiatives led by communities, local authorities or businesses.

Action 8.1: Build partnerships and encourage active participation in the stewardship of the environment

Case Study 35

Republic of Namibia: the Namibian Coast Conservation and Management Project

The Namibian coast is key to the current and future economic and social development of the country. However, the fragile coastal ecosystem is under threat by a number of damaging activities including tourism and mining.

To ensure its sustainable ecological functioning, in 2006, the Government of the Republic of Namibia along with the Global Environment Facility set up the Namibian Coast Conservation and Management Project (NACOMA) to pave the way for an Integrated Coastal Zone Management System for Namibia's coast. The lead agency, the Ministry of Environment and Tourism, encourages and fosters direct involvement of diverse stakeholders across sectors and government levels, including the municipalities of Walvis Bay and Swakopmund.

Among the project's goals are:

- Consult with Namibians to develop a common vision for the management of the coastal zone
- Clarify the legal and regulatory framework for coastal zone development planning
- Harmonize institutional mandates and roles for the management of the coastal zone
- Provide training and practical skills to key stakeholders responsible for managing the coast
- Improve awareness about coastal biodiversity and its value, and environmental problems

Photo Credit: NACOMA

Releasing cleaned penguins in Luderitz after April 2009 oil spill.

Visit www.nacoma.org.na for more information on NACOMA.

Photo Credit: UN-HABITAT

Case Study 36

Canada: Partnerships with Community and Local Mining Industry

The City of Greater Sudbury, Ontario, Canada has a long history of resource extraction dating back to the 1880s. Acid rain and logging associated with copper and nickel mining has had a devastating effect on the local environment, leaving over 82,000 ha barren or semi-barren.

Since 1978, the Greater Sudbury community has been actively regenerating its landscape. This work led to the transformation of ecologically damaged land into parkland, bird sanctuaries and wildlife habitat.

In 2001, a partnership of local, provincial and national government agencies and mining companies was formed to prepare the Sudbury Soils Study Ecological Risk Assessment, one of the most comprehensive studies of its kind in Canada. The study, released in 2009, found that many of Greater Sudbury's terrestrial plant communities continue to be affected by metal contamination in local soils. This finding resulted in the development of a Biodiversity Action Plan1.

Both the development and implementation of the Biodiversity Action Plan relies deeply on the involvement of all sectors of the community, with important participation from the two local mining companies, Vale Inco and Xstrata Nickel. The Plan is viewed as a "living document" which can be reviewed and updated regularly by citizens and groups.

Photo Credits: Julie Tasker-Brown

Sudbury, Coniston Hydro Road, 1981

Photo Credits: Julie Tasker-Brown

Sudbury, Coniston Hydro Road, September 2008

1 The Plan is called Living Landscapes: A Biodiversity Action Plan for Greater Sudbury (2009). For a copy of the Plan visit: www.greatersudbury.ca/cms/index.cfm?app=biodiversity&currID=9343&lang=en.

Action Area Nine — Prioritizing and focusing action

Given the enormity of the challenge of reducing the rate of biodiversity loss and the limited financial and human resources currently available to address this challenge, there is a need for increased efficiency and accountability for public investment in biodiversity conservation and restoration. While it is important that investment in biodiversity is based on rigorous science, agreed conservation planning principles and the best available knowledge, it is equally important that time and money is not wasted.

Through having a national perspective and being aware of international conservation responsibilities, national governments are often in the best position to identify important species or ecosystems and key biodiversity threats. Accordingly, in addition to providing administrative and regulatory support to biodiversity efforts at the local level, national governments can also serve a facilitative role.

They can target action by prioritizing initiatives that have the potential to have the greatest impact on biodiversity protection such as focusing on endangered or threatened species and habitats or mitigating the most harmful urban activities. They can help local governments by showcasing best practices and by providing templates of projects that have been tested and work.

Action 9.1: Target action for priority areas, including species and habitats

Case Study 37

Tanzania: Strategy on Land Degradation and Water Catchments

In Tanzania, the number one environmental problem is desertification, which threatens over 60% of the country. To address environmental degradation caused by unsustainable activities such as agriculture and excessive tree cutting for heating and cooking, the national government prepared a Strategy for Urgent Actions on Land Degradation and Water Catchments (www.tz.undp.org/mdgs_goal7.html.). This emergency programme was set up by the national government and implemented at all levels (including local authorities and communities, and the private sector) and across sectors with the goal of restoring ecological productivity in key watersheds and wetlands.

Photo Credit: UN-HABITAT

Case Study 38

South Africa: Working for Water Programme

The Australian black wattle is one of approximately 190 invasive alien plants that cover about 10% of South Africa. Invasive alien plants have created huge problems for the country, from increasing wildfire frequency and intensity and soil erosion to transforming agricultural land into unproductive wastelands. Additionally, they are very "thirsty" plants in a country that suffers from a long-term chronic water shortage.

In response, in 1995, the Government of South Africa's Department of Water Affairs and Forestry created the Working for Water Programme (www.dwaf.gov.za/wfw/). While the main goal of this initiative is to recover scarce water, other components include biodiversity conservation and local community development through job creation.

This Programme operates in partnership with local communities, other national government departments including the Departments of Environmental Affairs and Tourism, Agriculture and Trade and Industry; provincial departments of agriculture, conservation and environment; research foundations and private companies. Working for Water is part of the Expanded Public Works Programme that includes the Working for Wetlands Programme (wetlands,sanbi.org/wfwet), which was launched in 2000 and is implemented by South African National Biodiversity Initiative.

The Canadian government has developed a similar initiative: the Invasive Alien Species Partnership Program[1]. As part of the Invasive Alien Species Strategy for Canada the Invasive Alien Species Partnership Program empowers grassroot-level work, engages multi-stakeholders and employs Canadians by providing funding to 143 projects to date, to provinces, territories, municipalities, aboriginal communities, educational institutions and non-government organizations, as well as to other groups who are working on dealing with invasive species[2].

1 For more information on the Invasive Alien Species Partnership Program please visit: www.ec.gc.ca/eee-ias/Default.asp?lang=En&n=A49893BC-1.
2 CBD 4th National Report, 73.

Case Study 39

The United Kingdom: Conserving Biodiversity: The "UK Approach"

Recognizing that some places are richer in terms of abundance and diversity of species than others and the effectiveness of targeting resources, the UK's strategic framework for biodiversity—Conserving Biodiversity: the UK Approach - includes 'protecting the best sites for wildlife' and 'targeting actions on priority species and habitats' as two of its six priority areas.

In addition to internationally and nationally important sites for wildlife, the UK has designated places of local biodiversity importance. These sites are central to the strategy to ensure that biodiversity is able to adapt to environmental change, particularly climate change. The UK has published guidance for practitioners to promote a transparent and consistent approach to the identification, selection and management of these sites.

Experience shows that targeted action can deliver sustained improvement to the status of species and habitats. Accordingly, the UK publishes a list of priority species and habitats and targets for their protection.

Action 9.2: Provide local authorities with guidance and resources to prepare plans that prioritize conservation needs

Decision makers and practitioners at the local level often lack guidance for identifying priority areas and for selecting appropriate policies or strategies for ensuring the success of biodiversity conservation or restoration plans[30].

Action 9.3: Encourage the development and implementation of biodiversity initiatives by cities and local authorities by recognizing leadership and innovation at the local level

A number of countries have initiated competitions or award campaigns to recognize efforts to protect biodiversity in the local environment. Examples include Ireland's "The Tidy Towns Notice Nature Biodiversity Award" (www.noticenature.ie/Tidy_Towns_Competition_Winners.html) and those described below.

Case Study 40

Federated States of Micronesia: "Blueprint" for Conserving Biodiversity

The Federated States of Micronesia (FSM), the Nature Conservancy, the U.S. Forest Service, university scientists and local experts worked together to develop a comprehensive, coordinated plan to prioritize conservation needs, with funding support from UNDP-Global Environment Fund and the U.S. Department of the Interior [1].

The impetus for the "blueprint" was the desire to meet the objectives of FSM's national biodiversity strategy and action plan. Using the Nature Conservancy's[2] collaborative, science-based methodology for developing conservation goals, the original substantial list of "Areas of Biological Significance" were whittled down to 24 priority action areas selected to focus conservation and restoration efforts in the most biologically important and threatened areas. This was accomplished, in part, through a series of workshops involving local experts such as local landowners, business people, and state and municipal government staff.

1 The plan is entitled: A Blueprint for Conserving the Biodiversity of the Federated States of Micronesia. See; http://www.micronesiachallenge.org/files/mc_blueprint_part1.pdf.

2 The Nature Conservancy is a global non-profit conservation organization. For a description of its framework called "Conservation by Design" see: http://www.nature.org/aboutus/howwework/cbd/.

Case Study 41

The European Union: European Capitals of Biodiversity initiative

Co-financed by LIFE+[1], five national environmental organizations and two international partners[2], the European Capitals of Biodiversity initiative aims to foster and encourage local government initiatives that increase nature and biodiversity protection.

Launched in 2009, the initiative invites local authorities involved in biodiversity activities in France, Germany, Hungary, Slovakia and Spain to enter their national competition and the EU hopes to extend the competition to other European countries such as Poland, Italy and the Netherlands.

All municipalities from rural towns to large cities are eligible to participate. Winners are chosen from different size classes according to the population of the municipality. To enter, participants complete a questionnaire covering a range of biodiversity-related topics such as green areas, planning instruments, and organization, cooperation and communication. Participating municipalities benefit from extensive technical support, with training workshops, information exchange and expert advice.

For additional information visit:
www.capital-biodiversity.eu/.

1 See: ec.europa.eu/environment/life/funding/lifeplus.htm.

2 The project is led by Deutsche Umwelthilfe e.V., a German NGO. The competitions in the other four countries are implemented by Natureparif (France), Lake Balaton Development Coordination Agency (Hungary), Fundación Biodiversidad (Spain), and the Regional Environmental Center (Slovakia). The IUCN and ICLEI are international partners.

Case Study 2

Spain: More Biodiversity (Red Mas Biodiversidad) Project Competition

One of the most influential activities of the Spanish government and the Spanish Federation of Municipalities (FEMP)'s Local Government Network + Biodiversity 2010 initiative is an annual competition which awards substantial grants to local authorities for best practices in restoring and protecting biodiversity in urban areas[1].

- Winning projects include:
- Conservation of threatened species in an urban environment (Jaén)
- Restoration of coastal dune ecosystems (Nigrán)
- Creation of urban parks and gardens (Santander)
- Improvement of ecological corridors (Totano)
- Reintroduction of the Caretta Turtle (Fuerteventura)

For project descriptions and more information about the project competition (in Spanish) visit: www.redbiodiversidad.es/concurso-de-proyectos-para-el-incremento-de-la-bio/concurso-de-proyectos-para-el-incremento-de-la-bio_97_es.html.

1 FEMP has published a Catalogue of Best Practices which showcases the work of 6 projects undertaken by municipal and provincial councils to integrate biodiversity into municipal policies.

Action 9.4: Support on-the-ground projects that protect, manage and/or restore biodiversity and can be used as demonstration sites or exemplars

Case Study 43

Wastewater Treatment through Effective Wetland Restoration of the That Luang Marsh Project

That Luang Marsh, is the largest remaining wetland in Vientiane Capital City, Laos, and occupies 20 square kilometers. Traditionally, it has served a number of important ecological functions from the treatment of the city's domestic and industrial wastewater, to storm-water storage and the provision of livelihoods for tens of thousands of people.

Population growth and unregulated housing and industrial development are threatening the marsh and its ability to perform essential ecosystem functions. To restore this important wetland, WWF Laos initiated the That Luang Marsh project, which focused on the use of constructed wetland treatment systems.

The Wildfowl & Wetlands Trust provided technical support on system design and incorporation of additional benefits. This project, funded by EU Asia Pro Eco II, was coordinated by the Department of Science and Technology, and involved the support of many other national government departments.

Several elements contributed to the initiative's success, including producing adaptive management plans with community consultation; training people in wetland treatment system design, operation and maintenance; raising public awareness of wetland benefits and designing and constructing wetland treatment systems. The That Luang Marsh Project promotes the use of a low cost, low energy sustainable solution to improve water quality for Vientiane City instead of conventional wastewater solutions. It offers a host of other benefits including wildlife habitat and income provision for residents who rely directly on the marsh for their livelihood.

Photo credits: Sally Mackenzie

Treatment wetland created for the None Khor primary school planted with Lotus and Heliconia

Case Study 44

India: Delhi Biodiversity Park Network

Human activities have resulted in the rampant loss of native biodiversity in Delhi, India's capital. The Delhi Development Authority (DDA), an agency of the national Ministry of Urban Development and responsible for building the city, has recognized the importance of Delhi's natural heritage as part of its urban infrastructure for enhancing cultural, educational and conservation values.

With this in mind, the national government is promoting biodiversity conservation in Delhi through the development and management of Biodiversity Parks that act as Nature Reserves and Natural Heritage sites. To date, DDA has established two Biodiversity Parks – the Yamuna Biodiversity Park and Aravalli Biodiversity Park - to restore the vanished heritage of two of Delhi's land forms: the river Yamuna and the Aravalli hills commonly known as the Delhi Ridge. Four more are under development[1], bringing the total protection area to two thousand hectares and the Biodiversity Parks are developed and managed by a team of scientists assisted by technical staff and fully funded by DDA.

The Biodiversity Parks experience a number of constraints, the major one being habitat pressures from rapid human population growth and settlements close to the parks. To ensure protection from encroachment, the parks are protected by a boundary wall. Park staff have also initiated education programmes to raise the awareness of local communities of the direct and indirect benefits provided by the parks. These interactive programmes have had positive results, and the local communities are no longer a threat.

Photo credits: Sally Mackenzie

Treatment wetland created for the None Khor primary school planted with Lotus and Heliconia

The biodiversity park concept and details of Yamuna and Aravalli Biodiversity Parks are provided at: dda.org.in/greens/biodiv/index.html

1 The additional four biodiversity parks are: the Neela Hauz, The Northern Ridge (Kamla Nehru Ridge), the Tilpath Valley and the Yamuna Riverfront.

Action Area Ten — Financing biodiversity conservation

It is impossible to avoid the sticky issue of who pays for biodiversity conservation at the local level. Lack of funding for all components of effective urban biodiversity management — the hiring and training of qualified professionals, data collection, acquisition of sensitive natural areas, education and public awareness campaigns, plan and policy implementation and so on — is arguably one of the most significant barriers to implementing the CBD.

Local authorities deliver a wide range of services to their citizens and are limited in the ways they can raise revenue to pay for them. National governments can make a crucial contribution by providing additional funding mechanisms for biodiversity efforts at the local level. National governments can also help ensure that the true environmental costs are factored into urban development and local policies and that biodiversity conservation is considered as a component of wealth creation.

Below are examples of various successful approaches to financing.

Action 10.1: Provide grants and other funds for biodiversity-related projects, and make information on such funding opportunities readily available

Case Study 45

New Zealand: The Biodiversity Condition and Advice Funds

The government of New Zealand has created several funds designed to promote biodiversity conservation at the local level. The Biodiversity Advice Fund provides financial support to projects that encourage landholders and groups to better protect indigenous species on their land, such as workshops and publications whilehe Biodiversity Condition Fund finances initiatives aimed at improving or maintaining the condition of indigenous vegetation, species and habitats.

These funds are made available to individuals and community groups working on private or public land as well as Councils for biodiversity work on private land. The government of New Zealand has developed a guide for councils, available on their Action Bio-Community website, on how to apply for and receive Biodiversity Condition and Advice Funds[1].

The Australian Government's Caring for our Country grant program[2] is a similar mechanism for funding biodiversity related initiatives at a local level.

For more information see Biodiversity Funds section of www.biodiversity.govt.nz.

1 The New Zealand government also has contestable funds with particular aims, including the Natural Heritage Fund which aims to protect ecosystems representing New Zealand's natural diversity and the Matauranga Kura Taiao Funds which support initiatives that promote the revival, use and retention of traditional Maori knowledge and practices in biodiversity management.
2 For more information on this program, visit http://www.nrm.gov.au/index.html.

Case Study 46

Canada: EcoAction Community Funding Programme

Since 1995, Environment Canada's EcoAction Programme has provided funding to community-based organizations for projects that have measurable, positive impacts on the environment. Up to 50 % of the funding comes from the federal government with the rest coming from private sector sources, with the aim of strengthening public-private collaboration and ensuring long-term project success.

In 2010, to support the International Year of Biodiversity, the programme prioritized to biodiversity projects, funding efforts to reduce biodiversity loss, protect wildlife and improve their habitat, educate and raise public awareness, and increase urban naturalization. In Bathurst, New Brunswick, EcoAction supported the creation of a children's garden and biodiversity center that will provide school children with hands-on instruction about the impacts of climate change on wildlife, biodiversity and habitat.

See: www.ec.gc.ca/ecoaction for more information.

Action 10.2: Develop fiscal incentives for nature conservation activities

Peru is one of several countries that have enacted laws to offer economic and fiscal incentives to those who abide by existing environmental regulations.

Action 10.3: Create mechanisms for compensation to private owners of natural areas that provide environmental services

Additional financial mechanisms national governments can employ for supporting biodiversity action in the local sphere include:

- Provide funds for the development of local biodiversity strategies and action plans
- Attach conditions to funding for other programmes such as poverty relief or infrastructure development so that such funding is linked to biodiversity objectives as well as social or economic development objectives
- Make funding available for the acquisition of unprotected natural areas needed to protect critical biodiversity

Case Study 47

Brazil: Ecological Merchandise Circulation and Services Tax

The Brazilian government uses an environmental tax incentive called the "Ecological Merchandise Circulation and Services Tax" (ICMS-E) to reward local governments that promote conservation of biodiversity and other environmental initiatives. The ICMS-E, which acts like a value added tax, allows municipalities to receive additional financial resources in those states that have legally defined environmental criteria for sharing part of the portion owed to the municipality.

To date the instrument has mobilized significant internal funding for conservation. For example, according to a Nature Conservancy study, since the State of Paraná introduced the instrument in 1992, it has generated about U$170 million towards conservation and it has increased by 158% the number of protected areas in the State[1].

1 The Nature Conservancy. A Genuine Brazilian Incentive for Conservation, Ecological ICMS. Available at: http://www.icmsecologico.org.br/images/artigos/a003.pdf.

Case Study 48

Ecuador: Forest Partners Programme (Programa Socio Bosque)

Established in 2008 by the Government of Ecuador, Socio Bosque provides annual economic incentives per hectare to individual landowners and indigenous communities who voluntarily decide to protect their native forests. The aim of the programme is to protect 4 million hectares of native forest, to reduce greenhouse gas emissions caused by deforestation and to improve the living conditions of the poor[1].

1 From: Ecuador's 4th National Report to the CBD.

Annexes

ANNEX I: TABLE OF CASE STUDIES

CASE	TITLE	(COUNTRY (IES	LINK
1	East London Green Grid: Valorizing Urban Trees and Green Spaces	United Kingdom	www.designforlondon.gov.uk/what-we-do/#/east-london-green-grid
2	Central Catchment Nature Reserve	Singapore	
3	Sustainable Timber Purchasing Policy	Brazil	
4	Assessing the Mitigation Advantages of Maintaining the Open Space System Intact Atlas	eThekwini Metropolitan Municipality (Durban), South Africa	
5	The Cities and Biodiversity Engagement Strategy	Canada	www.iclei.org/index.php?id=11305
6	The Biodiversity Atlas	France	www.biodiversite.2010.fr
7	Breathing Spaces Campaign	United Kingdom	/www.bbc.co.uk/breathingplaces
8	Notice Nature	Ireland	www.noticenature.ie/
9	Urban Biokits	Canada	www.ec.gc.ca/biotrousses-biokits www.ec.gc.ca/biosphere
10	"The "Biodiversity Duty	United Kingdom	www.naturalengland.org.uk/our-work/conservation/biodiversity/protectandmanage/duty.aspx
11	Article 13 of the Basic Act on Biodiversity	Japan	
12	Integrated Development Planning	South Africa	www.etu.org.za/toolbox/docs/local-gov/webidp.html
13	Puerto Princesa Subterranean River National Park	Philippines	/www.puerto-undergroundriver.com
14	Decentralized System of Efficient and Participatory Environmental Management	Ecuador	
15	Guide to the Local Biodiversity Strategy	Japan	www.japanfs.org/en/pages/029583.html
16	The Local Government Network+Biodiversity 2010	Spain	www.redbiodiversidad.es www.fundacion-biodiversidad.es www.mma.es
17	Design for Biodiversity	United Kingdom	www.d4b.org.uk
18	Coordinating Committee for International Environmental Policy	Belgium	
19	Clean Beaches Programme	Mexico	www.semarnat.gob.mx/informacionambiental/Pages/playas.aspx
20	Tijuca National Park Management	Brazil	
21	Naturparif	France	/www.natureparif.fr
22	Chicago Wilderness - Collaborative Model for Urban Conservation	.U.S.A	www.chicagowildernes.org
23	Flemish Region Policy Plan for Environment and Nature 2003-2007	Belgium	
24	Australia's National Landscapes	Australia	www.tourism.australia.com/nl

CASE	TITLE	(COUNTRY (IES	LINK
25	Network of Nordic Municipalities	The Nordic Council of Ministers	www.dirnat.no/2010-malet
26	East Africa Cross Borders Biodiversity Project		www.undp.org/gef/documents/writeups_doc/bio/EastAfricaCrossBorders_notes_BD1.doc
27	Green Belt Initiative	The European Union	www.greenbelteurope.eu
28	Local Biodiversity Network	Austria	www.vielfaltleben.at
29	Biodiversity Planning Forum	South Africa	
30	Action Bio-Community Programme	New Zealand	www.biocommunity.org.nz
31	Decentralized Environmental Management for 5500 Municipalities	Brazil	
32	Skills for Biodiversity	South Africa	www.skillsforbiodiversity.org.za
33	The Singapore Index on Cities' Biodiversity of City Biodiversity Index		www.cbd.int/authorities/gettinginvolved/cbi.shtml
34	Canadian Museum of Nature's Rideau River Project	Canada	www.nature.ca/rideau/index-e.html nature.ca/research/rvfrnchmn/index-e.cfm
35	The Namibian Coast Conservation and Management Programme	Republic of Namibia	www.nacoma.org.na
36	Partnerships with Community and Local Mining Industry	Canada	
37	Strategy on Land Degradation and Water Catchments	Tanzania	www.tz.undp.org/mdgs_goal7.html
38	Working for Water Programme	South Africa	www.dwaf.gov.za/wfw/
39	Conserving Biodiversity" the "UK" Approach	United Kingdom	
40	Blueprint" for Conserving Bio-" diversity	Federated States of Micronesia	
41	European Capitals of Biodiversity	European Union	/www.capital-biodiversity.eu
42	More Biodiversity (Red Mas Biodiversidad) Project Competition	Spain	www.redbiodiversidad.es/concurso-de-proyectos-para-el-incremento-de-la-bio/concurso-de-proyectos-para-el-incremento-de-la-bio_97_es.html
43	Wastewater Treatment through Effective Wetland Restoration of the That Luang Marsh Project	Laos	
44	Dehli Biodiversity Park Network	India	dda.org.in/greens/biodiv/index.html
45	The Biodiversity Condition and Advice Funds	New Zealand	www.biodiversity.govt.nz
46	EcoAction Community Funding Programme	Canada	www.ec.gc.ca/ecoaction
47	Ecological Merchandise Circulation and Services Tax	Brazil	
48	Forest Partners Programme	Ecuador	

ANNEX II: TABLE OF BIODIVERSITY ACTION AREAS

ANNEX III: USEFUL LINKS AND RESOURCES

1. Bonn Centre for Local Climate Action and Reporting (CARBONN).
2. www.carbonn.org/.
3. Copenhagen World Catalogue of Local Communities to Combat Climate Change. www.climate-catalogue.org/.
4. Countdown 2010 – Save Biodiversity. www.countdown2010.net/.
5. C40 Cities: Climate Leadership Group. www.c40cities.org/.
6. Durban Commitment. www.iclei.org/index.php?id=8676.
7. Earth Charter Initiative.www.earthcharterinaction.org/.
8. Global Biodiversity Outlook 3. gbo3.cbd.int/
9. ICLEI Cities for Climate Protection Program. www.iclei.org/co2/.
10. ICLEI– Local Governments for Sustainability Local Action for Biodiversity (LAB) Programme. www.iclei.org/lab.
11. ICLEI Melbourne Principles. www.iclei.org/index.php?id=4490
12. IUCN's A New Vision for Biodiversity Conservation. See: iucn_draft_position_on_cbd_strategic_plan_and_post_2010_target_framework_js_22_01_10.pdf
13. The Economics of Ecosystems and Biodiversity (TEEB) D2. ec.europa.eu/environment/nature/call_evidence.htm
14. UNEP Climate Neutral Network. www.unep.org/climateneutral
15. World Association of Major Metropolises www.metropolis.org/.

Supporting Local Action for Biodiversity: the Role of National Governments was conceived to assist national focal points as well as other departments/ministries involved in areas that influence environmental and biodiversity management and protection (such as housing, land-use development, transportation, finance, etc.) to encourage and support the critical contribution of local authorities in implementing the Convention on Biological Diversity. It illustrates how implementing agencies can cooperate with local authorities in a coordinated effort to mainstream biodiversity protection into planning and decision-making across sectors.

It is hoped that this guidance tool will encourage national government actors to recognize the role of cities and local authorities in their national biodiversity strategies and action plans (NBSAP), facilitate the adoption by cities and local authorities of practices that support the implementation of these strategies and action plans, and support the development of local biodiversity strategies and action plans, sustainable development plans and adaptation plans consistent with their national biodiversity strategies and action plans.

Supporting Local Action for Biodiversity: the Role of National Governments is intended to complement the document entitled *Local Action for Biodiversity Guidebook: Biodiversity Management for Local Governments* produced by members of the Global Partnership on Cities and Biodiversity, ICLEI-Local Governments for Sustainability, and the International Union for Conservation of Nature (IUCN) under their Local Action for Biodiversity (LAB) Programme. That publication is designed to help practitioners working at the local level to improve the way in which biodiversity is managed within and beyond their jurisdictions.

The United Nations Human Settlements Programme, UN-HABITAT

The United Nations Human Settlements Programme, UN-HABITAT, is the United Nations agency for human settlements. It is mandated by the UN General Assembly to promote socially and environmentally sustainable towns and cities with the goal of providing adequate shelter for all. As the coordinating agency within the UN system for human settlements UN-HABITAT is the focal point for monitoring, evaluating and implmenting the Habitat Agenda and responsible for promoting and consolidating collaboration with all Habitat Agenda partners.

UN-HABITAT's headquarter is based in Nairobi, Kenya, with the Asia Regional Office in Fukuoka, Japan. UN-Habitat is an active member of the 'Global Partnership on Cities and Biodiversity', which provides an umbrella for all ongoing activities on cities and biodiversity.

The Secretariat of the Convention on Biological Diversity

The Convention on Biological Diversity (CBD) is the reference multilateral agreement on life on Earth, launched in Rio de Janeiro, Brazil, in 1992, and currently signed and ratified by more than 193 countries, giving it an almost universal scope. Its objectives are the conservation and sustainable use of biological diversity, and the fair and equitable sharing of the benefits arising from its utilization. Its main decision body is the Conference of the Parties, a bi-annual general assembly of its members led by a President voted among its Parties, and supported by a Bureau of regionally balanced representatives. The Secretariat of the CBD, established in Montreal, Canada, supports Parties in the implementation of its decisions and programmes of work, provides technical assistance and capacity building, and services its meetings.

Endnotes

1 International Union for Conservation of Nature at: www.iucn.org/what/tpas/biodiversity/.

2 Keystone Center, Final Consensus Report of the Keystone Policy Dialogue on Biological Diversity on Federal Lands, 1991.

3 Cities and Biodiversity: Achieving the 2010 Biodiversity Target, Mayors' Meeting on the Contribution of Cities to the Achievement of the 2010 Biodiversity Target, Curitiba, Brazil, 26-28 March 2007.

4 The ecological footprint represents the area of land and water necessary to support the consumption and waste disposal of a specific population. The UN-HABITAT document State of the World's Cities 2008/2009 calculates that humanity's current ecological footprint is 2.2 ha per person (over 21% greater than the Earth's bio-capacity, which is 1.8 ha).

5 United Nations, Department of Social and Economic Affairs, 2008. See: esa.un.org/unup/p2k0data.asp.

6 Davis, M. Planet of Slums: The Third World's Megacities.

7 UN-HABITAT (2008). State of the World's Cities 2008/2009.

8 ICLEI-Local Governments for Sustainability (2010). Local Action for Biodiversity Guidebook: Biodiversity Management for Local Governments. Laros, MT and Jones FE (Eds).

9 *The LAB Pioneer Local Governments are: Amsterdam, Barcelona, Bonn, Cape Town, Curitiba, Durban, Edmonton, Ekurhuleni, Île-de-France, Johannesburg, Joondalup, King County, Leicester, Liverpool (Sydney), Nagoya, São Paulo, Seoul, Tilburg, Waitakere, Walvis Bay, and Zagreb. More information is available at: www.iclei.org/lab.

10 UN-HABITAT (2008). State of the World's Cities 2008/2009.

11 Cities and Biodiversity: Achieving the 2010 Biodiversity Target, Mayors' Meeting on the Contribution of Cities to the Achievement of the 2010 Biodiversity Target, Curitiba, Brazil, 26-28 March 2007.

12 See: TEEB for Local and Regional Policy Maker (http://www.teebweb.org/ForLocalandRegionalPolicy/tabid/1020/Default.aspx).

13 Kühn I, R Brandl and S Klotz (2004) The flora of German cities is naturally species rich. Evolutionary Biology Research 6:749-764.

14 Canadian Biodiversity Information Network: www.cbin.ec.gc.ca/enjeux-issues/urbain-urban.cfm.

15 The biodiversity hotspots hold especially high numbers of endemic species, yet their combined area of remaining habitat covers only 2.3 percent of the Earth's land surface. Each hotspot faces extreme threats and has already lost at least 70 percent of its original natural vegetation. Over 50 percent of the world's plant species and 42 percent of all terrestrial vertebrate species are endemic to the 34 biodiversity hotspots. From Conservation International Website at: www.biodiversityhotspots.org.

16 See: www.nrdc.org/cities/smartgrowth/pwild.asp.

17 See: http://baraza.wildlifedirect.org/2010/07/05/richard-leakey-comments-on-the-serengeti-highway/.

18 Lowe SJ, M Browne and S Boudjelas (2000). 100 of the World's Worst Invasive Alien Species. Auckland, New Zealand: IUCN/SSC Invasive Species Specialist Group (ISSG).

19 ICLEI (2008). City of São Paolo Biodiversity Report.

20 See: www.iucn.org/about/work/programmes/species/our_work/climate_change_and_species/.

21 Secretariat of the Convention on Biological Diversity (2010) Global Biodiversity Outlook 3. Montreal.

22 UNEP. Earthscan (1999). Global Environment Outlook 2000. London.

23 The Plan of Action, available at: http://www.cbd.int/strategicplan.shtml will be submitted by Brazil for the consideration of COP 10 in Nagoya, Japan, in October 2010.

24 Seoul Draft Biodiversity Report.

25 In 2007, UN-HABITAT adopted the International Guidelines on Decentralisation and the Strengthening of Local Authorities to provide a common framework.

26 The United Republic of Tanzania, Minister of State (Environment) (2006). Mainstreaming environment and climate change concerns in national planning in Tanzania.

27 Kenya's 4th National Report to CBD.

28 Ecuador's 4th National Report to CBD, 119.

29 Entek UK Ltd (2010) Defra CTX 0811: Review of the Biodiversity Duty contained in Section 40 of the NERC Act 2006.

30 Wintle, BA A review of biodiversity investment prioritization tools. Available at: http://cyllene.uwa.edu.au/~dpannell/biod_tools.pdf.

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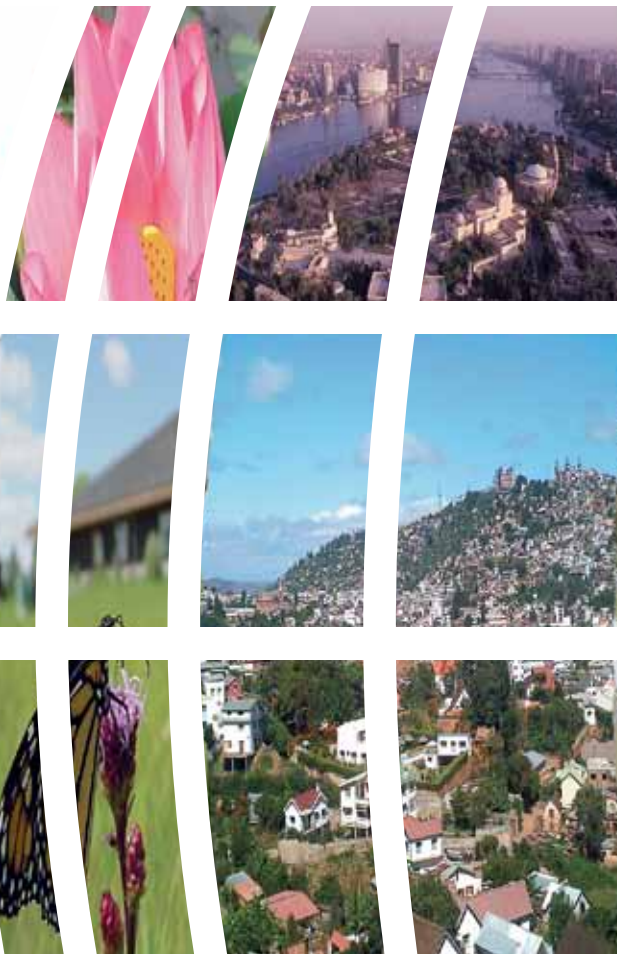

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