



Local authorities for biodiversity management

Bri Vos 2007

- Biodiversity is an extremely valuable asset for human well-being since it is essential for healthy ecosystems, which are able to provide important goods and services to people and remain the basis for their lives.
- In order to halt the loss of species, local and regional authorities can incorporate sound biodiversity management in their existing fields of activity, such as environmental and development planning, municipal service provision, procurement, green space management and awareness raising and participation.

Biodiversity is essential for local development

Biodiversity, understood as the sum of species, habitats and genetic diversity, lies at the heart of any healthy ecosystem. Stable and well-functioning local ecosystems are highly productive. But how exactly does biodiversity contribute to local development and people's well-being?

Plants, animals and other living organisms associated in a particular habitat provide certain goods (ecosystem products that can be utilised by humans) and services (benefits that arise from the use of these goods). Important examples of such goods and services are the provision of clean water and air, the production of fertile soil and the protection from floods (see box).

Many of these goods and services are crucial to human existence and economic activity. Originally, all

ecosystem goods, including plant species that are now cultivated in large quantities, evolved from biologically diverse ecosystems.

Therefore, sustainable local development and the very economic activities that make cities and towns prosper are primarily based on ecosystem goods and serv-

ices. Ultimately, biodiversity conserves the pool of genetic resources that forms the basis of life on Earth.

Regions, cities and towns have the regulatory mandate to control and optimise human impact on ecosystems, which is particularly critical in densely populated areas.

Goods and Services provided by ecosystems

Goods (provisioning services)		
<ul style="list-style-type: none"> • Food, fibre and fuel; genetic resources; biochemicals; fresh water 		
Regulating Services <ul style="list-style-type: none"> • Invasion resistance • Herbivory • Pollination • Seed dispersal • Climate regulation • Pest regulation • Disease regulation • Natural hazard protection • Erosion regulation • Water purification 	Supporting Services <ul style="list-style-type: none"> • Primary production • Provision of habitat • Nutrient cycling • Soil formation and retention • Production of atmospheric oxygen • Water cycling 	Cultural Services <ul style="list-style-type: none"> • Spiritual and religious values • Knowledge system • Education and inspiration • Recreation and aesthetic values

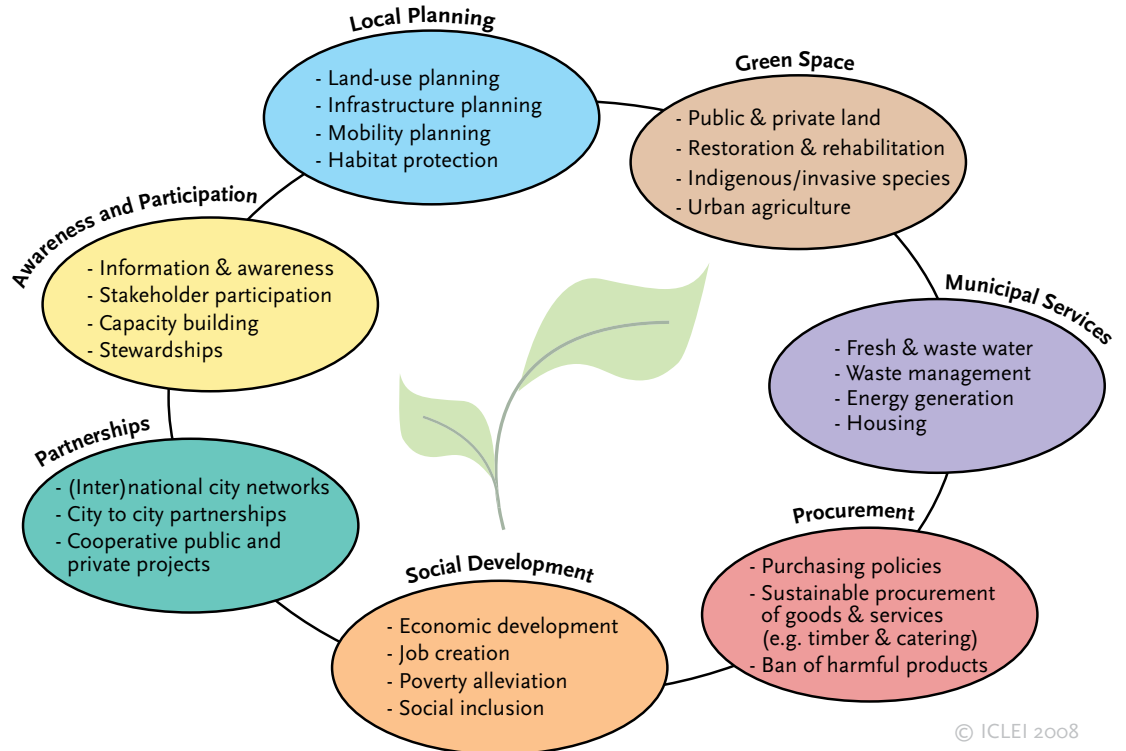
Source: CBD 2006: Global Biodiversity Outlook 2, p. 14.

Biodiversity: Areas of activity for cities and regions

Benefits derived from biodiversity can materialise at the local and regional level in many different ways. Not only does sound biodiversity management contribute to the maintenance of the local and regional economy, it also ensures the health of citizens and the quality of life in general.

Regions, cities and towns do not have to fundamentally change the structure of their administrative and planning processes in order to put greater emphasis on biodiversity. Since there is a vast array of factors that determine the diversity of ecosystems, management options arise in almost all traditional activity fields of local and regional governments (see diagram): Environmental and development planning, municipal service provision, procurement, green space

How to integrate biodiversity into local government responsibilities



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management, and awareness raising and participation.

In all these fields, specific and often simple measures can help to maintain or in-

crease local biodiversity and the health and productivity of ecosystems. The main challenge is to integrate the activities in each of these areas

into a coherent, integrated strategy for biodiversity management. The following sections give examples of possible activities.

Land use planning

Land-use planning is the most relevant instrument for protecting and managing local biodiversity. If land use plans are based on local biodiversity assessments they

can lead to systematically conserving or enlarging particularly diverse habitats.

Protecting endangered habitats is a powerful instrument

for conserving local biodiversity. Experience with integrated management approaches also indicate that small pockets of carefully planned urban green space can provide important habitat islands for particular species, helping them to survive even within dense urban settlements. For example, zoning for small inner-city green spaces consisting of native, locally well adapted flora will boost urban biodiversity by providing shelter for many birds and insects, which may provide a basis for larger city-dwelling animals being able to live in built-up areas. Such pockets of native flora also increases the attractive-

ness of residential areas and dense inner-city quarters.

Apart from zoning, infrastructure planning is also a powerful instrument for local biodiversity management. Sound planning of traffic arteries, for example, can help reduce the fragmentation of valuable local habitats by providing green belts, tunnels and bridges that enable animals to move around.

In addition to this, smart urban mobility planning that integrates different means of public transport can reduce the need for more and wider roads, which prevents habitat fragmentation and helps keep air pollution at bay.

Land use planning as a local and regional government instrument for biodiversity management

- Halt man-made habitat destruction, soil sealing and fragmentation caused by urban sprawl and the consumption of land, through zoning, smart mobility planning, etc.;
- Protect endangered habitats, increase green space in built-up areas, and help linking up habitats;
- Stop overexploitation of resources, such as logging of municipal forests and overextraction of ground water;
- Minimize pollution, particularly nutrient pollution in soil and water;
- Use regulatory mechanisms such as urban land use plans for directing private investments and decisions.

Municipal services

In the field of municipal service provision, the dependency on healthy and productive ecosystems is particularly evident. It is part of the mandate of local and regional authorities to ensure that ecosystem (and thus municipal) services are available and will continue to be in the future.

For example, only intact ecosystems can provide clean drinking water at low cost, without having to invest large efforts into water purification. For this reason, watersheds are usually protected areas of prime importance and significance. The natural process of water purification is invaluable and depends on the interplay between living (e.g. plants and bacteria) and non-living (e.g. soil and rock) components of the environment that all play a crucial role in filtering, stor-

ing and releasing fresh water. Local authorities can directly influence the maintenance of these services by imposing land use restrictions in watersheds. Catchment protection can be driven by local and regional councils beyond the existing legislative requirements. If the local council owns the land in the watershed, it can lease it to private users and impose particular restrictions and conditions that help protect the ecosystem functions of the catchment.

At the other end of the chain of municipal service provision is the waste management sector, including waste water treatment and solid waste disposal. Waste can have severe impacts on the environment and adversely affect biodiversity. It is therefore imperative for local and regional authorities to

put effective waste water collection, treatment and nutrient retention measures into force, which avoid nutrient overload in soils and streams. Nutrient overload is one of the most common causes of decline in biodiversity, as many plant species do not tolerate high nutrient levels, nor a high variability in nutrient levels or chemical water pollution.

Cities and entire regions profit directly and indirectly from biodiversity and the associated ecosystem services. This also puts them in charge for ensuring that nature's productivity is maintained by providing adequate habitat space and healthy environmental conditions for local species.



Procurement

Many municipal services are provided through public procurement mechanisms. Procurement is an important municipal instrument that affects biodiversity management.

Through public procurement, government authorities contribute a great deal to the global demand in raw and manufactured goods, which are then used locally, e.g. for building, construction, cleaning and maintenance.

However, many of these goods, such as food, timber, paper, and textiles, are based on resource extraction from nature that can potentially destroy ecosystems and

harm biodiversity. Increasing the share of goods produced in an ecologically sustainable way (e.g. certified environmentally friendly products) can effectively decrease the pressure on biodiversity in the countries of origin.

There are many examples of goods for which local and regional authorities can change their procurement policies: construction timber, cleaning and other maintenance products (e.g. paints), food products for public canteens, and, with direct impacts on the local biodiversity, the reduction of pesticides applied to parks and other green spaces, or alternatively the use of organic pesticides.

Sustainable Procurement:

The City of Barcelona's 'Responsible Timber' procurement policy

Since 2000, the City of Barcelona has included sustainability criteria in its day to day work and also in public procurement processes. Given the City's political interest in improving sustainable procurement practices, its Environment and Sustainability Department adopted an Institutional Declaration that urged the Council to contribute to the protection of ancient forests, to not use illegally-felled timber and to promote the purchase of certified timber.

The City implemented its 'Responsible Timber' procurement policy first as a Government Measure and then as a Mayoral Decree (approved in July 2004). The Decree established a non-exclusive system of certifications of sustainable forest management as a tendering criteria for all public procurement processes. Since then the City of Barcelona has gained a reputation as a leader in sustainable procurement in Europe.

Green space management

Green space management is a particularly obvious area where local and regional governments can become active in order to conserve biodiversity.

The management of public parks and 'green spots' in the city can focus on local biodiversity enhancement and conservation, e.g. by planning urban green belts, and thus improve the 'connectivity' of fragmented

habitats in cities. Also, local authorities can favour locally native plants over exotic, poorly adapted species. This will also keep maintenance costs down (e.g. for watering, pesticides).

Regions and cities often hold decision-making authority over large areas of woodland. Local forests are not only valuable in terms of biodiversity management but are also aesthetically important.

Healthy and diverse ecosystems, such as local forests, lead to a vast number of economic spin-off effects on the city and region, such as attracting tourists and businesses. Management efforts towards maintaining and improving biodiversity in green spaces can therefore pay off in many ways.

Further details on green space management are provided in Factsheet 7.

Awareness raising and participation

Raising awareness on biodiversity and encouraging the participation of the wider public has proven key to successful biodiversity management at the local and regional level.

Differing from national-level activities, local and regional authorities have the opportunity to directly reach out to the local population. Involving citizens can take on varying forms and levels of participation: From providing information and raising

awareness to initiating multi-stakeholder participation processes, to concrete partnerships, stewardship and active collaboration between local and regional authorities and the people.

Involving citizens also means addressing conflicting interests, e.g. between biodiversity management and the local economy. Local and regional authorities can develop incentives for participation in biodiversity management, such as calling for tree plant-

ing activities and in return providing participants with benefits, such as free access to public facilities (e.g. pools, zoos, botanical gardens).

Often, local civil society groups are already doing meaningful work on biodiversity, which can be informed and supplemented by local councils' management strategies.

More detailed information on awareness raising and citizen involvement is available on Factsheet 5.

This document is part of a series of factsheets that are intended to provide guidance and information on biodiversity management to decision-makers at the local and regional level. For more detailed information on how local and regional authorities have contributed to stopping biodiversity loss, please visit our web site www.countdown2010.net/lara or contact us directly. All factsheets can be downloaded from www.countdown2010.net/lara.



Supported by the Ministry of Agriculture, Nature and Food Quality, The Netherlands.

Facts & Figures

- Every fourth (24%) mammal and every eighth bird (12%) in Europe is facing a high risk of extinction.
- Threatened mammals include the European mink, the Arctic fox, various types of squirrels and lizards, and all European dolphins, seals and whales.

Urban biodiversity...

is biological diversity of urban areas. It is heavily influenced by the built environment and the economic, social and cultural dynamics of these densely populated places.

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This factsheet was compiled in 2008 by ICLEI with the support of Countdown 2010, ECNC and LAB.